July 2017 | Initial Study/Mitigated Negative Declaration

# TEMEC ULA VA山EY CHARIER SCHOOL 

County of Riverside

Prepared for:
County of Riverside
Contact: Larry Ross
4080 Lemon Street, $12^{\text {th }}$ Floor
Riverside, California 92502
951.955.9294

Prepared by:
PlaceWorks
Contact: Dwayne Mears, Principal, Schools Facilities Planning
3 MacArthur Place, Suite 1100
Santa Ana, California 92707
714.966.9220
info@placeworks.com
www.placeworks.com
Section Page

1. INTRODUCTION ..... 1
1.1 PROJECT LOCATION ..... 1
1.2 ENVIRONMENTAL SETTING ..... 2
1.3 PROJECT DESCRIPTION ..... 2
1.4 EXISTING ZONING AND GENERAL PLAN ..... 4
1.5 COUNTY ACTION REQUESTED ..... 4
2. ENVIRONMENTAL CHECKLIST ..... 21
2.1 BACKGROUND ..... 21
2.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED ..... 23
2.3 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY) ..... 23
2.4 EVALUATION OF ENVIRONMENTAL IMPACTS ..... 24
3. ENVIRONMENTAL ANALYSIS ..... 37
3.1 AESTHETICS ..... 37
3.2 AGRICULTURE AND FORESTRY RESOURCES ..... 39
3.3 AIR QUALITY ..... 40
3.4 BIOLOGICAL RESOURCES ..... 47
3.5 CULTURAL RESOURCES ..... 66
3.6 GEOLOGY AND SOILS ..... 71
3.7 GREENHOUSE GAS EMISSIONS ..... 80
3.8 HAZARDS AND HAZARDOUS MATERIALS ..... 84
3.9 HYDROLOGY AND WATER QUALITY ..... 86
3.10 LAND USE AND PLANNING ..... 92
3.11 MINERAL RESOURCES ..... 95
3.12 NOISE ..... 96
3.13 POPULATION AND HOUSING ..... 109
3.14 PUBLIC SERVICES ..... 110
3.15 RECREATION ..... 112
3.16 TRANSPORTATION/TRAFFIC ..... 113
3.17 UTILITIES AND SERVICE SYSTEMS ..... 133
3.18 MANDATORY FINDINGS OF SIGNIFICANCE ..... 137
4. REFERENCES ..... 139
5. LIST OF PREPARERS ..... 145
COUNTY OF RIVERSIDE ..... 145
TEMECULA VALLEY CHARTER SCHOOL ..... 145
PLACEWORKS ..... 145

## Table of Contents

## APPENDICES

Appendix A Health Risk Assessment
Appendix B Air Quality and Greenhouse Gas Background and Modeling Data
Appendix C1 Habitat Assessment
Appendix C2 Fairy Shrimp Survey
Appendix D Geotechnical Investigation
Appendix E Paleontological Technical Study
Appendix F Phase I Environmental Site Assessment
Appendix G Noise and Vibration Background and Modeling Data
Appendix H Traffic Impact Analysis

## List of Figures

Figure Page
Figure 1 Regional Location ..... 5
Figure 2 Local Vicinity ..... 7
Figure 3 Aerial Photograph ..... 9
Figure 4 Site Photographs ..... 11
Figure 5 Site Photographs ..... 13
Figure 6 Site Plan 15
Figure 7 Elevations, Multipurpose Building. ..... 17
Figure $8 \quad$ Elevations, Classroom Building C2 ..... 19
Figure 9 MSHCP Criteria Cells and Constrained Linkage ..... 53
Figure 10 Plant Communities Map ..... 57
Figure 11 Project Trip Distribution ..... 119
Figure 12 Cumulative Developments Location Map ..... 123
Figure 13 Project Site Access Improvements. ..... 129

## List of Tables

Table Page
Table 1 Maximum Daily Regional Construction Emissions ..... 42
Table 2 Maximum Daily Regional Operational Phase Emissions ..... 43
Table 3 Localized Construction Emissions. ..... 44
Table 4 Health Risk Assessment Results ..... 46
Table 5 MSHCP Review Summary ..... 48
Table 6 Acreage of Plant Communities on the Project Site ..... 55
Table 7 Special Status Plant Species Potentially Occurring on the Project Site ..... 60
Table 8 Construction Best Management Practices ..... 74
Table 9 Project-Related GHG Emissions ..... 82
Table 10 Stationary Source Land Use Noise Standards ..... 98
Table 11 Existing and Future Noise Level Estimates ..... 100
Table 12 Project-Related Construction Noise Levels ..... 104
Table $13 \quad$ Vibration Levels for Typical Construction Equipment ..... 106
Table 14 Architectural Damage Vibration Levels from Construction Equipment ..... 107

## Table of Contents

Table 15 Average Annoyance Vibration Levels from Construction Equipment. ..... 108
Table 16 Study Area Intersections ..... 114
Table 17 Intersection Level of Service Descriptions ..... 115
Table 18 Existing Peak Hour Intersection Levels of Service ..... 117
Table 19 Project Trip Generation. ..... 117
Table 20 Intersection Delay and LOS, Existing Plus Project Conditions ..... 118
Table 21 Intersection Delay and LOS, EAP Conditions. ..... 122
Table 22 Intersection Delay and LOS, 2018 No Project Conditions ..... 122
Table 23 Intersection Delay and LOS, 2018 with Project and Cumulative Projects Traffic Conditions125
Table 24 EMWD Forecast Water Supplies and Demands, acre-feet per year ..... 134
Table 25 Landfills Serving Murrieta and Menifee ..... 135


## Abbreviations and Acronyms

| CO | carbon monoxide |
| :---: | :---: |
| $\mathrm{CO}_{2} \mathrm{e}$ | carbon dioxide equivalent |
| Corps | US Army Corps of Engineers |
| CSO | combined sewer overflows |
| CUPA | Certified Unified Program Agency |
| CWA | Clean Water Act |
| dB | decibel |
| dBA | A-weighted decibel |
| DPM | diesel particulate matter |
| DTSC | Department of Toxic Substances Control |
| EIR | environmental impact report |
| EPA | United States Environmental Protection Agency |
| EPCRA | Emergency Planning and Community Right-to-Know Act |
| FEMA | Federal Emergency Management Agency |
| FHWA | Federal Highway Administration |
| FTA | Federal Transit Administration |
| GHG | greenhouse gases |
| GWP | global warming potential |
| HCM | Highway Capacity Manual |
| HQTA | high quality transit area |
| HVAC | heating, ventilating, and air conditioning system |
| IPCC | Intergovernmental Panel on Climate Change |
| $L_{\text {dn }}$ | day-night noise level |
| $\mathrm{L}_{\text {eq }}$ | equivalent continuous noise level |
| LBP | lead-based paint |
| LCFS | low-carbon fuel standard |
| LOS | level of service |
| LST | localized significance thresholds |
| $\mathrm{M}_{\mathrm{W}}$ | moment magnitude |
| MCL | maximum contaminant level |
| MEP | maximum extent practicable |
| mgd | million gallons per day |
| MMT | million metric tons |


| MPO | metropolitan planning organization |
| :---: | :---: |
| MT | metric ton |
| MWD | Metropolitan Water District of Southern California |
| NAHC | Native American Heritage Commission |
| $\mathrm{NO}_{\mathrm{x}}$ | nitrogen oxides |
| NPDES | National Pollution Discharge Elimination System |
| $\mathrm{O}_{3}$ | ozone |
| OES | California Office of Emergency Services |
| PM | particulate matter |
| POTW | publicly owned treatment works |
| ppm | parts per million |
| PPV | peak particle velocity |
| RCRA | Resource Conservation and Recovery Act |
| REC | recognized environmental condition |
| RMP | risk management plan |
| RMS | root mean square |
| RPS | renewable portfolio standard |
| RWQCB | Regional Water Quality Control Board |
| SB | Senate Bill |
| SCAG | Southern California Association of Governments |
| SCAQMD | South Coast Air Quality Management District |
| SIP | state implementation plan |
| SLM | sound level meter |
| SoCAB | South Coast Air Basin |
| $\mathrm{SO}_{\mathrm{X}}$ | sulfur oxides |
| SQMP | stormwater quality management plan |
| SRA | source receptor area [or state responsibility area] |
| SUSMP | standard urban stormwater mitigation plan |
| SWP | State Water Project |
| SWPPP | Storm Water Pollution Prevention Plan |
| SWRCB | State Water Resources Control Board |
| TAC | toxic air contaminants |
| TNM | transportation noise model |

Abbreviations and Acronyms

| tpd | tons per day |
| :--- | :--- |
| TRI | toxic release inventory |
| TTCP | traditional tribal cultural places |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |
| UST | underground storage tank |
| UWMP | urban water management plan |
| V/C | volume-to-capacity ratio |
| VdB | velocity decibels |
| VHFHSZ | very high fire hazard severity zone |
| VMT | vehicle miles traveled |
| VOC | volatile organic compound |
| WQMP | water quality management plan |
| WSA | water supply assessment |

## 1. Introduction

The Temecula Valley Charter School Board of Directors is seeking approval from Riverside County for development of a public charter school for $600 \mathrm{~K}-8$ students in the community of French Valley in unincorporated Riverside County. Temecula Valley Charter School is proposing to relocate an existing charter school campus from 35755 Abelia Street in French Valley (about 1.4 miles southeast of the proposed project site) to the proposed campus-two parcels on the west side of Winchester Road (State Route 79) between Keller Road and Pourroy Road.

### 1.1 PROJECT LOCATION

The project site is in the unincorporated community of French Valley in western Riverside County. French Valley is surrounded by unincorporated county to the south and east; unincorporated county and the City of Menifee to the north; and the City of Murrieta and unincorporated county to the west (see Figure 1, Regional Location). French Valley is part of the larger San Jacinto Basin, a broad valley interspersed with hills that spans much of western Riverside County. The basin is bounded by the Santa Ana Mountains on the southwest and the San Jacinto Mountains on the northeast. Regional access to the site is via Winchester Road (SR-79), which passes next to the eastern site boundary.

The project site is about 14.6 acres and consists of two parcels: Assessor's Parcels Number (APN) 476010059 and APN 476010013. The site is about 1,120 feet north of the intersection of SR-79 with Pourroy Road/Abelia Street (see Figure 2, Local Vicinity). The proposed school site is approximately 8.5 acres, consisting of all of parcel -059 and the east edge and southeastern part of parcel -013.

An unnamed existing road, partly paved and partly dirt, provides access from SR-79 to the residences on the western parcel.

The site includes approximately 1,235 linear feet of Koon Street along the southern site boundary. The project would develop Koon Street to its ultimate half-width, or about 18 feet wide including curb and gutter; the area of Koon Street to be developed would be about 0.5 acre.

The project would also develop the eastern half-width of a segment of Pourroy Road, currently a dirt road, extending from its intersection with Flossie Way about 385 feet south to an existing paved segment of Pourroy Road. The area of Pourroy Road to be developed is about 0.16 acre.

In this document, "project site" refers to the two parcels totaling 14.6 acres plus the sites of the two roadway improvements that total about 0.65 acres. "School site" refers to the 8.5 -acre site of the proposed school.

### 1.2 ENVIRONMENTAL SETTING

### 1.2.1 Existing Land Use

The western parcel is developed with two single-family residences, one garage, and two above-ground water tanks. The eastern parcel is vacant and appeared to have been tilled shortly before a site visit on July 21, 2016 (see Figure 3, Aerial Photograph, and Figures 4 and 5, Site Photographs).

### 1.2.2 Surrounding Land Use

The project site is surrounded by rural residential uses to the west and north; a single-family home abuts the northern site boundary on west. The project site is surrounded by vacant land to the south and by vacant land and agricultural uses to the east across SR-79 (see Figure 3, Aerial Photograph). Lake Skinner Recreation Area is about 1.7 miles to the southeast, and Diamond Valley Lake is about 3 miles to the northeast. Interstate 215 is about 4.1 miles to the west. Two concrete culverts pass under SR-79 east of the project site, carrying stormwater southeastward under the roadway.

### 1.3 PROJECT DESCRIPTION

### 1.3.1 Proposed Land Use

The project consists of construction and operation of a K-8 charter school for 600 students. Six one-story school buildings, totaling about 44,998 square feet of building area, would be clustered in the east-central part of the project site around a quad (see Figure 6, Site Plan). The buildings would consist of four classroom buildings containing 31 classrooms and totaling 27,180 square feet; a 9,468-square-foot multipurpose building; and an 8,350 -square-foot administration building. The multipurpose building, which would be built in the south-central part of the project site, would be about 27 feet high, and the four classroom buildings would each be about 18 feet high (see Figures 7, Elevations, Multipurpose Building, and 8, Elevations, Classroom Building C2).

Most of the westerly parcel onsite would be left as is. The vacant single-story residence atop the hill in the northwestern part of the project site, and the garage, two aboveground water tanks and a concrete pad in the west-central part of the project site would remain. A mobile home in the west-central part of the project site would be removed.

The northwestern part of the project site, a hill topped by a vacant single-family residence, would be left as is.

## Athletic Facilities

Athletic facilities would consist of the multipurpose room, and a soccer field in the southwest corner of the school site.

## Access and Parking

School site access would be via Koon Street, currently a paper street, which would begin at the Flossie Way/Pourroy Road, extend along the project site's southern boundary and end in a cul-de-sac at SR-79. School access from the Koon Street cul-de-sac would be via two 1-way driveways forming an elongated oneway loop next to the east site boundary, with the school's 100 -space parking lot in the center of the loop. A fire land would extend over paved areas around the school buildings. A flow-through drop-off lane would loop around the periphery of the parking lot.

A new driveway would be built just west of the campus connecting an existing driveway from the remaining residence on the hill to Koon Street.

Project development would also include paving approximately 385 feet of Pourroy Road extending south from the intersection of Koon Street to a currently paved portion of Pourroy Road. The areas of Koon Street and Pourroy Road that would be developed would total about 0.65 acre.

## Landscaping

About 3.3 acres of landscaping would be installed; the majority of which would be in the southwest part of the school site and would include the new soccer field; with most of the remainder being along the northeast campus perimeter (see Figure 5, Site Plan).

## Hardscape

The project proposes development of about 180,500 square feet, or about 4.1 acres, of pavement, including a surface parking lot, driveways, and walkways.

### 1.3.2 Project Operation

## Staff

Project operation would employ about 40 faculty and staff.

## Calendar and Schedule

Currently, student school days on the academic calendar of the existing Temecula Valley Charter School for the 2016-17 school year extend from August 17, 2016, to June 2, 2017. However, the academic calendar for the opening year of the charter school (which is anticipated for fall of 2018) and beyond may change based on the needs of the Temecula Valley Charter School or Temecula Valley Unified School District.

The schedule for the existing Temecula Valley Charter School extends from 8:50 AM to 2:50 PM for elementary grades, and from 7:55 AM to 2:50 PM for middle school grades, on Mondays, Tuesdays, Thursdays, and Fridays; school is dismissed early at 1:45 PM for all grades on Wednesdays. However, the calendar and schedule will be subject to change based on the needs of the school or the Temecula Valley Unified School District.

1. Introduction

### 1.3.3 Project Phasing

## Site Clearance

Site clearance would include removal of the mobile home in the west-central part of the project site.

## Construction

The overall construction schedule is one year, from summer/fall 2017 through summer 2018.

- Site Preparation and Grading. School site preparation and grading are expected to take about two months, commencing in summer 2017. The school site is expected to be balanced, with no soil export or import anticipated. A total of 8.5 acres of the school site would be disturbed during project construction.
- Utility Trenching. Utility Trenching is anticipated to take approximately one month, August 2017.
- Building Construction. Building construction is scheduled for nine months, September 2017 through May 2018.
- Asphalt Paving, Finishing, and Landscaping. Asphalt paving, finishing, and landscaping are expected to be completed in one month, May 2018.
- Architectural Coating. Architectural coating is anticipated to take three months, March through May 2018.


### 1.4 EXISTING ZONING AND GENERAL PLAN

The existing zoning and Riverside County General Plan designations for the project site are both Rural Residential (R-R); the R-R zone permits development of single-family residences. Schools are permitted in the R-R zoning with a Public Use Permit.

### 1.5 COUNTY ACTION REQUESTED

- Adoption of the Mitigated Negative Declaration for CEQA clearance
- Approval of Development Plan
- Approval of Public Use Permit (PUP00931)

Figure 1 - Regional Location 1. Introduction


## 1. Introduction

This page intentionally left blank.

Figure 2 - Local Vicinity 1. Introduction


Project Boundary
Temecula Sphere of Influence Boundary
1,000

## 1. Introduction

This page intentionally left blank.


[^0]
## 1. Introduction

This page intentionally left blank.

Figure 4 - Site Photographs 1. Introduction


View looking northeast from the south part of the project site.


View looking northwest from the east part of the site.

## 1. Introduction

This page intentionally left blank.

Figure 5 - Site Photographs 1. Introduction


View looking west across the site from the northeast corner of the site.


View looking south across the site from the north part of the site

## 1. Introduction

This page intentionally left blank.

TEMECULA VALLEY CHARTER SCHOOL INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
Figure 2 - Site Plan 1. Introduction


## 1. Introduction

This page intentionally left blank.

TEMECULA VALLEY CHARTER SCHOOL INITIAL STUDY/MITIGATED NEGATIVE DECLARATION COUNTY OF RIVERSIDE

Figure 7 - Elevations, Multipurpose Building 1. Introduction


## 1. Introduction

This page intentionally left blank.

TEMECULA VALLEY CHARTER SCHOOL INITIAL STUDY/MITIGATED NEGATIVE DECLARATION COUNTY OF RIVERSIDE

Figure 8 - Elevations, Classroom Building C2 1. Introduction


Classroom Building C2 - North Elevation (1)


Classroom Building C2-South Elevation (2)


Classroom Building C2 - East Elevation (4)


Classroom Building C2 - West Elevation (3)

## 1. Introduction

This page intentionally left blank.

## 2. Environmental Checklist

### 2.1 BACKGROUND

1. Project Title: Temecula Valley Charter School
2. Lead Agency Name and Address:

County of Riverside Planning Department
4080 Lemon Street, 12th Floor
Riverside, CA 92502
3. Contact Person and Phone Number:

Larry Ross, Principal Planner 951.955.9294

## 4. Project Location:

The 14.6-acre project site is in the community of French Valley in western Riverside County. The site is on the west side of SR-79, approximately 780 feet southeast of the intersection of Keller Road and SR79.
5. Project Sponsor's Name and Address:

Temecula Valley Charter School
35755 Abelia Street
Winchester, CA 92596
6. General Plan Designation: Rural Residential
7. Zoning: Rural Residential (R-R)
8. Description of Project:

The proposed project would be a public charter school for 600 students in grades K-8.
9. Surrounding Land Uses and Setting:

The project site is surrounded by rural residential uses to the west and north; a single-family home abuts the northern site boundary on west. The project site is surrounded by vacant land to the south and by vacant land and agricultural uses to the east across SR-79. Lake Skinner Recreation Area is about 1.7 miles to the southeast, and Diamond Valley Lake is about 3 miles to the northeast. Interstate 215 is about 4.1 miles to the west. Two concrete culverts pass under SR-79 east of the project site, carrying stormwater southeastward under the roadway.

## 2. Environmental Checklist

10. Other Public Agencies Whose Approval Is Required:

- San Diego Regional Water Quality Control Board


### 2.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.
$\square$ Agriculture / Forestry Resources
Cultural Resources
$\square$ Hazards / Hazardous Materials
Air Quality
Geology / Soils
$\square$ Mineral Resources
Hydrology / Water QualityPublic Services
$\square$ NoiseUtilities / Service Systems
$\square$ Recreation
$\square$ Mandatory Findings of Significance

### 2.3 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

$\square$
I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.


I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.


I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.


I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

$\square$
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

7-7ー17

Date

Charissa Leach, P.E., Assistant TLMA
Director
For

Printed Name

## 2. Environmental Checklist

### 2.4 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a projectspecific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
a) Earlier Analyses Used. Identify and state where they are available for review.
b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated. A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

## 2. Environmental Checklist

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
a) the significance criteria or threshold, if any, used to evaluate each question; and
b) the mitigation measure identified, if any, to reduce the impact to less than significant.

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | $\begin{gathered} \text { No } \\ \text { Impact } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| I. AESTHETICS. |  |  |  |  |
| 1. SCENIC RESOURCES. Would the project: |  |  |  |  |
| a) Have a substantial effect upon a scenic highway corridor within which it is located? |  |  |  | X |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and unique or landmark features; obstruct any prominent scenic vista or view open to the public; or result in the creation of an aesthetically offensive site open to public view? |  |  | X |  |
| 2. MT. PALOMAR OBSERVATORY. Would the project: |  |  |  |  |
| a) Interfere with the nighttime use of the Mt. Palomar Observatory, as protected through Riverside County Ordinance No. 655? |  |  | X |  |
| 3. OTHER LIGHTING ISSUES. Would the project: |  |  |  |  |
| a) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? |  |  | X |  |

II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.
4. AGRICULTURE. Would the project:

| a)Convert Prime Farmland, Unique Farmland, or Farmland of <br> Statewide Importance (Farmland), as shown on the maps <br> prepared pursuant to the Farmland Mapping and Monitoring <br> Program of the California Resources Agency, to non- <br> agricultural use? |  |  |  |  |
| :--- | :--- | :--- | :--- | :---: |
| b)Conflict with existing zoning for agricultural use, or a <br> Williamson Act contract or land within a Riverside County <br> Agricultural Preserve? |  |  |  |  |
| c)Cause development of non-agricultural uses within 300 feet of <br> agriculturally zoned property (Ordinance No. 625 "Right-to- <br> Farm")? |  |  |  |  |

## 2. Environmental Checklist

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | $\begin{gathered} \text { No } \\ \text { Impact } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| d) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? |  |  |  | X |
| 5. FOREST. Would the project: |  |  |  |  |
| a) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? |  |  |  | X |
| b) Result in the loss of forest land or conversion of forest land to non-forest use? |  |  |  | X |
| c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use? |  |  |  | X |

III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.
6. AIR QUALITY IMPACTS. Would the project:

| a)Conflict with or obstruct implementation of the applicable air <br> quality plan? |  |  | X |  |
| :--- | :--- | :--- | :--- | :--- |
| b)Violate any air quality standard or contribute substantially to <br> an existing or projected air quality violation? |  |  |  |  |
| c)Result in a cumulatively considerable net increase of any <br> criteria pollutant for which the project region is non-attainment <br> under an applicable federal or state ambient air quality <br> standard (including releasing emissions which exceed <br> quantitative thresholds for ozone precursors)? |  | $\mathbf{X}$ |  |  |
| d)Expose sensitive receptors to substantial pollutant <br> concentrations? |  |  |  |  |
| e)Involve the construction of a sensitive receptor located within <br> one mile of an existing substantial point source emitter? |  | $\mathbf{X}$ |  |  |
| f)Create objectionable odors affecting a substantial number of <br> people? |  |  |  |  |
| g)Is the boundary of the proposed school site within 500 feet of <br> the edge of the closest traffic lane of a freeway or busy traffic <br> corridor? If yes, would the project create an air quality health <br> risk due to the placement of the School? |  | $\mathbf{X}$ |  |  |
| h)Would the project create an air quality hazard due to the <br> placement of a school within one-quarter mile of: (a) permitted <br> and nonpermitted facilities identified by the jurisdictional air <br> quality control board or air pollution control district; (b) <br> freeways and other busy traffic corridors; (c) large agricultural <br> operations; and/or (d) a rail yard, which might reasonably be <br> anticipated to emit hazardous air emissions, or handle <br> hazardous or acutely hazardous material, substances, or <br> waste? |  | $\mathbf{X}$ |  |  |

2. Environmental Checklist

IV. BIOLOGICAL RESOURCES.
3. WILDLIFE AND VEGETATION. Would the project:

| a) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? |  |  | X |  |
| :---: | :---: | :---: | :---: | :---: |
| b) Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)? |  |  | X |  |
| c) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Wildlife Service? |  |  | X |  |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? |  |  | X |  |
| e) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? |  |  |  | X |
| f) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? |  |  |  | X |
| g) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? |  |  |  | X |
| V. CULTURAL RESOURCES. |  |  |  |  |
| 8. HISTORIC RESOURCES. Would the project: |  |  |  |  |
| a) Alter or destroy an historic site? |  |  |  | X |
| b) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5? |  | X |  |  |
| 9. ARCHAEOLOGICAL RESOURCES. Would the project: |  |  |  |  |
| a) Alter or destroy an archaeological site? |  |  |  | X |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? |  | X |  |  |
| c) Disturb any human remains, including those interred outside of formal cemeteries? |  |  | X |  |
| d) Restrict existing religious or sacred uses within the potential impact area? |  |  |  | X |

## 2. Environmental Checklist

| Issues | Potentially <br> Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | $\begin{gathered} \text { No } \\ \text { Impact } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| 10. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: |  |  |  |  |
| a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or <br> A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c). of Public Resources Code Section 5024.1 for the purpose of this paragraph, the lead agency shall consider the significance to a California Native tribe. |  | X |  |  |
| VI. GEOLOGY AND SOILS. Would the project: |  |  |  |  |
| 11. ALQUIST-PRIOLO EARTHQUAKE FAULT ZONE OR COUNTY FAULT HAZARD ZONES |  |  |  |  |
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death |  |  |  | X |
| b) Be subject to rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? |  |  |  | X |
| 12. LIQUEFACTION POTENTIAL ZONE |  |  |  |  |
| a) Be subject to seismic-related ground failure, including liquefaction? |  |  | X |  |
| 13. GROUND-SHAKING ZONE |  |  |  |  |
| a) Be subject to strong seismic ground shaking? |  |  | X |  |
| 14. LANDSLIDE RISK |  |  |  |  |
| a) Be located on a geologic unit or soil that is unstable, or that would become unstable due to the project, and potentially result in on- or off-site landslide, lateral spreading, collapse, or rockfall hazards? |  |  | X |  |
| 15. GROUND SUBSIDENCE |  |  |  |  |
| a) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in ground subsidence? |  |  | X |  |
| 16. OTHER GEOLOGIC HAZARDS |  |  |  |  |
| a) Be subject to geologic hazards, such as seiche, mudflow, or volcanic hazard? |  |  | X |  |
| 17. SLOPES |  |  |  |  |
| a) Change topography or ground surface relief features? |  |  | X |  |
| b) Create cut or fill slopes greater than 2:1 or higher than 10 feet? |  |  |  | X |
| c) Result in grading that affects or negates subsurface sewage disposal systems? |  |  |  | X |


| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | $\begin{gathered} \text { No } \\ \text { Impact } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| 18. SOILS |  |  |  |  |
| b) Result in substantial soil erosion or the loss of topsoil? |  |  | X |  |
| b) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? |  |  | X |  |
| c) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? |  |  |  | X |
| 19. EROSION |  |  |  |  |
| a) Change deposition, siltation, or erosion that may modify the channel of a river or stream or the bed of a lake? |  |  | X |  |
| b) Result in any increase in water erosion either on or off site? |  |  | X |  |
| 20. WIND EROSION AND BLOWSAND FROM PROJECT EITHER ON OR OFF SITE |  |  |  |  |
| a) Be impacted by or result in an increase in wind erosion and blows and, either on or off site? |  |  | X |  |
| 21. PALEONTOLOGICAL RESOURCES |  |  |  |  |
| a) Directly or indirectly destroy a unique paleontological resource, or site, or unique geologic feature? |  | X |  |  |
| VII. GREENHOUSE GAS EMISSIONS. Would the project: |  |  |  |  |
| 22. GREENHOUSE GAS EMISSIONS |  |  |  |  |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? |  |  | X |  |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? |  |  | X |  |
| VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project: |  |  |  |  |
| 23. HAZARDS AND HAZARDOUS MATERIALS |  |  |  |  |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? |  |  | X |  |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? |  |  | X |  |
| c) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? |  |  |  | X |
| d) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? |  |  |  | X |
| e) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code $\S 65962.5$ and, as a result, would it create a significant hazard to the public or the environment? |  |  | X |  |

## 2. Environmental Checklist

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
| :---: | :---: | :---: | :---: | :---: |
| 24. AIRPORTS |  |  |  |  |
| a) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? |  |  |  | X |
| b) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? |  |  |  | X |
| 25. HAZARDOUS FIRE AREA |  |  |  |  |
| A) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? |  |  | X |  |
| IX. HYDROLOGY AND WATER QUALITY. Would the project: |  |  |  |  |
| 26. WATER QUALITY IMPACTS |  |  |  |  |
| a) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site. |  |  | X |  |
| b) Violate any water quality standards or waste discharge requirements? |  |  | X |  |
| c) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? |  |  | X |  |
| d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? |  |  | X |  |
| e) Place housing within a 100 -year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? |  |  |  | X |
| f) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? |  |  |  | X |
| g) Otherwise substantially degrade water quality? |  |  | X |  |
| h) Include new or retrofitted stormwater Treatment Control Best Management Practices (BMPs) (e.g. water quality treatment basins, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g. increased vectors or odors)? |  |  | X |  |
| 27. FLOODPLAINS |  |  |  |  |
| a) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site |  |  | X |  |

2. Environmental Checklist

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | $\begin{gathered} \text { No } \\ \text { Impact } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| b) Changes in absorption rates or the rate and amount of surface runoff? |  |  | X |  |
| c) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? |  |  |  | X |
| d) Changes in the amount of surface water in any water body? |  |  |  | X |
| X. LAND USE AND PLANNING. Would the project: |  |  |  |  |
| 28. LAND USE |  |  |  |  |
| a) Result in a substantial alteration of the present or planned land use of an area? |  |  | X |  |
| b) Affect land use within a city sphere of influence and/or within adjacent city or county boundaries? |  |  | X |  |
| 29. PLANNING |  |  |  |  |
| a) Be consistent with the site's existing or proposed zoning? |  |  |  | X |
| b) Be compatible with existing surrounding zoning? |  |  |  | X |
| c) Be compatible with existing and planned surrounding land uses? |  |  |  | X |
| d) Be consistent with the land use designations and policies of the General Plan (including those of any applicable Specific Plan)? |  |  |  | X |
| e) Disrupt or divide the physical arrangement of an established community (including a low-income or minority community)? |  |  |  | X |
| XI. MINERAL RESOURCES. Would the project: |  |  |  |  |
| 30. MINERAL RESOURCES |  |  |  |  |
| a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state? |  |  | X |  |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? |  |  |  | X |
| c) Be an incompatible land use located adjacent to a State classified or designated area or existing surface mine? |  |  |  | X |
| d) Expose people or property to hazards from proposed, existing or abandoned quarries or mines? |  |  |  | X |
| XII. NOISE. Would the project result in: |  |  |  |  |
| 31. AIRPORT NOISE |  |  |  |  |
| a) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? |  |  |  | X |
| b) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? |  |  |  | X |

## 2. Environmental Checklist

| Issues | Potentially <br> Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | $\begin{gathered} \text { No } \\ \text { Impact } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| 32. RAILROAD NOISE |  |  |  |  |
| a) For a project within 0.25 mile of a railroad track, would the project expose people residing or working in the project area to excessive noise levels? |  |  |  | X |
| 33. HIGHWAY NOISE |  |  |  |  |
| a) Would project-generated traffic cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? |  |  |  | X |
| 34. OTHER NOISE |  |  |  |  |
| a) Would the project include stationary sources of noise generating a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? |  |  |  | X |
| 35. NOISE EFFECTS ON OR BY THE PROJECT |  |  |  |  |
| a) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? |  |  | X |  |
| b) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? |  |  | X |  |
| c) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? |  |  | X |  |
| d) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? |  |  | X |  |
| XIII. POPULATION AND HOUSING. Would the project: |  |  |  |  |
| 36. HOUSING |  |  |  |  |
| a) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? |  |  | X |  |
| b) Create a demand for additional housing, particularly housing affordable to households earning $80 \%$ or less of the County's median income? |  |  | X |  |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? |  |  | X |  |
| d) Affect a County Redevelopment Project Area? |  |  |  | X |
| e) Cumulatively exceed official regional or local population projections? |  |  | X |  |
| f) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? |  |  | X |  |


| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | $\begin{gathered} \text { No } \\ \text { Impact } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| XIV. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: |  |  |  |  |
| 37. FIRE SERVICES |  |  | X |  |
| 38. SHERIFF SERVICES |  |  | X |  |
| 39. SCHOOLS |  |  |  | X |
| 40. LIBRARIES |  |  |  | X |
| 41. HEALTH SERVICES |  |  |  | X |
| XV. RECREATION. |  |  |  |  |
| 42. PARKS AND RECREATION |  |  |  |  |
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? |  |  |  | X |
| b) Would the project include the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated? |  |  |  | X |
| c) Is the project located within a Community Service Area (CSA) or recreation and park district with a Community Parks and Recreation Plan (Quimby fees)? |  |  |  | X |
| 43. RECREATIONAL TRAILS |  |  |  |  |
| a) Would the project adversely affect a recreational trail or bikeway included in the Riverside County Southwest Area Plan Trails and Bikeway System? |  |  |  | X |
| XVI. TRANSPORTATION/TRAFFIC. Would the project: |  |  |  |  |
| 44. CIRCULATION |  |  |  |  |
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? |  |  | X |  |
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? |  |  | X |  |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? |  |  |  | X |
| d) Alter waterborne, rail, or air traffic? |  |  |  | X |

## 2. Environmental Checklist

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | $\begin{gathered} \text { No } \\ \text { Impact } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? |  |  | X |  |
| f) Cause an effect upon, or a need for new or altered maintenance of roads? |  |  | X |  |
| g) Cause an effect upon circulation during the project's construction? |  |  | X |  |
| h) Result in inadequate emergency access? |  |  | X |  |
| i) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? |  |  |  | X |
| 45. BIKE TRAILS |  |  |  |  |
| a) Would the project adversely affect a bikeway included in the Riverside County Southwest Area Plan Trails and Bikeway System? |  |  |  | X |
| XVII. UTILITIES AND SERVICE SYSTEMS. Would the project: |  |  |  |  |
| 46. WATER |  |  |  |  |
| a) Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? |  |  | X |  |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed? |  |  | X |  |
| 47. SEWER |  |  |  |  |
| a) Require or result in the construction of new waste water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? |  |  | X |  |
| e) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? |  |  | X |  |
| 48. SOLID WASTE |  |  |  |  |
| a) Is the project served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? |  |  | X |  |
| b) Does the project comply with federal, state, and local statutes and regulations related to solid wastes including the CIWMP (County Integrated Waste Management Plan)? |  |  |  | X |
| 49. UTILITIES |  |  |  |  |
| a. Electricity |  |  | X |  |
| b. Natural Gas |  |  | X |  |
| c. Communication Systems |  |  | X |  |
| d. Strom Water Drainage |  |  | X |  |
| e. Street Lighting |  |  | X |  |
| f) Maintenance of public facilities, including roads? |  |  | X |  |

## 2. Environmental Checklist

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | $\begin{gathered} \text { No } \\ \text { Impact } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| g) Other Governmental Services? |  |  | X |  |
| XVIII. MANDATORY FINDINGS OF SIGNIFICANCE. |  |  |  |  |
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? |  |  | X |  |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) |  |  | X |  |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? |  |  | X |  |

## 2. Environmental Checklist

This page intentionally left blank.

## 3. Environmental Analysis

Section 2.4 provided a checklist of environmental impacts. This section provides an evaluation of the impact categories and questions contained in the checklist and identifies mitigation measures, if applicable.

### 3.1 AESTHETICS

Would the project:

## 1. SCENIC RESOURCES

a) Have a substantial effect upon a scenic highway corridor within which it is located?

No Impact. The project site is not in a scenic highway corridor. The nearest designated state scenic highway to the project site is part of SR-74 about 15 miles to the northeast (Caltrans 2011). No designated County scenic highways are identified in the Riverside County General Plan Circulation Element; the nearest eligible County scenic highway to the project site is I-215 about 4.1 miles to the west (Riverside County 2015). Project development would not substantially damage scenic resources in a scenic highway. No impact would occur and no mitigation is needed.
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and unique or landmark features; obstruct any prominent scenic vista or view open to the public; or result in the creation of an aesthetically offensive site open to public view?

## Less Than Significant Impact.

## Scenic Resources and Visual Cbaracter

No scenic resources are present onsite. There are several small ornamental landscape trees onsite; however, such trees are common in residential areas and are not considered scenic resources. There are no historic buildings onsite, because the residential structures onsite are not shown on a 1978 historic photograph and therefore are not old enough to be eligible as historic resources (NETR.com 2016). There are no rock outcroppings onsite. The proposed school would change the visual character of the site from the existing vacant land and single-family residence to a school consisting of one-story buildings. Much of the site is currently bare land. Thus, development of the proposed school would not substantially degrade the existing visual character of the site and its surroundings and no impact would occur. No mitigation is needed.

## Vistas

Vistas of the San Jacinto Mountains to the east, Palomar Mountain to the south, and San Bernardino Mountains to the north are visible from parts of the project site. The project proposes construction of onestory buildings, including a multi-purpose building that would be about 27 feet high; the remaining buildings

## 3. Environmental Analysis

would be about 18 feet high. One offsite residence abuts the project site boundary north of the vacant residence. Project development would not block scenic vistas from that offsite residence because it is at the base of the small onsite hill. The next nearest residences to the project site are about 200 feet to the north and 350 feet to the west. Project development would not block vistas from the residence west of the site because such vistas are already blocked by the small onsite hill. Development would also not block vistas from the house about 200 feet north of the project site, because that house is nearly 15 feet higher than the proposed site of the buildings. Impacts would be less than significant and no mitigation is required.

## 2. MT. PALOMAR OBSERVATORY

a) Interfere with the nighttime use of the Mt. Palomar Observatory, as protected through Riverside County Ordinance No. 655?

Less Than Significant Impact. The project site is in the area where outdoor lighting is regulated under Riverside County Ordinance 655 to minimize interference with astronomical observations at the Mt. Palomar Observatory, which is about 23 miles southeast of the project site. Ordinance 655 sets forth limitations on the types and intensities of light fixtures allowed and requires that many types of outdoor lighting be extinguished between 11:00 PM and sunrise.

Specifically, Ordinance No. 655 identifies Zone "A" as comprising lands within a 15-mile distance of the observatory, while Zone " B " comprises lands located greater than 15 miles, but less than 45 miles from the observatory. The project site is located approximately 22.20 miles northwest of the Mt. Palomar Observatory. Ordinance No. 655 was adopted by the County Board of Supervisors on June 7, 1988, and went into effect on July 7, 1988. The intent of Ordinance No. 655 is to restrict the permitted use of certain light fixtures emitting into the night sky undesirable light rays, which have a detrimental effect on astronomical observation and research. Ordinance No. 655 contains approved materials and methods of installation, definitions, general requirements, requirements for lamp source and shielding, prohibitions and exceptions.

Parking lot lights, walkway lights, and exterior building lights would be aimed and shielded to cast their light downward on parking lots, walkways, and walls; thus, such lights would not cause substantial glare. No normally scheduled school operations would ever occur between 11:00 PM and sunrise, and all lights except for essential security lights would be extinguished during those hours. Safety and security lighting is permitted during that nighttime period. These are typically standard conditions of approval and are not considered unique mitigation pursuant to CEQA. With conformance with Ordinance No. 655, any impacts are expected to be less than significant from implementation of the project. No mitigation would be required.

## 3. OTHER LIGHTING ISSUES

a) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. The proposed project would add exterior and interior building lights, parking lot lights, and walkway lights. No field lighting is proposed. Parking lot lights, walkway lights, and exterior building lights would be aimed and shielded to cast their light downward on parking lots, walkways,
and walls; thus, such lights would not cause substantial glare. Building exteriors would be constructed of lowglare materials and would not generate substantial amounts of daytime glare. Impacts would be less than significant and no mitigation is required.

### 3.2 AGRICULTURE AND FORESTRY RESOURCES

Would the project:

## 4. AGRICULTURE

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The eastern parcel of the project site is mapped as Farmland of Local Importance on the California Important Farmland Finder maintained by the Division of Land Resource Protection (DLRP 2016a). Analysis of impacts to mapped important farmland under CEQA is limited to three categories of mapped farmland: Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. No farmland in any of those categories is mapped onsite. No impact would occur and no mitigation is needed.
b) Conflict with existing zoning for agricultural use, or with land subject to a Williamson Act contract or land within a Riverside County Agricultural Preserve?

No Impact. The project site is zoned for rural residential (R-R) use and not for agricultural use. Although the R-R zone permits limited agriculture, including farm animals (up to five animals per acre), analysis of impacts to agriculture under CEQA is focused on intensive commercial agriculture. The site is not zoned for such use. Williamson Act contracts restrict the use of privately owned land to agriculture and compatible open-space uses under contract with local governments; in exchange, the land is taxed based on actual use rather than potential market value. There are no Williamson Act contracts in effect for the project site (DLRP 2016b). No impact would occur and no mitigation is required.
c) Cause development of non-agricultural uses within 300 feet of agriculturally zoned property (Ordinance No. 625 "Right-to-Farm")?

No Impact. No zoning for agricultural use is present within 300 feet of the project site. The project site and parcels within such distance are zoned Rural Residential or Specific Plan (RCIT 2017). No impact would occur and no mitigation is needed.
d) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to nonforest use?

Less Than Significant Impact. There are several greenhouses about 800 feet east of the project site on land mapped as Unique Farmland (DLRP 2016a). Project development would not interfere with agricultural operations on this farmland, and impacts would be less than significant and no mitigation is required.

## 3. Environmental Analysis

## 5. FOREST

a) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. The project site is zoned for rural residential use; it is not zoned for forest land, timberland, or timberland production. No impact would occur and no mitigation is needed.

## b) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. There are a few scattered ornamental landscape trees onsite. The trees are not a forest and are not cultivated for forest resources. Project development would not cause a loss of forest land, and no impact would occur and no mitigation is required.
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use?

No Impact. Project development would not cause an indirect impact on forest land, as substantiated above in Sections 4.a and 4.b. No mitigation is needed.

### 3.3 AIR QUALITY

The air quality section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthful pollutant concentrations. A background discussion on the air quality regulatory setting, meteorological conditions, existing ambient air quality in the vicinity of the project site, and air quality modeling can be found in Appendix B. The health risk assessment conducted for the proposed project can be found in Appendix A.

The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone $\left(\mathrm{O}_{3}\right)$, carbon monoxide $(\mathrm{CO})$, coarse inhalable particulate matter $\left(\mathrm{PM}_{10}\right)$, fine inhalable particulate matter $\left(\mathrm{PM}_{2.5}\right)$, sulfur dioxide $\left(\mathrm{SO}_{2}\right)$, nitrogen dioxide $\left(\mathrm{NO}_{2}\right)$, and lead $(\mathrm{Pb})$. Areas are classified under the federal and California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (SCAQMD), is designated nonattainment for $\mathrm{O}_{3}$, and $\mathrm{PM}_{2.5}$ under the California and National AAQS, nonattainment for $\mathrm{PM}_{10}$ under the California $A A Q S$, and nonattainment for lead (Los Angeles County only) under the National AAQS (CARB 2015).

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

## 6. Air Quality Impacts

## a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the air quality management plan (AQMP). It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals in the AQMP. The most recently adopted comprehensive plan is the 2012 AQMP, adopted on December 7, 2012 (see Appendix B to this Initial Study for a description of the 2012 AQMP).

Regional growth projections are used by SCAQMD to forecast future emission levels in the SoCAB. For southern California, these regional growth projections are provided by the Southern California Association of Governments (SCAG) and are partially based on land use designations in city/county general plans. Typically, only large, regionally significant projects have the potential to affect the regional growth projections.

The proposed project involves construction of a charter school facility in the County of Riverside to serve the educational needs of the local community. The proposed project is not a project of statewide, regional, or areawide significant that would require intergovernmental review under Section 15206 of the CEQA Guidelines. Therefore, the project would not have the potential to substantially affect SCAG's demographic projections. Additionally, the regional emissions generated by construction and operation of the proposed project would be less than the SCAQMD emissions thresholds, and SCAQMD would not consider the project a substantial source of air pollutant emissions that would have the potential to affect the attainment designations in the SoCAB. Thus, the project would not affect the regional emissions inventory or conflict with strategies in the AQMP. Impacts are less than significant and no mitigation measures are required.
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. The following describes project-related impacts from short-term construction activities and long-term operation of the proposed project.

## Short-Term Air Quality Impacts

Construction activities would result in the generation of air pollutants. These emissions would primarily be 1) exhaust emissions from off-road diesel-powered construction equipment; 2) dust generated by demolition, grading, earthmoving, and other construction activities; 3) exhaust emissions from on-road vehicles and 4) off-gas emissions of volatile organic compounds (VOCs) from application of asphalt, paints, and coatings.

Construction activities would occur on the approximately 8.5 acres of the 14.6 -acre project site. Construction would involve site preparation, grading, construction of the new school facility, paving, and architectural coating. Construction activities would start in the summer of 2017 and would take approximately 12 months. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2, based on the project's preliminary construction schedule, phasing, and equipment list

## 3. Environmental Analysis

provided by the Temecula Valley Charter School (TVCS). TVCS indicates that the interior and exterior coatings applied onsite would be zero-VOC. The construction schedule and equipment mix are based on preliminary engineering and subject to changes during final design and as dictated by field conditions. Results of the construction emission modeling are shown in Table 1. As shown in the table, air pollutant emissions from construction-related activities would be less than their respective SCAQMD regional significance threshold values. Therefore, air quality impacts from project-related construction activities would be less than significant. No mitigation measures are required.

Table 1 Maximum Daily Regional Construction Emissions

| Source | Criteria Air Pollutants (lbs/day ${ }^{1,2,3}$ |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  | VOC | $\mathrm{NO}_{\mathrm{x}}$ | CO | $\mathrm{SO}_{2}$ | $\mathrm{PM}_{10}$ | $\mathrm{PM}_{2.5}$ |
| 2017 Site Preparation | 5 | 52 | 41 | $<1$ | 11 | 7 |
| 2017 Rough Grading | 6 | 70 | 48 | $<1$ | 7 | 5 |
| 2017 Utility Trenching | $<1$ | 4 | 3 | $<1$ | $<1$ | $<1$ |
| 2017 Building Construction | 3 | 28 | 22 | $<1$ | 2 | 2 |
| 2018 Building Construction | 3 | 25 | 21 | $<1$ | 2 | 2 |
| 2018 Building Construction + Architectural Coating | 3 | 27 | 23 | $<1$ | 2 | 2 |
| 2018 Building Construction + Architectural Coating <br> + Asphalt Paving + Finishing/Landscaping | 6 | 46 | 40 | $<1$ | 4 | 3 |
| Maximum Daily Emissions | 6 | 70 | 48 | $<1$ | 11 | 7 |
| SCAQMD Regional Threshold | 75 | 100 | 550 | 150 | 150 | 55 |
| Exceeds Regional Threshold? | No | No | No | No | No | No |

Source: CalEEMod, version 2013.2.2
Notes: Totals may not equal 100 percent due to rounding.
1 The construction schedule is based on the preliminary information provided by the Applicant. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
2 Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186-compliant sweepers.

## Long-Term Operation-Related Air Quality Impact

Long-term air pollutant emissions generated by the project would be generated by area sources (e.g., landscape fuel use, aerosols, and architectural coatings), mobile sources from vehicle trips, and energy use (natural gas) associated with the proposed new buildings. The primary source of long-term criteria air pollutant emissions generated by the proposed project would be mobile sources. The proposed project would generate 1,488 average daily trips during a weekday. Criteria air pollutant emissions for the proposed project were modeled using CalEEMod.

Table 2 identifies criteria air pollutant emissions from the proposed project. As shown in the table, projectrelated air pollutant emissions would not exceed the SCAQMD's regional emissions thresholds for operational activities. Overall, long-term operation-related impacts to air quality would be less than significant and no mitigation measures are required.

Table 2 Maximum Daily Regional Operational Phase Emissions

| Source |  | Criteria Air Pollutants (lbs/day) |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\mathbf{N O} \mathbf{O}_{\mathbf{x}}$ | $\mathbf{C O}$ | $\mathbf{S O}_{2}$ | $\mathbf{P M}_{10}$ | $\mathbf{P M}_{2.5}$ |  |
| Area | 2 | $<1$ | $<1$ | $<1$ | $<1$ | $<1$ |  |
| Energy | $<1$ | $<1$ | $<1$ | $<1$ | $<1$ | $<1$ |  |
| Mobile Sources | 4 | 5 | 47 | $<1$ | 11 | 3 |  |
| Total Emissions | 6 | 5 | 47 | $<1$ | 11 | 3 |  |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |  |
| Exceeds Regional Threshold? | No | No | No | No | No | No |  |

Source: CalEEMod Version 2013.2.2. Highest winter or summer emissions are reported. Totals may not equal 100 percent due to rounding.
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. The SoCAB is designated nonattainment for $\mathrm{O}_{3}$ and $\mathrm{PM}_{2.5}$ under the California and National AAQS, nonattainment for $\mathrm{PM}_{10}$ under the California $A A Q S$, and nonattainment for lead under the National AAQS (CARB 2015). According to SCAQMD methodology, any project that does not exceed or can be mitigated to less than the daily threshold values would not add significantly to a cumulative impact (SCAQMD 1993). Construction and operational activities would not result in emissions in excess of SCAQMD's significant thresholds. Therefore, the project would not result in a cumulatively considerable net increase in criteria pollutants and impacts would be less than significant. No mitigation measures are required.
d) Expose sensitive receptors which are located within 1 mile of the project site to project substantial point source emissions?

Less Than Significant Impact. The proposed project could expose sensitive receptors to elevated pollutant concentrations if it would cause or contribute significantly to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects.

## Construction LSTs

Localized significance thresholds (LSTs) are based on the California AAQS, which are the most stringent, established to provide a margin of safety in the protection of public health and welfare. They are designated to protect sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Construction LSTs are based on the size of the project site, distance to the nearest sensitive receptor, and Source Receptor Area. Receptors proximate to the proposed project site are the residences to the west and northwest.

## 3. Environmental Analysis

Air pollutant emissions generated by construction activities are anticipated to cause temporary increases in air pollutant concentrations. Table 3 shows the maximum daily construction emissions (pounds per day) generated during onsite construction activities compared with the SCAQMD's LSTs. As shown in the table, the maximum daily $\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}, \mathrm{PM}_{10}$, and $\mathrm{PM}_{2.5}$ construction emissions generated from onsite constructionrelated activities would be less than their respective SCAQMD LSTs. Therefore, project-related construction activities would not have the potential to expose sensitive receptors to substantial pollutant. The impact would be less than significant and no mitigation measures are required.

Table 3 Localized Construction Emissions

| Source | Pollutants(lbs/day) ${ }^{1,2}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\mathrm{NO}_{\mathrm{x}}$ | CO | $\mathrm{PM}_{10}$ | PM 2.5 |
| 2017 Utility Trenching | 4 | 3 | 0.27 | 0.25 |
| SCAQMD $\leq 1.00$-acre LST | 196 | 1,044 | 10.63 | 3.83 |
| Exceeds LST? | No | No | No | No |
| 2017 Building Construction | 26 | 18 | 1.78 | 1.67 |
| 2018 Building Construction | 23 | 18 | 1.49 | 1.40 |
| 2018 Building Construction + Architectural Coating | 25 | 19 | 1.64 | 1.56 |
| SCAQMD 1.31-acre LST | 218 | 1,184 | 12.86 | 4.40 |
| Exceeds LST? | No | No | No | No |
| 2018 Building Construction + Architectural Coating + Asphalt Paving + Finishing/Landscaping | 44 | 36 | 2.67 | 2.50 |
| SCAQMD 1.81-acre LST | 254 | 1,407 | 16.43 | 5.31 |
| Exceeds LST? | No | No | No | No |
| 2017 Site Preparation | 52 | 39 | 10.48 | 6.78 |
| SCAQMD 3.50-acre LST | 338 | 2,038 | 26.58 | 7.66 |
| Exceeds LST? | No | No | No | No |
| 2017 Rough Grading | 70 | 47 | 7.08 | 4.60 |
| SCAQMD 4.00-acre LST | 362 | 2,221 | 29.51 | 8.32 |
| Exceeds LST? | No | No | No | No |

Source: CalEEMod Version 2013.2.2; SCAQMD 2008, 2011.
Notes: In accordance with SCAQMD methodology, only onsite stationary sources and mobile equipment occurring on the proposed project site are included in the analysis. LSTs are based on receptors within 150 feet (46 meters) of the proposed project site in Source Receptor Area (SRA) 26.
1 The construction schedule is based on the preliminary information provided by the Applicant. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
${ }^{2}$ Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186-compliant sweepers.

## Construction Health Risk

SCAQMD currently does not require health risk assessments to be conducted for short-term emissions from construction equipment. Emissions from construction equipment primarily consist of diesel particulate matter (DPM). The Office of Environmental Health Hazards Assessment (OEHHA) has recently adopted new guidance for the preparation of health risk assessments issued in March 2015. OEHHA has developed a cancer risk factor and noncancer chronic reference exposure level for DPM, but these factors are based on

## 3. Environmental Analysis

continuous exposure over a 30 -year time frame. No short-term acute exposure levels have been developed for DPM. The proposed project would be developed in approximately 12 months, which would limit the exposure to onsite and offsite receptors. SCAQMD currently does not require the evaluation of long-term excess cancer risk or chronic health impacts for a short-term project. In addition, construction activities would not exceed LST significance thresholds. For the reasons stated above, it is anticipated that construction emissions would not pose a threat to onsite and offsite receptors at or near the school, and project-related construction health impacts would be less than significant and no mitigation measures are required.

## Operation LSTs

Operation of the proposed project would not generate substantial quantities of emission from onsite, stationary sources. Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from SCAQMD include industrial land uses, such as chemical processing and warehousing operations where substantial truck idling could occur onsite. The proposed project does not fall within these categories of uses. While operation of the proposed project would result in the use of standard onsite mechanical equipment such as heating, ventilation, and air conditioning units in addition to occasional use of landscaping equipment for site maintenance, air pollutant emissions generated from these activities would be nominal (see Table 2). Therefore, localized air quality impacts related to stationary-source emissions would be less than significant and no mitigation measures are required.

## Carbon Monoxide Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 parts per million ( ppm ) or the eight-hour standard of 9.0 ppm . Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds.

The SoCAB has been designated attainment under both the national and California AAQS for CO. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour-or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited-in order to generate a significant CO impact (BAAQMD 2011). The proposed project would result in approximately 1,488 average daily trips during a weekday and 540 trips during the morning peak hour, which are substantially less than the volumes cited above. Furthermore, the SoCAB has since been designated as attainment under both the national and California AAQS for CO. The project would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the project site. Localized air quality impacts related to mobile-source emissions would be less than significant and no mitigation measures are required.

## 3. Environmental Analysis

## Health Risk Assessment

Section 21151.8 of the Public Resources Code requires evaluation of air quality hazards for school site acquisition or construction of a new elementary school. The project would expose sensitive receptors to elevated pollutant concentrations if it would place the project in an area with pollutant concentrations above ambient concentration in the SoCAB. Recent air pollution studies have shown an association between proximity to major air pollution sources and a variety of health effects. The project involves siting a school within a quarter-mile of SR-79; therefore, the health risks from mobile sources were evaluated for the proposed project (see Appendix A). The HRA evaluates carcinogenic and non-carcinogenic health risks and risks from toxic air contaminants. Table 4 shows the potential cancer and non-cancer risk for the students and staff at the proposed project site.

Table 4 Health Risk Assessment Results

| Source | Cancer Risk (per million) |  | Chronic Hazard <br> Index | Acute (1-Hour) <br> Hazard Index | 8-Hour Hazard <br> Index |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | Staff Exposure | Student Exposure |  |  |  |
| State Route 79 | 0.48 | 1.13 | 0.003 | 0.012 | 0.002 |
| SCAQMD Threshold | 10 | 10 | 1.0 | 1.0 | 1.0 |
| Exceeds Threshold | No | No | No | No | No |

Source: Lakes AERMOD View, 9.1.0, 2015.

As shown in the table, based on a comparison to the carcinogenic and non-carcinogenic thresholds established by OEHHA and SCAQMD, hazardous air emissions generated from the mobile sources within a quarter-mile radius of the site are not anticipated to pose an actual or potential endangerment to students and staff occupying the proposed site, and no mitigation measures are required.
e) Involve the construction of a sensitive receptor located within one mile of an existing substantial point source emitter?

Less than Significant Impact. See the discussion of the Health Risk Assessment in Section 6.d.

## f) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. The proposed project would not result in objectionable odors. The threshold for odor is if a project creates an odor nuisance pursuant to SCAQMD Rule 402, Nuisance, which states:

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall

## 3. Environmental Analysis

not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The uses proposed by the project do not fall within the aforementioned land uses. Emissions from construction equipment, such as diesel exhaust and volatile organic compounds from architectural coatings and paving activities, may generate odors. However, these odors would be low in concentration, temporary, and are not expected to affect a substantial number of people. Therefore, odor impacts would be less than significant and no mitigation measures are required.

### 3.4 BIOLOGICAL RESOURCES

The information in this section is based in part on the following technical studies, which are included as Appendices C1 and C2 to this Initial Study:

- Habitat Assessment, Phil Brylski and Dave Bramlet, May 24, 2017. (Appendix C1)
- Fairy Shrimp Survey, Summitwest Environmental, Inc., May 29, 2017. (Appendix C2)

Would the project:

## 7. Wildlife and Vegetation

a) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant Impact. The project site is in the plan area of two habitat conservation plans.

## Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County Multiple Species Habitat Conservation Plan (WRC MSHCP) has a plan area of about 1.26 million acres, or 1,970 square miles, extending from the western county boundary to the San Jacinto Mountains. Roughly 506,000 acres are designated reserves, and the plan covers 146 species and 14 natural communities. The WRC MSHCP was approved by the US Fish and Wildlife Service and California Department of Fish and Wildlife (CDFW) in 2004 and is administered by the Western Riverside County Regional Conservation Authority (RCA).

The project site is in criteria cell 5275 (Southwest Area, French Valley-Lower Sedco Hills subunit) of the WRC MSHCP (County of Riverside 2016b). The required studies for the project site included a WRC MSHCP consistency analysis and habitat assessments for burrowing owl, Narrow Endemic Plant Species, Criteria Area Plant Species, and Riparian/Riverine/Vernal Pool Resources. The main project site (APNs 476-010-013 and 476-010-059) is not located within the Narrow Endemic Species Survey Area (NEPSSA) or

## 3. Environmental Analysis

Criteria Area Species Survey Area (CASSA); however, a portion of the proposed Flossie Way access road is located within the NEPSSA and CASSA.

## Stephens' Kangaroo Rat Habitat Conservation Plan

The Stephens' Kangaroo Rat Habitat Conservation Plan (SKRHCP) has a plan area of about 534,000 acres in western Riverside County and was established to protect one listed species, the Stephens' Kangaroo Rat (Dipodomys stephensi), listed as federally endangered and state threatened. The SKRHCP includes seven core reserves that totaled about 41,200 acres in 1996. The SKRHCP was approved by the US Fish and Wildlife Service and CDFW in 1990 and is administered by the Riverside County Habitat Conservation Agency. The project site is located within the SKR Fee Area and will be required to pay the required development fee (Riverside County Ordinance 663.10)

## Western Riverside County MSHCP Criteria Cell Issues

The project site and Flossie Way access road are in Criteria Cell \#5275 within the French Valley - Lower Sedco Hills subunit of the Southwest Area Plan of the western Riverside MSHCP (County of Riverside 2016b). Biological issues and considerations for this subunit are as follows: (1) conserve a large block of habitat generally east of I-215 and south of Scott Road for narrow endemic species; (2) provide connection to the Southwestern Riverside County Multi Species Reserve, (3) conserve clay soils supporting long-spined spine flower, Munz's onion and Palmer's grapplinghook, (4) maintain core and linkage habitat for bobcat, (5) determine presence of potential Core Area for Los Angeles pocket mouse along Warm Springs Creek, (6) maintain core and linkage habitat for Quino checkerspot butterfly, (7) maintain core area for western pond turtle, and (8) maintain core area for Riverside fairy shrimp.

Other goals for this subunit include conserving clay soil areas for narrow endemic plant species that are restricted to these soil types, including the Munz's onion, and habitat for the Quino checkerspot butterfly.

Table 5 lists the checklist information on the project site from the County Conservation Summary Report Generator. The project site is not within with survey requirements for any amphibians, or mammals, but is located within a habitat assessment area for the burrowing owl. The project site is not within an existing or proposed core area.

Table 5 MSHCP Review Summary

| Is the project located in Criteria Area or Public/Quasi-Public Land? | Yes |
| :--- | :---: |
| Is the project located in Criteria Area Species Survey Area (CASSA)? | Yes* |
| Is the project located in Amphibian Species Survey Area? | No |
| Is the project located in Mammal Species Survey Area? | No |
| Is the project located adjacent to MSHCP Conservation Areas? | No |
| Is the project located in Narrow Endemic Plant Species Survey Area (NEPSSA)? | Yes* |
| Are riverine/riparian/wetland habitats or vernal pools present? | No |
| Is the project located in Burrowing Owl Survey Area? | Yes |
| * The main project site (APNs 476-010-059 and 476-010-013) is not within a Criteria Area Species Survey Area (CASSA) or Narrow Endemic Plant Species Survey |  |
| Area (NEPSSA). The Flossie Way access road area (part of APN 476-010-054) is within a CASSA and NEPSSA. |  |

## 3. Environmental Analysis

## Criteria Cell Coverage

The project site is located in the north-central part of Cell \#5275 in an area that is not proposed for conservation. Clay soils are absent from the two parcels where the school would be built, however a small area of clay soils mapped by NRCS (2016) occurs in part of the 1.78 -acre easement for the Flossie Way access road. The MSHCP (County of Riverside 2003b) identifies the conservation objectives of Cell \#5275 as follows:

Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 18. Conservation within this Cell will focus on riparian scrub, woodland and forest habitat and adjacent agricultural land. Areas conserved within this Cell will be connected to riparian scrub, woodland and forest habitat and agricultural land proposed for conservation in Cell \#5376 to the south and to agricultural land proposed for conservation in Cell \#5372 to the east. Conservation within this Cell will range from $10 \%$ to $20 \%$ of the Cell focusing in the southern part of the Cell.

A regionally significant wildlife corridor identified in the MSHCP is Constrained Linkage 18, which is located south of the project site (Figure 5, Project Site in relation to MSHCP Criteria Cells and Constrained Linkage 18). Constrained linkage 18 is a narrow strip of riparian habitat along an unnamed drainage that links Paloma Valley (southwest of the project site) and Bachelor Mountain (east of the project site across SR-79). The linkage is constrained by adjoining agricultural uses, which, along with the narrow width of the riparian area, contribute to a large edge effect. The planning species for this linkage area are bobcat and Los Angeles pocket mouse.

The MSHCP describes the linkage as follows:
Proposed Constrained Linkage 18 consists of an unnamed drainage located in the southcentral region of the Plan Area. This Constrained Linkage connects Proposed Core 2 (Antelope Valley) to the west with Proposed Extension of Existing Core 7 (Lake Skinner/Diamond Valley Lake Extension). Existing agricultural use constrains the Linkage, and planned land uses surrounding the Linkage are limited nearly entirely to community Development. The Linkage also has a relatively high proportion of land affected by edge (approximately 250 acres of the total 310 acres) and will also be subject to Edge Effects also due to the widening or extension of several facilities including Washington Street, Briggs Road, and SR-79. Despite these issues, the Linkage nonetheless provides Live-In and movement Habitat for species. Guidelines Pertaining to Urban/Wildlands Interface for the management of edge factors such as lighting, urban runoff, toxics, and domestic predators are presented in Section 6.1 of this document. This Linkage likely provides for movement of common mammals such as bobcat. An adequate wildlife underpass or overpass may need to be implemented to insure movement of species in this area and to reduce the chance of mortality from vehicle collision.

## 3. Environmental Analysis

## MSHCP Implementation Structure

All proposed discretionary development projects within the WRC MSHCP Criteria Area are subject to review under the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process. The HANS process is used by the County of Riverside to implement portions of the WRC MSHCP by identifying and delineating conservation areas on specific properties. A HANS application was prepared for the proposed project and submitted to the County on January 5, 2017 (HANS 2343). The County determined that no conservation is described for the project site based on the cell criteria analysis. Although no conservation is required, the project is still required to demonstrate compliance with Section 6.0 of the WRC MSHCP, including Sections 6.1.2, 6.1.3, and 6.3.2. Habitat assessments and surveys for Narrow Endemic Plant Species, Criteria Area Species, burrowing owl, and Riparian/Riverine/Vernal Pool resources were required. The HANS case was transmitted to the Western Riverside County Regional Conservation Authority (RCA) for Joint Project Review (JPR) on April 6, 2017 (JPR No. 17-04-11-01). RCA provided comments regarding burrowing owl, narrow endemic plant species, criteria area plant species, and vernal pool species. As a result, the biological consultant provided several revisions based on RCA's comments and a permitted fairy shrimp biologist was hired to evaluate road ruts within the Flossie Way access road. The proposed project is currently going through JPR and was transmitted to the CDFW and USFWS on June 20, 2017 for comment.

## Section 6.1.2. Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

The project site does not contain riparian habitat, open drainages, erosional channels or other features that could contain plant species associated with riparian habitats. A blue-line channel is found on the adjoining parcel to the north of the project site. The Highway 79 Natural Environmental Study (Caltrans 2004) indicated that this blue-line channel extends into the extreme northeastern corner of the project site. However, no channel was observed in this area during the field survey. It appears that the channel has been filled in on the adjacent property and only overland flows currently occur on the project site.

Ephemeral Wetlands and Vernal Pools. Seasonal wetlands, including vernal pools, are communities that could support special status plant or animal species. No seasonal wetlands or evidence of ponding were noted within the main project site (APNs 476-010-059 or 476-010-013) during the field survey or in a review of historical aerial photos available in Google Earth. During March 2, 2017 field surveys, ponding was observed in two road rut features within the proposed Flossie Way access road. According to the project biologists, the ponding likely occurred during a rain event on February 27, 2017. During March 10, 2017 field surveys, the road ruts were dry and no ponding was observed. In order to address RCA's JPR comments, a US Fish and Wildlife Service-permitted fairy shrimp biologist was hired to evaluate the road ruts within the Flossie Way access road right-of-way. The WRC MSHCP Species Survey Requirements (Volume I, Appendix E) allows for a single-season dry or wet season survey to be conducted by a qualified biologist in accordance with accepted protocol. Therefore, only a single season dry survey was conducted. Chuck Black, 10(a)(1)(A) permit number TE835549-7, of Ecological Restoration Service and SummitWest Environmental, Inc. collected and processed dry samples for the determination of presence of fairy shrimp cysts. The project site does not contain suitable soil types to support vernal pool such as soils from the Willow Series (Wg, Wh, Wm, Wn) and there is. No Brancbinecta or Streptochepalus cysts were present in any of the samples from the tire ruts. The negative dry season survey results were deemed sufficient for the County to find the project conditionally
consistent with the WRC MSHCP Section 6.1.2. The RCA, CDFW, and USFWS have the ability to comment on the survey methodology used for the project. The fairy shrimp report, dated May 29, 2017, can be found in Appendix C2.

## Section 6.1.3. Protection of Narrow Endemic Plant Species

The main project site (APNs 476-010-059 and 476-010-013) is not within a Narrow Endemic Plant Species Survey Area (NEPSSA). However, a portion of the proposed Flossie Way access road (APN 476-010-054) is located within a NEPSSA. A habitat assessment was completed for the following NEPSA species: Munz's onion, San Diego ambrosia, many-stemmed dudleya, spreading navarretia, California orcutt grass, and Wright's trichocoronis. The annual grassland habitat within the NEPSSA and proposed Flossie Way access road is highly disturbed and contains an abundance of ruderal, non-native species. Additionally, suitable soils are not present to support these Narrow Endemic Plant Species. According to the habitat assessment, the proposed Flossie Way access road does not contain suitable habitat to support Narrow Endemic Plant Species. The project is consistent with Section 6.1.3.

## Section 6.3.2. Additional Survey Needs and Procedures

The project site and the Flossie Way access road areas are within an area required for habitat assessment for the western burrowing owl (Athene cunicularia).

The main project site (APNs 476-010-059 and 476-010-013) is not within a Criteria Area Species Survey Area (CASSA). The proposed Flossie Way access road is within a CASSA for the following plant species: Davidson's saltscale, Parish's brittlescale, thread-leaved brodiaea, smooth tarplant, round-leaved filaree, Coulter's Goldfields, and little mousetail. The annual grassland habitat within the CASSA and proposed Flossie Way access road is highly disturbed and contains an abundance of ruderal, non-native species. Additionally, suitable soils are not present to support these plant species. According to the habitat assessment, the proposed Flossie Way access road does not contain suitable habitat to support Criteria Area Plant Species.

## Burrowing Owl

## Habitat Assessment

A habitat assessment for burrowing owls was carried out on the project site on November 5, 2016. No western burrowing owls were observed or otherwise detected onsite (i.e., sign or calls) or in adjoining areas during the survey. However, burrows constructed by California ground squirrels were found on the project site that could potentially be used by burrowing owls. Figures 5 and 6 (Biological Features and Burrowing Owl Survey Information) within Appendix C1 show the locations of the ground squirrel burrows.

## Focused Survey

A focused burrowing owl survey was conducted on the project site including the proposed Flossie Way access road over four days, March 7 through 10 2017, under mild weather conditions suitable for the survey. An additional survey was conducted on March 30, 2017 to ensure the absence of burrowing owl. The entire site was walked along transects no more than 30 meters ( 100 feet) apart, and spaced more closely in areas where hilly terrain obscured line of site. A buffer area that extended 500 feet around the site borders was also surveyed, but parts of this were in private property and binocular surveys were used for these buffer areas.

## 3. Environmental Analysis

Potential burrowing owl burrows were mapped using a GPS unit. No burrowing owls or burrowing owl sign was observed on the project site or in the buffer area during the focused surveys.

Burrowing owls could establish nests on the site or in the buffer prior to project initiation. The burrowing owl is a covered species under the WRC MSHCP that requires additional surveys. The County of Riverside has conditioned the project prior to grading permit issuance for a 30 -day pre-construction burrowing owl survey. Potential impacts to the burrowing owl will be mitigated to a less than significant level with adherence to the County of Riverside condition of approval. The project is consistent with Section 6.3.2.

## Section 6.1.4. Urban/Wildlands Interface Guidelines

Section 6.1.4 of the MSHCP presents guidelines that reduce indirect impacts to MSHCP conservation areas at the Wildlands/Urban interface. The project site is not in the vicinity of a conservation area and the Urban/Wildlife Interface Guidelines are therefore not applicable.

## Reserve Assembly

The project site is located in the northwestern part of Cell \#5275 in an area that is not proposed for conservation (see Figure 9. MSHCP Criteria Cells and Constrained Linkage). The project site is not located in a designated core area and is located approximately 1,400 feet north of Constrained Linkage 18.

The objectives of Cell \#5275 and an analysis of the proposed project's impacts on these are as follows:

## 1. Contribute to assembly of Proposed Constrained Linkage 18.

Proposed Constrained Linkage 8 is located approximately 1,400 feet south of the project site. The land between the project site and the linkage is in agricultural use and is crossed by SR-79. The proposed project would not impact the assembly or wildlife movement function of Constrained Linkage 18.

## 2. Focus on coastal sage scrub (CSS), grassland, riparian scrub, woodland and forest habitat.

The project site contains disturbed annual grassland, tilled agricultural fields, small areas of Riversidian sage scrub/grassland ecotone, and developed uses. The proposed project would impact 39 percent of the disturbed annual grassland on the project site, leaving the remaining 61 percent in its existing condition. The Riversidian sage scrub-grassland ecotone found on the project site would not be considered a special status community due to the very low shrub cover found in this grassland.

## 3. Areas conserved within this Cell will be connected to riparian scrub, woodland and forest habitat and agricultural land proposed for conservation in Cell \#5376 to the south and to agricultural land proposed for conservation in Cell \#5279 to the east.

Since adoption of the MSHCP, Cell \#5376 has been largely developed with residential land uses. The project site occurs in the northwestern corner of Cell \#5275, separated from Cell \#5279 by SR-79 and the agricultural lands in the northeastern corner of Cell \#5275. This cell objective is not furthered by the habitats and location of the project site.

Figure 9 - MSHCP Criteria Cells and Constrained Linkage
3. Environmental Analysis


## 3. Environmental Analysis

This page intentionally left blank.

## 3. Environmental Analysis

## 4. Conservation within this Cell will range from $10 \%-20 \%$ of the Cell focusing in the southern portion of the Cell.

The project site is located in the northwestern part of the Cell. This objective is not relevant to the project site. Nonetheless, the proposed project would develop approximately 62 percent of the site, leaving the two residences and surrounding habitats ( 39 percent of the site) undeveloped.
b) Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections $\mathbf{6 7 0 . 2}$ or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?

## Less Than Significant Impact.

## Plant Communities and Land Uses

The plant communities and land use categories found on the project site include: agricultural, disturbed annual grassland, Riversidian sage scrub/grassland ecotone-that is, a transition between the two specified communities-graded, and developed. The following section describes each of these communities found on the project site, and the distribution of these communities is noted in Figure 10, Plant Communities Map, and total acreage of each community is noted in Table 6. A list of plant species observed during the survey of the project site is shown in the Habitat Assessment included as Appendix C1 of this Initial Study.

Table 6 Acreage of Plant Communities on the Project Site

| Plant Community | Acreage |
| :--- | ---: |
| Agricultural | 7.33 acres |
| Disturbed annual grassland | 7.23 acres |
| Riversidian sage scrub/Annual grassland ecotone | 0.10 acres |
| Graded | 0.36 acres |
| Developed | 1.24 acres |
| Total | 16.27 acres |

Source: Brylski and Bramlet 2017.

## Agricultural

The western area of the project site is characterized as agricultural, with areas that have been planted in wheat (Triticum aestivum), and the field had been disked at the time of the survey. The margins of the field contain pockets of a disturbed annual grassland. Characteristic species consisted of: ripgut brome (Bromus diandrus), wild oat (Avena fatua), red brome (Bromus madritensis ssp. rubens), schismus (Schismus barbatus), and foxtail barley (Hordum murinum ssp. leporinum). Forbs commonly found on the margin of this field included: cheeseweed (Malva parviflora), Russian thistle (Salsola tragus), common fiddleneck (Amsinckia intermedia), hare's ear cabbage (Sisymbrium orientale), rattlesnake weed (Euphorbia albomarginata), Persian knotweed (Polygonum argyrocoleon), curly dock (Rumex crispus), and jimson weed (Datura wrightii). ${ }^{1}$

[^1]
## 3. Environmental Analysis

## Disturbed Annual Grassland

A disturbed annual grassland is the characteristic community in the remaining areas of the project site. Characteristic grasses in this community include: ripgut brome, red brome, wild oat, foxtail barley, rattail fescue (Festuca myuros), and schismus. Forbs consisted of: Russian thistle, common fiddleneck, summer mustard (Hirschfeldia incana), tocalote (Centaurea melitensis), London rocket (Sisymbrium irio), rattlesnake weed, red-stemmed filaree (Erodium cicutarium), dove weed (Croton setiger), vinegar weed (Trichostma lanceolatum), and jimson weed. A few shrubs including common sand aster (Corethrogyne filaginifolia), coastal isocoma (Isoooma menziesii), and interior California buckwheat (Eriogonum fasciculatum var. foliolosum) were uncommonly found in these grasslands.

Rockier sites on the project site often had large, open patches dominated by Russian thistle. Other disturbed areas along SR-79 had a grassland with patches of tocalote, telegraph weed (Heterotheca grandiflora), annual sunflower (Heliantbus annuus), Persian knotweed, common horseweed (Conyza canadensis), summer cypress (Kochia scoparia), prickly lettuce (Lactuca serriola), serrate-leaved saltbush (Atriplex suberecta), London rocket, and summer mustard.

## Riversidian Sage Scrub-Grassland Ecotone

A few of the larger patches of interior California buckwheat were mapped as a Riversidian sage scrub/grassland ecotone. These sites have only a very scattered shrub cover and were generally dominated by the annual grasses and forbs. Other shrub species occasionally found in these ecotonal areas consisted of common sand aster, coastal isocoma, and California sagebrush (Artemisia california). Generally, the sites were characterized by a cover of ripgut brome, wild oat, red brome, common fiddleneck, Russian thistle, tocalote, finger-leaved morning glory (Calystegia macrostegia), summer mustard, and dove weed.

## Graded

The access road to the existing residences was mapped as graded, consisting of a hard-packed earthen road and other disturbed unvegetated areas.

## Developed

The area around the existing residences and garage was mapped as developed. This area includes the graded area around these structures, a concrete basketball court, and the existing driveways. This area includes a number of ornamental species planted around or near these structures. Some of these included Aleppo pines (Pinus halepensis), Shamel ash (Fraxinus udehi), olive (Olea europea), silver dollar gum (Eucalyptus polyanthemos), pecan (Carya illinoinensis), queen palms (Syagrus romanzoffiana), and other plantings.

Figure 10 －Plant Communities Map
3．Environmental Analysis


Plant Community $\square$ Disturbed Annual Grassland

 Graded $\square$ Developed

「ニユ Project Boundary
Riversidian Sage Scrub／Annual Grassland


## 3. Environmental Analysis

This page intentionally left blank.

## 3. Environmental Analysis

## Habitat Conservation Plans

Habitat conservation plans and impacts thereto are discussed above in Section 7.a.

## Special Status Plant Species and Habitats

Special status plant species include those listed by the state or federal governments as endangered, threatened, or rare and those that are candidates for future listing. They also encompass species determined by CDFW to meet the CEQA (Section 15380) criteria for "rare and endangered" even though they have not been officially listed by any agency (CDFW 2016a). Finally, the list considers species noted by the California Native Plant Society (CNPS 2016) or the County of Riverside as "rare or endangered" or of limited distribution and requiring consideration in CEQA or planning studies in the region (Riverside County 2003a), or as species of special concern by local botanists in the region (Roberts et al. 2004, 2007).

The special status plant species that could potentially occur on the property were obtained from the RareFind Data Base (CDFW 2016a), list of special status plant species (CDFW 2016b), and the CNPS online rare plant inventory (CNPS 2016). In addition, the collection records of the special status species known from the study region were used to determine the known localities of these species (Consortium 2016).

This study considered the plant species within the Western Riverside HCP planning process (Riverside County 2003a; Dudek 2003), especially the narrow endemic plant species and criteria area plant species in Survey Area 4. The known distributions of these species were carefully reviewed to determine the localities of these species near the project site.

Communities of special interest are considered to be "depleted" habitats of special interest to the CDFW (2010), the County of Riverside (2003a), or potentially regulated by the US Army Corps of Engineers, CDFW, Regional Water Quality Control Board, or other agencies. It would also include the criteria areas of the Western Riverside HCP, which are the potential reserve areas for this habitat conservation plan (Riverside County 2003a).

## Special Status Plant Species

Known or expected localities of each special status plant species identified as occurring in the project region, as well as the habitat preference and the potential for each species to occur onsite, are described in Table 7. The species listed in Table 7 are described in more detail in the Habitat Assessment (see Appendix C1).

## 3. Environmental Analysis

Table 7 Special Status Plant Species Potentially Occurring on the Project Site

| Species | Federal/ State | $\begin{aligned} & \hline \text { CNPS/ } \\ & \text { MSHCP } \\ & \text { Other } \end{aligned}$ | Known or Expected Localities | Comments |
| :---: | :---: | :---: | :---: | :---: |
| Abronia villosa var. aurita Chaparral sand verbena |  | CRPR 1B.1, NCS | Domenigoni-Diamond Valley, Winchester, Murrieta Creek, Temescal Valley, San Jacinto River, South of Hemet, Vail Lake, Gavilan Hills, Banning Bench, San Jacinto Mtns | Found in open sandy washes, sandy openings in coastal sage scrub. Blooms from January to September. Not anticipated on the project site. |
| Allium munzii Munz's onion | FT, SE | CRPR 1B.1, CS, NEPS | Paloma Valley, Lake Skinner, Skunk Hollow, Paloma Valley, N. Domenigoni Hills, Temescal Valley, Gavilan Hills | Generally found in dense clay soils, but also on gabbronic substrates. Blooms from March to May. Not anticipated on the project site. |
| Ambrosia pumila <br> San Diego ambrosia | FE | CRPR 1B.1, CS, NEPS | Skunk Hollow, south of Skunk Hollow, Nichols Road (Elsinore Area), Temescal Valley | Found in annual grasslands. Blooms from April to October. Does not occur on the project site. |
| California macrophylla Large-leaf filaree |  | $\begin{aligned} & \text { CRPR 1B.1, CS, } \\ & \text { ASNP, CAS } \end{aligned}$ | Bachelor Mtn, Gavilan Hills, hills between Murrieta \& Menifee Valley, Murrieta, Temescal Valley, Murrieta region \& the Lake Elsinore region | Found in clay soil grasslands. Blooms from March to May. Not anticipated on the project site. |
| Calochortus weedii var. intermedius <br> Intermediate mariposa lily |  | CRPR 1B.2, CCS | Murrieta, French Valley, Crown Valley, Vail Lake, Corona, Santa Ana Mtns | Found in coastal sage scrub or chaparral. Blooms from May to July. Not anticipated on the project site. |
| Centromadia pungens ssp. laevis Smooth tarplant |  | CRPR 1B.1, CS, ASNP, CAPS, RR/VP | French-Paloma Valleys, Murrieta Creek, Temecula Creek, Warm Springs Creek, Lake Elsinore region, San Jacinto RiverPerris, Lakeview, SJWA, Upper Salt Creek, Diamond Valley, Tucalota Creek, San Jacinto Valley, Santa Ana River | Found in alkali meadows or grasslands. Also found on the margin of riparian habitats in the region. Blooms from April to September. Not anticipates on the project site. |
| Chorizanthe parryi var. parryi Parry's spineflower |  | CRPR 1B.1, CCS | French-Paloma Valleys, Lake Skinner, Sedco Hills, Menifee region, Bundy Canyon, Crown Valley, N. Domenigoni Hills, Lake Elsinore region, W. Hemet Hills, Gavilan Hills, Box Springs Mtn, Lakeview Mtns | Found principally in alluvial fans and openings of coastal sage scrub. Blooms from April to June. Not anticipated on the project site. |
| Chorizanthe polygonoides ssp. longispina Long-spined spineflower |  | CRPR 1B.2, CS | Lake Skinner region, Menifee Valley, Warm Springs Creek, Murrieta region, Temecula region, Bundy Cyn, Skunk Hollow, Garner Valley, W. Hemet Area, Gavilan Hills, Temescal Cyn, Alberhill, Santa Rosa Plateau | Found on clay soils or eroded loams in annual grasslands. This species is found scattered on clayish substrates throughout the Perris Basin. Blooms from April to July. Not anticipated on the project site. |
| Convolvulus simulans Small-flowered morning glory |  | CRPR 4.2, CS | Paloma Valley, Lake Skinner region, French Valley, Skunk Hollow, Temescal Cyn, Gavilan Hills, Vail Lake | Found on clay soils in clay grasslands, generally on heavy clays. Blooms from March to July. Observed on Flossie Road ROW. |
| Deinandra paniculata Paniculate tar plant |  | CRPR 4.2, NCS | French-Paloma Valleys, Murrieta-Temecula-Lake Elsinore region, Menifee Valley, Perris Valley region, San Jacinto Valley, Moreno Valley, Gavilan Hills | Found in annual grasslands. Blooms from March to November, Observed on the project site. |

## 3. Environmental Analysis

Table 7 Special Status Plant Species Potentially Occurring on the Project Site

| Species | Federal/ <br> State | CNPS/ <br> MSHCP <br> Other | Known or Expected Localities |
| :--- | :--- | :--- | :--- | :--- |

Federal Designations:
FE = Listed by the Federal government as an endangered species.
FT = Listed by the Federal government as a threatened species.

## State Designations:

CE = Listed as endangered by the State of California.
CT = Listed by the State of California as a threatened species.
California Native Plant Society (CNPS) California Rare Plant Rank (CRPR):
$1 A=$ Plants presumed extinct in California.
$1 \mathrm{~B}=$ Plants considered rare, threatened or endangered in California and elsewhere.
2 = Plants rare, threatened or endangered in California but more common elsewhere.
3 = Plants about which we need more information - A review list.
4 = Plants of limited distribution - A watch list.

## CNPS Threat Code Extensions

. 1 = Seriously endangered in California.
. 2 = Fairly endangered in California.
. $3=$ Not very endangered in California.

## Western Riverside MSHCP

| Cs $=$ | Plant species covered w/in the MSHCP |
| :--- | :--- |
| Ccs $=$ | Plant species conditionally covered w/in the MSHCP; coverage conditional on the plan meeting species specific objectives. |
| Ncs $=$ | Plant species not covered w/ in the MSHCP |
| NEPS $=$ | Plant species on the list of Narrow endemic plant species. |
| ASNP $=$ | Plant species on the list of Additional Survey needs and procedures list. |
| RR/VP $=$ | Plant species on the Riparian/Riverine \& Vernal pool list. |
| CAPS $=$ | Plant species included on the list of Criteria Area Species |

## 3. Environmental Analysis

## Special Status Habitats

The project site lacks any special status habitats known to occur in the region. Riversidian sage scrub is a special status community, due to the number of declining wildlife and plant species associated with this scrub community. However, the Riversidian sage scrub-grassland ecotone found on the property would not be considered a special status community due to the very low shrub cover found in this grassland.

The Western Riverside HCP would consider drainages and riparian communities as special status habitats, due to the limited distribution of these communities and the number of special status species found in riparian habitats. In addition, the Western Riverside HCP does not cover federal or state permits for waters or wetlands within its area.

## Jurisdictional Waters and Wetlands

## Regulatory Protections for Waters and Wetlands

- US Army Corps of Engineers' Clean Water Act Section 404 permit for dredge and fill of materials into Waters of the United States includes drainages considered waters of the US and areas meeting the threepart criteria (hydrology, hydric soils, and wetland vegetation) for wetlands that may occur within the area of Waters of the US or adjacent to these Waters:
- San Diego Regional Water Quality Control Board (RWQB) regulates potential discharges of fill material in Waters of the State or isolated wetland, not regulated by the Army Corps, under the Porter Cologne Act (California Water Code Sections 13000 et seq.).
- California Department of Fish and Wildlife, under sections 1600 to 1616 of the California Fish and Game Code, regulates the obstruction, diversion, or alteration to any natural channel, bed, or bank of any river, stream (creek), or lake. This includes the riparian vegetation supported by these waterways, lakes, or reservoirs.

The project site does not contain any riparian habitat, open drainages, erosional channels, or other features that could contain plant species associated with riparian habitats. A blue-line channel was found on the property north of the project site. No channel was noted on the project site south of this channel during the 2016 field survey. Currently, it appears that the channel has been filled in on the adjacent property, and only overland flows occur on the project site.

An area along the southeast site boundary, approximately 0.24 acre, is mapped as a ponding area on the Environmental Constraints Sheet for the project site prepared by Diversified Engineering in 1983.

Seasonal wetlands, including vernal pools, are communities that could support special status plant or animal species. In addition, the Western Riverside HCP does not cover these wetlands or the potential permits required to disturb these habitats. No seasonal wetlands or evidence of ponding were noted on the property during the field survey or on the older Google Earth aerial photographs reviewed for this study.

## 3. Environmental Analysis

## Impacts

## Habitat Impacts

The proposed development of the Temecula Valley Charter School would remove a total of: 7.1 acres of agricultural land, 6.04 acres of disturbed annual grassland, 0.12 acres of a Riversidian sage scrub/Annual grassland ecotone, and 0.2 acre of a graded mapping unit. In addition, the development of the Flossie Way right-of-way for campus access would result in an additional loss of 0.5 acre of disturbed annual grassland. Impacts due to the development of the campus would result in an incremental loss of grassland and agricultural habitats and would be adverse, but not significant.

## Impacts on Sensitive Habitats

No impacts would occur, as no such habitats were identified onsite.

## Direct Impacts on Sensitive Species

## Sensitive Plant Species

There are no impacts to narrow endemic or criteria area plant species or special status plant communities, since these were not observed on the project site. The project site was determined to not contain potential habitat for six narrow endemic plant species during a habitat evaluation on March 2, 2017 due to the lack of suitable soils (deep clays); continued disturbance; and the lack of seasonal wetlands, such as vernal pools, that are the potential habitat for these species.

The proposed development would also result in the loss of some 141 individual paniculate tarplant plants on the school site and Koon Street right-of-way. Impacts would be adverse but not significant, due to the current status of this species, high abundance of these plants in the Perris Basin, and relatively low number of plants that would be removed. No mitigation is needed.

## Burrowing Owl

No burrowing owl or their sign was found on the site or in a 500 -foot-wide buffer area surrounding the site during a focused survey on March 7 through 10, 2017.

Burrowing owls could establish nests on the site or in the buffer prior to project initiation. The burrowing owl is a covered species under the MSHCP that requires additional surveys. The County of Riverside has conditioned the project prior to grading permit issuance for a 30 -day pre-construction burrowing owl survey. Potential impacts to the burrowing owl will be mitigated to a less than significant level with adherence to the County of Riverside condition of approval.

## 3. Environmental Analysis

## c) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U. S. Wildlife Service?

Less than Significant Impact. Impacts would be less than significant with adherence to Riverside County Conditions of Approval for a pre-construction burrowing owl surveys prior to grading permit issuance, as substantiated above in Section 7.b. No mitigation is required.
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant impact. The project site is in a rural residential and agricultural area of French Valley. The immediate neighborhood consists of rural residences and farmland. Extensive high density residential development is approximately 1,400 feet to the south. The open areas of Bachelor Mountain and the foothills around Diamond Valley Lake Reservoir are as close as one mile east of the project site. The project site is mostly vacant with two residences and plant communities dominated by grassland and agricultural lands with no riparian habitats. SR-79 borders the project site to the east.

Landscape features in rural landscapes that support important wildlife movement functions include aquatic and riparian habitats and ridgelines, particularly when they are in proximity to a known wildlife movement corridor. None of these features occur on the project site or adjoining areas. The project site probably supports local home range movement by common wildlife but does not contain a wildlife corridor or significantly contribute to wildlife movement. There are two culverts outside the eastern site border beneath SR-79 but there are no channels associated with these culverts. Medium-sized carnivores such as coyote and skunk could cross SR-79 through the culverts or on the highway surface during the night-time. The proposed project and would not impact existing paths for local wildlife movement. The proposed project would increase use of the agricultural lands on the project site and increase traffic in the vicinity. These changes would occur largely during the day-time and would not significantly impact local wildlife movement.

Birds and their nests are protected by the Migratory Bird Treaty Act (MBTA) and California Department of Fish and Wildlife (CDFW) Codes. Since the project site supports suitable nesting bird habitat, removal of vegetation or any other potential nesting bird habitat disturbances shall be conducted outside of the avian nesting season. Nesting bird season is February 1st through August 31st. If habitat or structures that support nesting birds must be cleared during the nesting season, a preconstruction nesting bird survey shall be conducted. The County of Riverside has conditioned the project prior to grading permit issuance for a preconstruction nesting bird survey. Impacts will be less than significant with adherence to Riverside County conditions of approval.

An important wildlife corridor occurs in the project region: the Proposed Constrained Linkage 18 is a narrow strip of riparian habitat along an unnamed drainage that links Paloma Valley (southwest of the project site) and the Bachelor Mountain area (east of the project site across SR-79). This linkage is approximately 1,400 feet south of the project site. The southern part of the linkage is adjoined by high density residential development. The planning species for this linkage area are bobcat and Los Angeles pocket mouse. The
project site is distant from proposed Constrained Linkage 18 and is separated from it by SR-79. The proposed project would not impact wildlife movement in this regional corridor. Impacts would be less than significant.

Based on the preceding, impacts would be less than significant and no mitigation is required.
e) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. The project site lacks special status habitats. The Riversidian sage scrub-grassland ecotone found on the project site would not be considered a special status community due to the very low shrub cover found in this grassland. The project site does not contain riparian habitat, open drainages, erosional channels or other features that could contain plant species associated with riparian habitats.

As discussed in 7.a. herein, no seasonal wetlands or evidence of ponding were noted within the main project site (APNs 476-010-059 or 476-010-013) during the field survey or in a review of historical aerial photos available in Google Earth. During March 2, 2017 field surveys, ponding was observed in two road rut features within the Flossie Way access road right-of-way. Chuck Black, 10(a)(1)(A) permit number TE835549-7, of Ecological Restoration Service collected and processed dry samples for the determination of presence of fairy shrimp cysts. No Branchinecta or Streptochepalus cysts were present in any of the samples from the tire ruts. The fairy shrimp report, dated May 29, 2017, can be found in Appendix C2.

No impact would occur and no mitigation is needed.
f) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. The project site does not contain any blue line streams, seasonal wetlands, or other jurisdictional waters. The proposed project would not impact wetlands or other jurisdictional waters.

As discussed in 7.a. herein, no seasonal wetlands or evidence of ponding were noted within the main project site (APNs 476-010-059 or 476-010-013) during the field survey or in a review of historical aerial photos available in Google Earth. During March 2, 2017 field surveys, ponding was observed in two road rut features within the Flossie Way access road right-of-way. Chuck Black, 10(a)(1)(A) permit number TE835549-7, of Ecological Restoration Service collected and processed dry samples for the determination of presence of fairy shrimp cysts. No Branchinecta or Streptochepalus cysts were present in any of the samples from the tire ruts. The fairy shrimp report, dated May 29, 2017, can be found in Appendix C2. No impacts will occur. No mitigation measures are needed.

## 3. Environmental Analysis

g) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The preservation policies of the County's Multiple Open Space Element of the General Plan rely strongly on implementation of the MSHCP for achieving biological conservation objectives. The proposed project is consistent with the provisions of the Riverside County MSHCP, and is consistent with the General Plan in this respect. No oak trees are located on the project site. Therefore, the Riverside County Oak Tree Management Guidelines are not applicable. No impact would occur and no mitigation is needed.

### 3.5 CULTURAL RESOURCES

The information in this section is based partly on the Phase I Cultural Resources Investigation for the Temecula Valley Charter School by McKenna et al., dated November 7, 2016. This report is kept confidential and is available at the County of Riverside Planning Department to archaeologists, Native American representatives, and planners.

## 8. Historic Resources

## a) Alter or destroy an historic site?

No Impact. The project site was not identified as a historic site in the Cultural Resources Investigation, and no impact would occur.
b) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

Less Than Significant Impact With Mitigation Incorporated. Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the State Historical Resources Commission, a local register of historical resources, or the lead agency. Generally, a resource is considered "historically significant" if it meets one of the following criteria:
i) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
ii) Is associated with the lives of persons important in our past;
iii) Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
iv) Has yielded, or may be likely to yield, information important in prehistory or history.

## 3. Environmental Analysis

## Historic Background

The Temecula Valley was within the jurisdiction of Mission San Luis Rey, and had become the principal grain producer for the mission by 1818. French Valley began to be settled in the late 1860s. The project site was part of a homestead established by Ralph Cassady in 1892. The current alignment of SR-79 was established along the eastern site boundary in the mid-1960s.

## Historic Resources

No historically significant resources were identified on the site by the Cultural Resources Investigation. A single-family residential complex-consisting of a detached single-family house, a prefabricated house, and a detached three-car garage-was developed in the western part of the site beginning in 1979. A modern onestory single-family house is atop the hill in the northwest part of the site. A metal scale, thought to be postWorld War II in age and of the type used to measure surface friction of cars (possibly race cars), extends vertically out of the ground in the south part of the site. A concrete cistern is in a fenced animal enclosure in the central part of the site. Aerial photographs depicted two structures on the eastern site boundary fronting SR-79, but the structures were not found during an intensive foot survey of the site.

## Project Impacts

Project development would involve soil disturbance on about 8.5 acres of the site plus about 0.65 acres of off-site roadways. There is a very low potential for the presence of buried historic archaeological resources onsite, but this impact is potentially significant. Implementation of Mitigation Measure CUL-1 would reduce this impact to less than significant.

## Findings of Fact

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

## Mitigation Measure

CUL-1 Before the beginning of earth-moving activities, Temecula Valley Charter School shall retain a Riverside County-certified historical archaeological consultant to be available on-call during earth-moving activities. If resources are uncovered, the remaining earth-moving activities on the property should be subjected to full-time monitoring. If resources identified as Native American in origin are uncovered, a Native American (Luiseño) monitor should be added. If resources are identified, the historic archaeological monitoring program should be initiated and continued until the earth-moving activities are completed. The historic archaeological consultant (consultant) and the Native American monitor, if applicable, shall have the authority to halt earth-moving activities within 50 feet of a discovery. The consultant shall recover, identify, and determine the significance of any resources discovered. Resources shall be curated at the facilities of the Western Science Center in Hemet, but the resources of Native American origin may be retained by the Luiseño Tribe. After the completion of all monitoring work, the consultant shall prepare a report describing the resources found for submission to the Riverside County Planning Department.

## 3. Environmental Analysis

## 9. Archaeological Resources

## a) Alter or destroy an archaeological site?

No Impact. No prehistoric archaeological resources were identified onsite during the intensive foot survey of the site. Letters inquiring about cultural resources of concern on or near the site were sent to representatives of several Native American tribes as part of the Cultural Resources Investigation; three responses were received, none of which mentioned concerns about cultural resources on or near the site. ${ }^{2}$ Six prehistoric archaeological resources have been identified by previous cultural resources investigations within one mile of the project site: four isolates, one prehistoric artifact scatter, and one destroyed pictograph site. ${ }^{3}$ The site is considered low to moderately sensitive for prehistoric archaeological resources. No impact would occur.
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to $\$ 15064.5$ ?

## Less Than Significant Impact With Mitigation Incorporated.

## Cultural Background

The project site borders the traditional and ethnographic boundaries of the Luiseño Native American population. The Luiseño are described as hunters and gatherers who also lived in semisedentary villages, practiced a complex form of territoriality and exploitation, and are known throughout Southern California for their rock art. The Luiseño practiced a relatively complex social organization based on lineages and clans. Individual clans occupied village sites and used individualized territories. The Luiseño subsisted on seasonal game-deer and a variety of small animals-and plants (acorns and herb and grass seeds).

A general cultural chronology for inland southern California is as follows:

- 11,000-8,000 years before present (ybp): Pleistocene/Early Holocene (Early Man) Period
- 8,000-5,500 ybp: San Dieguito Period
- 5,500-1,500 ybp: Millingstone/La Jolla-Pauma/Archaic/Encinitas Period
- 1,500-300 ybp: Late Prehistoric/Luiseño Period

No Early Man sites are known from the project region. The San Dieguito tradition is characterized by large domed scrapers, leaf-shaped knives and projectile points, stemmed projectile points, chipped stone crescentics, and hammerstones. The La Jolla Complex is recognized by the presence of millingstone assemblages and shell middens. The Late Prehistoric has been equated with the presence of cremations, bedrock mortars, millingstones, small triangular projectile points with concave bases, bone awls, stone pendants, Olivella shell beads, and quartz crystals. ${ }^{4}$

[^2]
## 3. Environmental Analysis

## Archaeological Resources

No archaeological resources were identified onsite, as described in Section 9.a.

## Project Impacts

Project development would involve soil disturbance on about 9.15 acres including the 8.5 -acre school site and about 0.65 acres of off-site roadways. There is a low to moderate potential for the presence of buried prehistoric archaeological resources onsite. This impact is potentially significant. Implementation of Mitigation Measure CUL-2 would reduce this impact to less than significant.

## Findings of Fact

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

## Mitigation Measure

CUL-2 Prior to the issuance of grading permits, the developer/permit applicant shall enter into an agreement with and retain a Native American Monitor from the appropriate tribe.

The Native American Monitor shall be on-site during all initial ground disturbing activities and excavation of each portion of the project site including clearing, grubbing, tree removals, grading and trenching. In conjunction with the Archaeological Monitor, the Native American Monitor shall have the authority to temporarily divert, redirect or halt the ground disturbance activities to allow identification, evaluation, and potential recovery of cultural resources.

The developer/permit applicant shall submit a fully executed copy of the contract to the County Archaeologist to ensure compliance with this condition of approval. Upon verification, the Archaeologist shall clear this condition.

This agreement shall not modify any condition of approval or mitigation measure.

## c) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered within the project site, disturbance of the site shall halt and remain halted until the coroner has conducted an investigation into the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. The project would comply with existing law, and potential impacts to human remains would be less than significant.

## 3. Environmental Analysis

## d) Restrict existing religious or sacred uses within the potential impact area?

No Impact. No religious or sacred uses on or near the site were identified in the cultural resources investigation or in responses by Native American tribal representatives. No impact would occur.

## 10. Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c). of Public Resources Code Section 5024.1 for the purpose of this paragraph, the lead agency shall consider the significance to a California Native tribe.

## Less than Significant Impact with Mitigation Incorporated.

## Tribal Consultation

Notifications about this project were sent to Native American groups who had requested to be noticed pursuant to AB 52. These include the Pechanga Cultural Resources Department, Soboba Band of Luiseño Indians, Ramona Band of Cahuilla Indians, Colorado River Indian Tribes and the Rincon Band of Luiseño Indians. Requests for consultation were received from Pechanga and Soboba. The remaining tribes did not request consultation on this project. Pechanga and Soboba did not identify any Tribal Cultural Resources in the project area. Pechanga and Soboba expressed concern that subsurface resources may be present and requested that a native Monitor be present during grading activities. Consultation was concluded with Soboba on April 19, 2017 and with Pechanga on April 19, 2017.

## Project Impacts

Project development would involve soil disturbance on about 8.5 acres of the site plus about 0.65 acres of off-site roadways. There is a potential for the presence of buried tribal cultural resources onsite, and this impact is potentially significant. Implementation of Mitigation Measure CUL-2 would reduce this impact to less than significant.

## Findings of Fact

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

## Mitigation Measure

Mitigation Measure CUL-2 applies to this impact.

### 3.6 GEOLOGY AND SOILS

The information in this section is based partly on the following technical studies:

- Geotechnical Investigation, Proposed Charter School Site. by Inland Foundation Engineering, dated September 9, 2016. A complete copy of this report is included as Appendix D of this Initial Study.
- Paleontological Technical Study: Temecula Valley Cbarter School Project, Riverside County, California. Paleo Solutions, February 24, 2017. A complete copy of this report is included as Appendix E of this Initial Study.

Would the project:

## 11. Alquist-Priolo Earthquake Fault Zone or County Fault Hazard Zones

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death?

No impact. See the analysis in Section 11.b below.
b) Be subject to rupture of a known earthquake fault, as delineated on the most recent AlquistPriolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

No Impact. The Alquist-Priolo Earthquake Fault Zoning Act was passed to prevent construction of buildings used for human occupancy on the surface of active faults, in order to minimize the hazard of surface rupture of a fault to people and buildings. Before cities and counties can permit development within Alquist-Priolo Earthquake Fault Zones, geologic investigations are required to show that the sites are not threatened by surface rupture from future earthquakes. Active earthquake faults are faults where surface rupture has occurred within the last 11,000 years. There are no Alquist-Priolo Earthquake Fault Zones in or next to the project site. In addition, the site does not lie within a fault zone established by the County of Riverside. The closest active faults are the Elsinore-Temecula Fault ( 7.4 miles away), the Elsinore-Glen Ivy Fault (13.8 miles away), and the San Jacinto-San Jacinto Valley and San Jacinto-Anza Faults ( 15.0 miles away) from the site (LGC, 2016b). Therefore, the potential for active fault rupture at the site is considered very low and no direct seismically-induced rupture impacts would occur.

Project development would not place people or structures at risk from surface rupture of a known active fault, and no impact would occur. No mitigation is needed.

## 3. Environmental Analysis

## 12. Liquefaction Potential Zone

## a) Be subject to seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction refers to lose, saturated sand or silt deposits that behave as a liquid and lose their load-supporting capability when strongly shaken. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction. The potential for liquefaction and seismically induced settlement onsite is negligible due to the presence of medium dense to dense older alluvial soils underlain by relatively shallow metamorphic bedrock. Impacts would be less than significant and no mitigation is needed.

## 13. Ground-shaking Zone

## a) Be subject to strong seismic ground shaking?

Less Than Significant Impact. Seismic design parameters for the proposed project were calculated in the Geotechnical Investigation Report pursuant to 2013 California Building Code requirements.

Structures for human occupancy must be designed to meet or exceed California Building Code (CBC) standards for earthquake resistance. The CBC contains provisions for earthquake safety based on factors including occupancy type, the types of soil and rock onsite, and the strength of ground motion with a specified probability at the site. The geotechnical investigation for the project would calculate seismic design parameters, pursuant to CBC requirements, that must be used in the design of the proposed building. The CBC is updated on a three-year cycle; the 2016 CBC is scheduled to take effect on January 1 2017. Project development would not subject people or structures to substantial hazards from ground shaking, and impacts would be less than significant. No mitigation is required.

## 14. Landslide Risk

a) Be located on a geologic unit or soil that is unstable, or that would become unstable due to the project, and potentially result in on- or off-site landslide, lateral spreading, collapse, or rockfall hazards?

## Less Than Significant Impact.

## Landslide and Rockfall

The potential for earthquake-induced landslides is considered very low due to the relatively low-lying topography of the site and adjacent areas. Impacts would be less than significant and no mitigation is needed.

## Lateral Spreading

Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. Hazards from lateral spreading would be minimized by compliance with any recommendations in the geotechnical investigation report for minimizing liquefaction hazards. Impacts would be less than significant and no mitigation is needed.

## Collapse

Collapsible soils shrink upon being wetted and/or being subject to a load. One test of subsurface site soil indicated a moderate potential for soil collapse ("saturation collapse"). The Geotechnical Investigation (see Initial Study Appendix D) recommends removal of existing site soils to at least 24 inches below existing grade, or where testing indicates a relative compaction of at least 85 percent in undisturbed native soils, whichever is deeper, and replacement with compacted, moistened soils. The Geotechnical Investigation Report recommends a foundation consisting of shallow spread footings with a slab-on-grade floor. Compliance with recommendations of the Geotechnical Investigation Report would reduce hazards from collapsible soils to a less than significant impact. No mitigation is required.

## 15. Ground Subsidence

a) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in ground subsidence?

Less than Significant Impact. The major cause of ground subsidence is the excessive withdrawal of groundwater. Ground subsidence does not appear to affect the site. Impacts would be less than significant and no mitigation is needed.

## 16. Other Geologic Hazards

a) Be subject to geologic hazards, such as seiche, mudflow, or volcanic hazard?

## Less than Significant Impact.

## Seiche

A seiche is a surface wave created when an inland water body is shaken, usually by an earthquake. There are no surface water bodies close enough to the project site to pose a flood hazard to the site due to a seiche, and no impact would occur.

## Mudflow

A mudflow is a landslide composed of saturated rock debris and soil with a consistency of wet cement. The hill onsite is too small to generate a mudflow that would pose a substantial flood hazard to people or structures onsite. There are no other slopes close enough to the project site to pose a mudflow hazard to the site. No impact would occur.

## Volcanic Hazard

No volcano hazard areas in Riverside County are mapped on the US Geological Survey's California Volcano Observatory. The two nearest such areas to the project site are the Lavic Lake Volcanic Field in San Bernardino County, about 87 miles to the northeast; and Salton Buttes Lava Dome in Imperial County about 92 miles to the east (USGS 2016). No impact would occur and no mitigation is required.

## 3. Environmental Analysis

## 17. Slopes

## a) Change topography or ground surface relief features?

Less than Significant Impact. The hill in the west part of the site would remain. The school would be built mostly in the east half of the site which slopes very slightly to the east. Impacts would be less than significant, and no mitigation is needed.
b) Create cut or fill slopes greater than 2:1 or higher than 10 feet?

No Impact. The project grading plan does not include cut or fill slopes greater than 2:1 (horizontal:vertical), or higher than 10 feet. No impact would occur, and no mitigation is required.
c) Result in grading that affects or negates subsurface sewage disposal systems?

No Impact. The proposed grading would accommodate installation of sewer laterals, and no impact would occur. No mitigation is needed.

## 18. Soils

## a) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Project construction would disturb soil on 10 acres of the 14.6-acre site. Construction projects of one acre or more are regulated under the Statewide General Construction Permit, Order No. 2012-0006-DWQ, issued by the State Water Resources Control Board in 2012. Projects obtain coverage by developing and implementing a Stormwater Pollution Prevention Plan estimating sediment risk from construction activities to receiving waters, and specifying best management practices (BMPs) that would be used by the project to minimize pollution of stormwater. Categories of BMPs used in Stormwater Pollution Prevention Plans are described below in Table 8.

Table 8 Construction Best Management Practices

| Category | Purpose | Examples |
| :--- | :--- | :--- |
| Erosion Controls and Wind Erosion <br> Controls | Cover and/or bind soil surface, to prevent soil <br> particles from being detached and transported by <br> water or wind | Mulch, geotextiles, mats, hydroseeding, <br> earth dikes, swales |
| Sediment Controls | Filter out soil particles that have been detached and <br> transported in water. | Barriers such as straw bales, sandbags, <br> fiber rolls, and gravel bag berms; desilting <br> basin; cleaning measures such as street <br> sweeping |
| Tracking Controls | Minimize the tracking of soil offsite by vehicles | Stabilized construction roadways and <br> construction entrances/exits; <br> entrance/outlet tire wash. |

Table 8 Construction Best Management Practices

| Category | Purpose | Examples |
| :--- | :--- | :--- |
|  | Prohibit discharge of materials other than <br> stormwater, such as discharges from the cleaning, <br> maintenance, and fueling of vehicles and <br> equipment. Conduct various construction <br> operations, including paving, grinding, and concrete <br> curing and finishing, in ways that minimize non- <br> stormwater discharges and contamination of any <br> such discharges. | BMPs specifying methods for: <br> paving and grinding operations; cleaning, <br> fueling, and maintenance of vehicles and <br> equipment; concrete curing; concrete <br> finishing. |
| Controls |  |  |

Project design and operation would be required to comply with the Municipal Stormwater Permit ("MS4 Permit") issued by the San Diego RWQCB in May 2013 (Order No. R9-2013-0001). The project would be classified as a Priority Project under the MS4 Permit because it would develop over 10,000 square feet of impervious surfaces. The project would be required to design and implement structural BMPs for minimizing stormwater pollution, including low-impact development (LID) BMPs, and could be required to design and implement hydromodification BMPs.

LID is a stormwater management and land development strategy that combines a hydrologically functional site design with pollution prevention measures to compensate for land development impacts on hydrology and water quality. LID techniques mimic the predevelopment site hydrology by using site design techniques that store, infiltrate, evapotranspire, bio-filter, or detain runoff close to its source. LID requirements for priority development projects in the portion of the Santa Margarita Watershed in Riverside County are detailed in the water quality management plan for the Santa Margarita Region of Riverside County issued by the Riverside County Flood Control and Water Conservation District, effective July 11, 2014.

Hydromodification is the management of post-project runoff flows and durations so that they are maintained to the levels of the pre-project condition.

After compliance with requirements of the MS4 Permit, the project would not cause substantial erosion or siltation, and impacts would be less than significant. No mitigation is needed.
b) Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property?

Less Than Significant Impact. Expansive soils shrink or swell as the moisture content decreases or increases; the shrinking or swelling can shift, crack, or break structures built on such soils. Two samples of subsurface site soils yielded expansion indices of 66 and 25 , indicating medium and low expansion potentials, respectively. Detailed recommendations for concrete slab-on-grade foundations on expansive soils are provided in the Geotechnical Investigation Report, in compliance with the California Building Code and

## 3. Environmental Analysis

Riverside County Ordinance. Project design and construction would comply with such recommendations, and impacts would be less than significant. No mitigation is needed.
c) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The Eastern Municipal Water District provides sewer service to the community of French Valley. Project development would include construction of sewers connecting to existing sewer mains, and the project would not involve use of septic tanks or other alternative wastewater disposal systems. No impact would occur and no mitigation is required.

## 19. Erosion

a) Change deposition, siltation, or erosion that may modify the channel of a river or stream or the bed of a lake?

Less than Significant Impact. Project development would include implementation of construction and operational BMPs described above in Section 18.a. Thus, development would not change siltation or erosion so as to change a river or stream channel or a lakebed. Impacts would be less than significant and no mitigation is required.
b) Result in any increase in water erosion either on or off site?

Less than Significant Impact. Project erosion impacts would be less than significant, as substantiated above in Section 18.a.

## 20. Wind Erosion and Blowsand from project either on or off site.

a) Be impacted by or result in an increase in wind erosion and blowsand, either on or off site?

Less than Significant Impact. The construction BMPs that would be implemented by the project include wind erosion BMPs. At completion, the entire campus would be developed with buildings, landscaping, and paved areas including parking lots, driveways, walkways, and hardcourts. Thus, the finished campus would not contain bare soil susceptible to wind erosion. Impacts would be less than significant and no mitigation is required.

## 21. Paleontological Resources

A paleontological study of the project site was completed by Paleo Solutions on February 24, 2017; a complete copy of this report is included as Appendix E of this Initial Study.
a) Directly or indirectly destroy a unique paleontological resource, or site, or unique geologic feature?

## Less than Significant Impact with Mitigation Incorporated.

## 3. Environmental Analysis

## Paleontological Resources

## Literature and Records Searches

The paleontological study included searches of several geologic maps and scientific papers, and a records search by the Western Science Center in Hemet. The Records Search did not identify fossil localities within one mile of the project site. The following is a discussion of the literature search and records search results for western Riverside County including an assessment of paleontological sensitivity of onsite rocks and soils. The project site is underlain by four types of rock, sediment, and soil:

Mesozoic Igneous and Sedimentary Rocks
Mesozoic-age igneous rocks (gabbro [Kgb], granodiorite [ Kgd ], and metamorphic rock (phyllite [Mzp]). The Mesozoic Era extends from about 251 to 65.5 million years before present (mybp). Phyllite is mapped within the Project area in the central, northwest corner, and southeast corner. Phyllite bedrock underlies the Quaternary alluvial sediments in the Project area between one and ten feet below the current ground surface. Additionally, gabbro ( Kgb ) is mapped west of the Project area, and granodiorite ( Kgd ) is mapped as two small slivers southwest of the Project area (Figure 3). Igneous rocks formed deep within the Earth's surface at high temperature and high pressure and lack fossil resources. Metamorphic rocks have been deformed by heat and pressure and will usually be devoid of recognizable fossil remains. Igneous and metamorphic rocks are therefore considered to have very low paleontological potential (Class 1) using the Potential Fossil Yield Classification (PFYC) system and low sensitivity per Riverside County guidelines.

## Pleistocene Very Old Alluwial Deposits

Pleistocene very old alluvial valley deposits (Qvova) comprise fluvial sediments deposited on broad canyon floors by ancient river and stream systems. The Pleistocene Epoch extends from about 2.59 mybp to approximately 11,700 years before present (ybp).

Older alluvial sediments are heavily dissected and consist of reddish-brown, clay, silt, sand and gravel. Pleistocene very old alluvial deposits are mapped on the majority of the western Project area as well as the northeast corner.

Taxonomically diverse and locally abundant Pleistocene animals and plants have been collected from older alluvial deposits similar to those mapped in the Project area throughout southern California and include mammoth, mastodon, camel, horse, bison, giant ground sloth, peccary, cheetah, lion, saber tooth cat, capybara, dire wolf, and numerous taxa of smaller mammals. Pleistocene very old alluvial deposits have moderate paleontological potential (Class 3) using the PFYC system and high (A) sensitivity per Riverside County guidelines. ${ }^{5}$

Pleistocene older alluvium has produced numerous Pleistocene-age vertebrate fossils in the Project vicinity as well as elsewhere in Riverside County. Most notable is the massive fossil collection recovered during excavation for Diamond Valley Lake northeast of the Project area. These sediments have yielded tens of

[^3]
## 3. Environmental Analysis

thousands of fossils corresponding to the late Irvingtonian and early Rancholabrean North American Land Mammal Ages. ${ }^{6}$ The Diamond Valley Lake Local Fauna (DVLLF) is the largest open, non-asphaltic late Pleistocene fossil assemblage known in the southwestern United States. The assemblage comprises 2,646 localities and includes nearly 100,000 identifiable fossils representing more than 105 vertebrate, invertebrate, and plant taxa. Vertebrate fossils are generally well-preserved and relatively complete and provide important data on the relative abundance and diversity of species through time at the given geographical location. A complete list of DVLLF taxa is provided in Table 3 of the Paleontological Study included as Appendix E to this Initial Study.

Furthermore, the Pauba Formation, which is geologically correlative with Pleistocene older alluvium, has produced numerous specimens of well-preserved fossil vertebrates of late Pleistocene age during excavations for a nearby housing development project in Temecula, Riverside County. These fossils were discovered during monitoring in 2004 and included scientifically significant specimens from six different taxa: Mammutbus columbi (mammoth), Equus spp. (horse), Bison antiquus (bison), cf. Camelidae (camel family), Rodentia (rodent family), and Serpentes (snake).

## Quaternary Young Alluvial Deposits

Quaternary young alluvial deposits (Qa, Qyaa) are Holocene-age (10,000 years ago - Recent) and are composed of gravel, sand, and clay that comprise valleys and alluvial fans. Quaternary deposits are poorly consolidated and represent sedimentation from current and former major rivers and streams. The alluvium is covered with greyish colored soil. Quaternary valley alluvium (Qa) is mapped in the northeast corner of the Project area, and alluvial channel deposits (Qyaa) are mapped southeast of the Project area.

Fossils are generally unknown from Holocene-age surficial deposits, due to their young age. Reworked fossils from older deposits may be present, but would not meet significance criteria as the fossils would lack critical contextual information. However, they may overlie older, paleontologically sensitive deposits at depth. Therefore, the Quaternary alluvium deposits are designated as having low paleontological sensitivity (Class 2) above four feet depth and are designated as having unknown paleontological potential (Class U ) below four feet depth using the PFYC system. These deposits have a high (B) sensitivity per Riverside County guidelines.

## Artificial Fill

Artificial fill (af) comprises recent deposits of previously disturbed sediments emplaced by construction operations and are found in areas where recent construction has taken place. Colors are highly variable and sediments are mottled in appearance. Although these materials may contain fossil resources, they have been removed from their original locations and lack significance. Artificial fill is not mapped in the Project area; however, the apparent preexisting surface disturbance in the vicinity suggests the presence of these materials comprising some of the surface of the Project area. Artificial fill (af) has low paleontological potential (Class 2) using the PFYC system and high (B) sensitivity per Riverside County guidelines.

[^4]
## 3. Environmental Analysis

## Field Survey Results

No fossils were observed onsite during a field survey conducted February 2, 2017.

## Impacts

Project development would include ground disturbance on the entire 8.5 -acre school site, plus about 0.66 acres of Koon Street and Pourroy Road. Surface grading or shallow excavations entirely within Holocene young alluvial deposits in the project area are unlikely to uncover significant fossil vertebrate remains. However, older deposits may be present immediately below a thin veneer of Holocene soils or alluvium. The geotechnical boring logs show Quaternary (Holocene and Pleistocene) sediments one foot beneath the ground surface and extending to a maximum depth of ten feet. Excavations in the Project area that extend down into very old sedimentary deposits may well impact scientifically important paleontological resources. Excavations into Mesozoic phyllite, expected to be encountered starting at relatively shallow depths of one to ten feet below the current ground surface, will not impact scientifically significant fossils, although the overlying sediments may contain resources. Therefore, grading and other earthmoving activities may potentially result in significant direct impacts to paleontological resources throughout the entirety of the Project area.

## Findings of Fact

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect.

## Mitigation Measure

Construction excavations which disturb Pleistocene-age sediments shall be monitored by a professional paleontologist in order to reduce potential adverse impacts on scientifically important paleontological resources to a less than significant level. Prior to construction, the project applicant shall retain a professional paleontologist. The paleontologist shall prepare a paleontological resources monitoring plan (PRMP) before the beginning of ground-disturbing activities. The PRMP shall provide detailed recommended monitoring locations; a description of a worker training program; detailed procedures for monitoring, fossil recovery, laboratory analysis, and museum curation; a curation agreement with the Western Science Center or another accredited repository; and notification procedures in the event of a fossil discovery by a paleontological monitor or other project personnel. Because the Project area is nearly devoid of exposed sediments, the approximate ages (Holocene or Pleistocene) of the Quaternary deposits underlying the Project area could not be determined from the field survey. Additionally, the subterranean sediment descriptions provided in the geotechnical report are inconclusive for determining Holocene or Pleistocene ages. Therefore, it is recommended that excavations in all locations of the Project area be initially monitored for the presence of paleontologically sensitive sediments. If it is determined that only Holocene-age alluvium (PFYC Class 2) or Mesozoic-age phyllite (PFYC Class 1) is impacted, monitoring will be reduced or halted. Any potential fossils that are unearthed during construction should be evaluated by a professional paleontologist as described in the PRMP.

## 3. Environmental Analysis

## Unique Geological Resources

There are no unique geological features onsite. French Valley is one of the valleys in the San Jacinto Basin, a broad area of valleys interspersed with hills bounded by the San Jacinto and Santa Rosa Mountains to the northeast and the Santa Ana Mountains to the southwest. The northwest part of the project site is a hill with an elevation of about 1,470 feet above mean sea level; the remainder of the site has a slight east slope, and the elevation at the southeast corner of the site is about 1,412 feet above mean sea level. The site is underlain by very old (middle to early Pleistocene) alluvial valley deposits and Mesozoic metamorphic bedrock (phillite) (Inland Foundation Engineering 2016). No impact would occur and no mitigation is required.

### 3.7 GREENHOUSE GAS EMISSIONS

## 22. Greenhouse Gas Emissions

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHGs), into the atmosphere. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs-water vapor, carbon dioxide $\left(\mathrm{CO}_{2}\right)$, methane $\left(\mathrm{CH}_{4}\right)$, and ozone $\left(\mathrm{O}_{3}\right)$ - that are the likely cause of an increase in global average temperatures observed within the 20 th and 21 st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide $\left(\mathrm{N}_{2} \mathrm{O}\right)$, sulfur hexafluoride $\left(\mathrm{SF}_{6}\right)$, hydro fluorocarbons, per fluorocarbons, and chlorofluorocarbons. ${ }^{7,8}$

This section analyzes the project's contribution to global climate change impacts in California through an analysis of project-related GHG emissions. Information on manufacture of cement, steel, and other "life cycle" emissions that would occur as a result of the project are not applicable and are not included in the analysis. ${ }^{9}$ Black carbon emissions are not included in the GHG analysis because CARB does not include this pollutant in the state's AB 32 inventory and treats this short-lived climate pollutant separately (CARB 2016). ${ }^{10}$

[^5]
## 3. Environmental Analysis

A background discussion on the GHG regulatory setting and GHG modeling can be found in Appendix B to this Initial Study.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

## Would the project:

## a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact.

The proposed project would generate GHG emissions from vehicle trips generated by the project, energy use (indirectly from purchased electricity use and directly through fuel consumed for building heating) and area sources (e.g., equipment used on-site, consumer products, coatings), water/wastewater generation, and waste disposal. Annual GHG emissions were calculated for construction and operation of the project. Annual average construction emissions were amortized over 30 years and included in the emissions inventory to account for GHG emissions from the construction phase of the project. For the purpose of this GHG analysis, it has been conservatively assumed that the project would generate an increase in vehicle mile traveled (VMT), water use, and solid waste generation due to an overall increase in school facility capacity. Project-related GHG emissions are shown in Table 9. As shown in the table, the proposed project at buildout would generate 1,267 metric tons of carbon dioxide-equivalent $\left(\mathrm{MTCO}_{2} \mathrm{e}\right)$ emissions per year. The total net increase of GHG emissions on-site from the project would not exceed the SCAQMD's bright-line threshold of $3,000 \mathrm{MTCO}_{2}$ e, ${ }^{11}$ and the proposed project's cumulative contribution to GHG emissions is less than significant. No mitigation measures are required.

[^6]
## 3. Environmental Analysis

Table 9 Project-Related GHG Emissions

| Source | MTCO $_{2}$ e/year | Percent of Project Total |
| :--- | :---: | :---: |
| Area | $<1$ | $<1 \%$ |
| Energy ${ }^{1}$ | 135 | $11 \%$ |
| Mobile | 1,084 | $86 \%$ |
| Waste | 26 | $2 \%$ |
| Water | 7 | $1 \%$ |
| Amortized Construction Emissions ${ }^{2}$ | 15 | $1 \%$ |
| Total Emissions | 1,267 | $100 \%$ |
| SCAQMD's Bright-Line Threshold | 3,000 | NA |
| Exceeds Bright-Line Threshold | No | NA |

Source: CalEEMod Version 2013.2.2.
MTCO2e: metric tons of carbon dioxide-equivalent
Note: Percent changes from each source may not total to 100 percent due to rounding
1 Assumes implementation of the 2013 California Green Building Standards Code (CALGreen) and 2016 Building and Energy Efficiency Standards. The 2016 Building and Energy Efficiency Standards are 33.5 percent more energy efficient than the 2008 Standards for non-residential buildings.
2 Construction emissions are amortized over a 30-year project lifetime per recommended SCAQMD methodology.
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. Applicable plans adopted for the purpose of reducing GHG emissions include the California Air Resources Board's (CARB) Scoping Plan, the Southern California Association of Governments' Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and the County of Riverside's Climate Action Plan (CAP). A consistency analysis with these plans is presented below.

## CARB Scoping Plan

CARB's Scoping Plan is California's GHG reduction strategy to achieve the state's GHG emissions reduction target established by Assembly Bill (AB) 32, which is to return to 1990 emission levels by year 2020. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Since adoption of the 2008 Scoping Plan, state agencies have adopted programs identified in the plan, and the legislature has passed additional legislation to achieve the GHG reduction targets. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard (LCFS), California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the Corporate Average Fuel Economy (CAFE) standards, and other early action measures as necessary to ensure the state is on target to achieve the GHG emissions reduction goals of AB 32 . Also, new buildings are required to comply with the 2016 Building and Energy Efficiency Standards and 2013 California Green Building Code (CALGreen). The state is currently preparing the 2030 Target Scoping Plan Update to address the new 2030 interim target to achieve a 40 percent reduction below 1990 levels by 2030, established by Senate Bill 32 (SB 32). While measures in the Scoping Plan apply to state agencies and not the proposed project, the project's GHG
emissions would be reduced from compliance with statewide measures that have been adopted since AB 32 was adopted.

## SCAG's Regional Transportation Plan/Sustainable Communities Strategy

In addition to AB 32, the California legislature passed Senate Bill (SB) 375 to connect regional transportation planning to land use decisions made at a local level. SB 375 requires the metropolitan planning organizations to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plans to achieve the per capita GHG reduction targets. For the SCAG region, the SCS was adopted in April 2016 (SCAG 2016). The SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. The proposed project would provide for the educational needs of the community to meet the existing and projected demand for school services. Additionally, the proposed project would be constructed on an infill site and would not require extension of infrastructure in greenfield areas. The proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the RTP/SCS.

## Riverside County Climate Action Plan

The County of Riverside adopted a CAP in December of 2015. The CAP identifies and evaluates feasible and effective policies to reduce GHG emissions in order to meet state, federal, and international targets. The CAP's Appendix F indicates that the development review process procedures for evaluating GHG impacts and determining significance for CEQA purposes will be streamlined by: 1) applying an emissions level that is determined to be less than significant for small projects, and 2) utilizing the Screening Tables to mitigate project GHG emissions that exceed the threshold level. A threshold level above 3,000 $\mathrm{MTCO}_{2}$ e per year is used to identify projects that require the use of Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions. The $3,000 \mathrm{MTCO}_{2}$ e per year value is used by the County to define small projects that are considered less than significant, when combined with the following modest efficiency measures, and do not need to use the Screening Tables or alternative GHG mitigation analysis (Riverside 2015):

- Energy efficiency of at least 5 percent greater than 2010 Title 24 requirements: Non-residential projects constructed after January 1, 2017 are 33.5 percent more energy efficiency than the 2008 Building and Energy Efficiency Standards (which were included in the 2010 CALGreen). Therefore, the proposed project complies with this efficiency measure.
- Water conservation measures that matches the California Green Building Code in effect as of January 2011: The proposed project would comply with the county's Water Efficient Landscape Ordinance (WELO) and water efficiency measures identified in the current version of CALGreen. Therefore, the proposed project would comply with this efficiency measure.

Since the proposed project would not exceed the threshold of $3,000 \mathrm{MTCO}_{2}$ e per year and would comply with the efficiency measures, it is considered less than significant and do not need to use the Screening Tables or alternative GHG mitigation analysis. Therefore, the proposed project is consistent with the CAP and the statewide GHG emissions goals of AB 32 . No impact would occur and no mitigation measures are required.

## 3. Environmental Analysis

### 3.8 HAZARDS AND HAZARDOUS MATERIALS

## 23. Hazards and Hazardous Materials

The information in this Section is based partly on the Phase I Environmental Site Assessment of 31455 Winchester Road, by EMG, dated June 6, 2016; a complete copy of this report is included as Appendix F of this Initial Study.
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

Less Than Significant Impact. Project construction would involve use of hazardous materials, including fuels, greases, lubricants, cleansers, paints, and pesticides. The use, storage, transport, and disposal of hazardous materials during project construction would be required to comply with existing regulations of several agencies, including the Department of Toxic Substances Control (DTSC), the US Environmental Protection Agency, Occupational Safety \& Health Administration, Caltrans, County of Riverside Department of Environmental Health, and Riverside County Fire Department (RCFD). Compliance with applicable laws and regulations governing the use, storage, and transportation of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts to occur. Additionally, the proposed project would be constructed with strict adherence to all emergency response plan requirements set forth by the County of Riverside and RCFD.

Project operation would involve the use of small amounts of hazardous materials, such as cleansers, pesticides, and paints, for cleaning and maintenance purposes. Use of hazardous materials during project operation would comply with the same regulations that would pertain to use of such materials during project construction. Project construction and operation would not cause significant hazards to the public or the environment through routine use of hazardous materials, and impacts would be less than significant. No mitigation is needed.
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. During project construction, the construction contractor would maintain equipment and supplies onsite for containing and cleaning a hazardous materials spill and would train construction workers in such containing and cleaning. The construction contractor would notify the Riverside County Department of Environmental Health immediately in the event of a hazardous material release that onsite workers could not safely contain and clean.

During project operation, hazardous materials would be used in small amounts and in conformance with regulations of agencies listed above in Section 3.8.a. The use of hazardous materials during project operation and project construction would not cause substantial hazards arising from accidental release of hazardous materials, and impacts would be less than significant. No mitigation is required.
c) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The emergency response plan in effect in unincorporated Riverside County is the Emergency Operations Plan approved by the Riverside County Board of Supervisors in 2006. Staging of vehicles, equipment, and construction materials during project construction would comply with requirements of the Riverside County Sheriff's Department and Riverside County Road Maintenance Division regarding maintaining emergency access on public roadways. Project construction and operation would not interfere with implementation of the Emergency Operations Plan, and no impact would occur. No mitigation is required.
d) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. There are no existing schools within 0.25 mile of the project site, and no impact would occur. No mitigation is needed.
e) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less than Significant Impact. No hazardous materials sites were identified on or within one mile of the project site during an environmental database review conducted on May 19, 2016 as part of the Phase I Environmental Site Assessment (ESA) for the project site (EMG 2016). The ESA identified past agricultural use onsite. However, based on aerial photographs, such past use of the site is considered to have been grazing land or tended grass, not irrigated cropland. The DTSC requires environmental assessment for pesticide residues on land previously used as irrigated cropland. The past use of the site does not trigger the DTSC requirement. Project development would not create hazards arising from a listed hazardous materials site on the project site, and no impact would occur. No mitigation is needed.

## 24. Airports

a) Result in an inconsistency with an Airport Master Plan?

No Impact. The project site is not within the airport land use plan or within two nautical miles of a publicuse airport. The nearest public-use airport to the site is French Valley Airport, about 3.3 miles to the southwest. No impact would occur and no mitigation is required.

## b) Require review by the Airport Land Use Commission?

No Impact. The project site is not within the airport land use plan, and project development would not require review by the Riverside County Airport Land Use Commission. No impact would occur and no mitigation is needed.

## 3. Environmental Analysis

c) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The project site is not within the airport land use plan or within two nautical miles of a publicuse airport. The nearest public-use airport to the site is French Valley Airport, about 3.3 miles to the southwest. The site is not in areas surrounding French Valley Airport where land uses are regulated to minimize hazards from aircraft crashes to persons on the ground, and not in areas where heights of structures are limited to prevent obstructions to air navigation. Project development would not cause airportrelated hazards to persons onsite, and no impact would occur. No mitigation is required.
d) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There are no private airstrips or heliports within one nautical mile of the project site, and no impact would occur. No mitigation is needed.

## 25. Hazardous Fire Area

a) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact. The nearest fire hazard zone to the project site is a Very High Fire Hazard Severity Zone about 700 feet to the west mapped by the California Department of Forestry and Fire Protection (CAL FIRE 2009). ${ }^{12}$ The RCFD provides fire protection to the community of French Valley, including the project site. The two nearest fire stations to the project site are Station 83 at French Valley Airport, about 3.3 miles to the southwest, and Station 34 in the community of Winchester, about 5.3 miles to the north. RCFD has automatic aid agreements with the cities of Hemet and Murrieta and the Pechanga Band of Luiseno Mission Indians, and a mutual aid agreement with March Air Force Base (Management Partners 2009). ${ }^{13}$ Project development would not expose people or structures to substantial wildland fire hazards, and impacts would be less than significant. No mitigation is needed.

### 3.9 HYDROLOGY AND WATER QUALITY

The information in this section is based on the preliminary Water Quality Management Plan prepared for the Proposed Project; a complete copy of this report is available for review at the County of Riverside Planning Department.

Would the project:

[^7]
## 3. Environmental Analysis

## 26. Water Quality Impacts

The project site is in the Santa Margarita Watershed and the Warm Springs Valley Subwatershed, which are within the jurisdiction of the San Diego Regional Water Quality Control Board (RWQCB). There are two existing natural drainage channels that flow in a northwest to southeast direction that cross the site. The drainage channel to the north receives runoff from the properties to the north of Keller Road and the site; it flows into two 8 -foot by 4 -foot culverts in the northeast corner of the proposed school site that convey flow beneath SR-79. Proposed development of the Keller Crossing Specific Plan, which is just north of Keller Road and the school site, would include a 24 -inch storm drain along Keller Road that connects to the natural drainage channel and would prevent off-site runoff from entering the school site. The other natural drainage channel cuts across the middle of the school site in a northwest to southeast direction and discharges to a 72 inch culvert beneath SR-79. This natural drainage channel would be altered with construction of the school site. After stormwater drainage flows under SR-79, it continues south and enters Warm Springs Creek, which flows south to Murrieta Creek and eventually discharges into the Santa Margarita River and the Pacific Ocean. There is currently no regional storm drain facilities in the immediate vicinity of the project site.
a) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site.

Less Than Significant Impact. The majority of the potential erosion and siltation impacts would occur during the construction phase (e.g., grading, clearing, excavating, and cut and fill activities) of the proposed project. During construction, the project site would be cleared of vegetation in preparation for grading, which would expose loose soil to potential wind and water erosion. If not controlled, the transport of these materials to local waterways would temporarily increase suspended sediment concentrations and release pollutants attached to sediment particles into the waterways. As previously stated, the project would be required to submit PRDs and a SWPPP to the State Water Resources Control Board for approval prior to the commencement of construction activities. The SWPPP would describe the BMPs to be implemented during project construction to minimize the potential for erosion and siltation.

Project development would include the installation of storm drains in the building complex and parking lot that would be mostly in the eastern half of the site. The drainage pattern would remain essentially the same, with stormwater flow directed to the culverts that pass under SR-79. However, the natural drainage channel that currently bisects the site would be altered with the proposed development.

The operational phase of the project development would contain a number of features to reduce the impact of erosion and siltation, including site design, source control, and treatment control BMPs. These features would be described in the site-specific WQMP; hydromodification BMPs that mimic pre-development flow rates and volumes would also be included, if needed. Implementation of the construction and operational BMPs would minimize erosion and siltation, and impacts would be less than significant. No mitigation is required.

## 3. Environmental Analysis

## b) Violate any water quality standards or waste discharge requirements?

## Less Than Significant Impact.

## Project Construction

Clearing, grading, excavation, and construction activities associated with the proposed project have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

To minimize these potential impacts, the project would be required to comply with the NPDES Construction General Permit (CGP) as well as prepare a Stormwater Pollution Prevention Plan (SWPPP) that requires the incorporation of BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The GCP also requires that prior to the start of construction activities, the project applicant must file Permit Registration Documents (PRDs) with the State Water Resources Control Board, which includes a Notice of Intent (NOI), risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations. Since the project site consists of approximately 8.5 acres, a SWPPP would be required, as described in more detail in Section 3.6.b.

With submittal of the PRDs and implementation of the SWPPP and its associated BMPs throughout the construction phase of the proposed project, anticipated and expected pollutants of concern would be minimized during construction, and construction water quality impacts would be less than significant.

## Project Operation

Once the project has been constructed, urban runoff could include a variety of contaminants that could impact water quality. Runoff from buildings and parking lots typically contains oils, grease, fuel, antifreeze, byproducts of combustion (such as lead, cadmium, nickel, and other metals), fertilizers, herbicides, pesticides, and other pollutants. Precipitation at the beginning of the rainy season may result in an initial stormwater runoff (first flush) with high pollutant concentrations.

As discussed in Section 3.6.b, a project-specific water quality management plan (WQMP) would be submitted to Riverside County for review and approval prior to the issuance of grading plans. The WQMP would describe site design/source control BMPs and treatment control BMPs that would be used to reduce or avoid potential water quality impacts to the maximum extent practicable, and reduce the discharge of pollutants in post-development runoff to the standards of the best available technology economically achievable and the best conventional pollutant control technology. The project would be considered a "priority development project" since it would create and/or replace 10,000 square feet or more of impervious surface. Volumetric treatment control BMPs would mitigate (infiltrate and/or treat) a specific volume of runoff from the project site, based on the 85 th percentile, 24 -hour runoff event. Flow-based treatment control BMPs would mitigate a specific flow rate of runoff based on the 0.2 inch/hour rainfall intensity. The treatment BMPs would be

## 3. Environmental Analysis

designed in accordance with the detailed design procedures and spreadsheets provided in Riverside County's Design Handbook for Low Impact Development Best Management Practices (2011).

Potential hydromodification impacts would also be analyzed in the WQMP, using the Santa Margarita Region Hydrology Manual to demonstrate compliance with the hydrologic performance standard of the Santa Margarita Region Hydromodification Plan. The hydrologic performance standard consists of matching or reducing the flow duration curve of post-development conditions to that of pre-existing, naturally occurring conditions for significant flow events (i.e., 10 percent of the 2 -year runoff event up to the 10 -year runoff event). The project would also need to comply with the sediment supply performance standard, which consists of maintaining the pre-project bed sediment supply to the channel receiving runoff from the project site. The WQMP would address the use of structural BMPs or hydrologic control BMPs to control the postconstruction runoff hydrograph from the site and apply site design principles or sediment supply BMPs to preserve the delivery of bed sediment load to the receiving waters. With proper design, the BMPs would reduce and possibly eliminate any potential hydromodification requirements.

The project would also need to prepare an operation and maintenance plan that specifies the maintenance requirements and inspection schedule for the treatment BMPs as well as ownership and maintenance responsibilities. With the implementation of these LID and BMP features as well as compliance with state, county, and local regulations, the proposed project would have a less than significant impact on water quality during the operational phase. No mitigation is needed.
c) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. The project site is within the northern portion of the Temecula Valley Groundwater Basin. Project development would increase impervious surfaces on the site, thus reducing the area available for infiltration of stormwater into soil. However, the project would implement LID BMPs mimicking the pre-development site hydrology using site design techniques that store, infiltrate, evapotranspire, bio-filter, or detain runoff. Thus, the impact on groundwater recharge would be minimal.

The project would result in an increased water demand but would not involve the extraction or installation of any groundwater wells on the property. The project would be served by the Eastern Municipal Water District (EMWD), which purchases the majority of its water supply as imported surface water from the State Water Project and the Colorado River Aqueduct. EMWD's local supplies include groundwater, desalinated groundwater, and recycled water. Groundwater is pumped from the Hemet/San Jacinto and West San Jacinto areas of the San Jacinto Groundwater Basin. Therefore, the groundwater wells that are owned and operated by EMWD are not in the Temecula Valley Groundwater Basin, and the potentially small reduction in groundwater recharge at the site with an increase in impervious surfaces would not impact EMWD's groundwater supply wells. In addition, EMWD's 2015 Urban Water Management Plan indicates that they have sufficient water supplies to meet demands in their service area in normal, single-dry year, and multiple-dryyear conditions through the 2020-2040 period (RMC 2016).

## 3. Environmental Analysis

Therefore, the project would not impact groundwater supplies, and with the implementation of LID measures that promote infiltration, the potential groundwater impact would be less than significant.
d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. All storm drain facilities would be designed in accordance with Riverside County Flood Control and Water Conservation District design standards to provide protection from a 100year storm event. County flood control policy requires that the rate of stormwater runoff discharged from a project site not be increased as a result of development. The final size and location of all the required drainage systems and water quality features would be determined and described in the site-specific WQMP and hydrology study. Although the treatment control BMPs have not yet been designed, they would most likely consist of bioretention basins that would attenuate peak flows and mimic pre-development runoff conditions so that the capacity of the channels to which runoff is discharged is not exceeded.

Storm drain design in compliance with county design standards and implementation of BMPs that minimize increases in runoff would minimize the potential for stormwater runoff from the site to exceed the capacity of existing or planned storm drainage systems. Therefore, impacts would be less than significant.

The project would not create substantial additional sources of polluted runoff. During the construction phase, the project would be required to prepare a SWPPP, thus limiting the discharge of pollutants from the site. During operation, the project would implement LID and BMP measures that minimize the amount of stormwater runoff and associated pollutants.
e) Place housing within a 100 -year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The northern one-third of the site is in Flood Zone X mapped by the Federal Emergency Management Agency, that is, outside of 100-year and 500-year flood zones. Flood zones have not been mapped on the remainder of the site (FEMA 2016). The proposed project would not develop housing. No impact would occur.

## f) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. No 100-year or 500-year flood zones are mapped on or next to the site, and no impact would occur.

## g) Otherwise substantially degrade water quality?

Less Than Significant Impact. As discussed in detail in Section 3.6.b and Section 3.9.a, BMPs would be implemented across the project site during both construction and operation of the project. These BMPs would control and prevent the release of sediment, debris, and other pollutants into the storm drain system and downstream receiving water bodies. Implementation of BMPs during construction would be in accordance with the provisions of the SWPPP, which would minimize the release of sediment, soil, and other pollutants. Operational BMPs would meet the MS4 Permit requirements and Santa Margarita Region WQMP

## 3. Environmental Analysis

requirements, which include the incorporation of site design, source control, and treatment control measures to treat and control runoff before it enters the storm drain system. With implementation of these BMPs, the potential impact on water quality would be less than significant.
h) Include new or retrofitted stormwater Treatment Control Best Management Practices (BMPs) (e.g. water quality treatment basins, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g. increased vectors or odors)?

Less than Significant Impact. As discussed in detail in Section 3.9.a, BMPs would be implemented across the project site during operation of the project. These BMPs would control and prevent the release of pollutants into the storm drain system and downstream receiving water bodies. Operational BMPs would meet the MS4 Permit requirements and Santa Margarita Region WQMP requirements, which include the incorporation of site design, source control, and treatment control measures to treat and control runoff before it enters the storm drain system. The WQMP includes an assessment of the feasibility of utilizing infiltration BMPs and BMPs that are solely reliant on retention practices. To avoid the negative effects that result from excessive ponding when an infiltration BMP is utilized, the 2014 Water Quality Management Plan for the Santa Margarita Region of Riverside County requires that the tested pre-development infiltration rates must be greater than 1.6 inches per hour. Per the Infiltration Report prepared for the project by Inland Foundation Engineering, Inc., the required minimum infiltration rate is not met. Infiltration BMPs are not proposed for this project. Impacts would be less than significant and no mitigation is required.

## 27. Floodplains

a) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact. The project would result in an increase in the amount of impervious surfaces as compared to existing conditions, which could result in a higher volume of stormwater exiting the site. However, TVCS would install treatment control BMPs, per the requirements of the MS4 Permit and Santa Margarita Region WQMP, which would reduce peak flows and infiltrate some of the stormwater into the ground. Volumetric treatment control BMPs would mitigate (infiltrate and/or treat) a specific volume of runoff from the site, based on the 85th percentile, 24-hour runoff event. Flow-based treatment control BMPs would mitigate a specific flow rate of runoff based on the 0.2 inch/hour rainfall intensity. The treatment BMPs would be designed in accordance with the detailed design procedures and spreadsheets provided in Riverside County's Design Handbook for Low Impact Development Best Management Practices (2011). Proposed hydromodification impacts would also be analyzed in the WQMP, using the Santa Margarita Region Hydrology Manual to demonstrate compliance with the hydrologic performance standard of the Santa Margarita Region Hydromodification Plan.

Prior to the start of grading and construction activities, a project-specific WQMP would be prepared that describes in detail the existing hydrology and drainage conditions, projected peak flows, characteristics of stormwater runoff water quality, and proposed BMPs. The report would document the proper size and location of all BMPs in accordance with MS4 and county stormwater requirements. In addition, the Riverside

## 3. Environmental Analysis

County Flood Control and Water Conservation District design standards require that the rate of stormwater runoff discharged from a project site not be increased as a result of development.

With proper design, the BMPs would reduce any potential for flooding and stormwater runoff hydrographs would mimic pre-development conditions. Thus, the potential for significant increases in stormwater runoff would be minimized and potential flooding impacts would be less than significant. No mitigation is needed.

## b) Changes in absorption rates or the rate and amount of surface runoff?

Less than Significant Impact. The overall area of the parcels where the project will be constructed is approximately 14.6 acres. The project will be constructed over approximately 8.6 acres. The remaining 6 acres will not be impacted by the proposed development. The project would result in an increase in the amount of impervious surfaces as compared to existing conditions, which could result in increased stormwater volume exiting the site. The project incorporates site design, source control, and treatment control BMPs to address stormwater runoff. The existing drainage patterns for the site will not be modified as a result of the project. A majority of the runoff from the site will occur over impervious surfaces that will discharge into the existing off-site storm drain system. Other flows will drain into proposed playfield areas that will mimic the existing condition and allow for onsite retention.
c) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The project site is not in a dam inundation area or in an area protected from 100 -year floods by levees. No impact would occur and no mitigation is needed.
d) Changes in the amount of surface water in any water body?

No Impact. Project development would not change the amount of surface water in any water body. No impact would occur and no mitigation is needed.

### 3.10 LAND USE AND PLANNING

Would the project:

## 28. Land Use

a) Result in a substantial alteration of the present or planned land use of an area?

Less than Significant Impact. Project development would substantially change the land use onsite, from vacant and residential to a charter school for 600 students. The existing zoning and General Plan designations for the project site are both Rural Residential (R-R); the R-R General Plan designation permits development of single-family residences with minimum density of one dwelling unit per five acres. Schools are permitted by Riverside County in any zone with a Public Use Permit. Schools are expected and necessary community facilities within residential land use designations. Thus, the development of schools in the affected part of

French Valley was foreseen when the area was designated R-R. Impacts would be less than significant and no mitigation is required.
b) Affect land use within a city sphere of influence and/or within adjacent city or county boundaries?

Less than Significant Impact. The project site is in the Sphere of Influence (SOI) of the City of Murrieta (Murrieta 2014). The City of Murrieta's General Plan Land Use Map (2011) uses Riverside County land use designations for land in the City's SOI (Murrieta 2011). The site is zoned Rural Residential (RR) by the City of Murrieta, permitting single-family residences on lot sizes of at least 2.5 acres per residence. Schools are permitted in the RR zoning district with a Conditional Use Permit. As with the proposed land use relative to the Riverside County zoning, schools are expected and necessary community facilities within residential zones; and the development of schools in the affected part of French Valley was foreseen when the area was zoned RR. Development of the proposed school would not have a substantial adverse effect on land use regulation in the City of Murrieta's SOI, and impacts would be less than significant. No mitigation is needed.

## 29. Planning

## a) Be consistent with the site's existing or proposed zoning?

No Impact. The existing zoning and General Plan designations for the project site are both Rural Residential (R-R); the R-R Zone permits development of single-family residences with a maximum density of two units per acre. Schools are permitted by Riverside County in any zone with a Public Use Permit. Project development would not conflict with zoning or General Plan designations for the site, and no impact would occur. No mitigation is required.

## b) Be compatible with existing surrounding zoning?

No Impact. Surrounding parcels are zoned: RR to the northeast, north, and west; C-1/C-P (General Commercial) to the south; and, southeast opposite SR-79, SP (Winchester 1800 Specific Plan; the part of the Specific Plan area opposite SR-79 is designated for Medium-High Density Residential Use in the Specific Plan). ${ }^{14}$ Development of the proposed school would be compatible with surrounding zoning, and no adverse impact would occur. No mitigation is needed.

## c) Be compatible with existing and planned surrounding land uses?

No Impact. Existing surrounding land uses are rural residential uses to the west and north; a single-family home abuts the northern site boundary on west. The project site is surrounded by vacant land to the south and by vacant land and agricultural uses to the east across SR-79. Planned land uses as reflected in Riverside County zoning designations are described above in Section 29.b. The proposed school would be compatible with both existing and planned land use designations, and no adverse impact would occur. No mitigation is required.

[^8]
## 3. Environmental Analysis

## d) Be consistent with the land use designations and policies of the General Plan (including those of any applicable Specific Plan)?

No Impact. The project site is not in a Specific Plan area. The proposed school would be consistent with the Riverside County General Plan land use designation for the site, as described above in Section 29.a.

Riverside County sets forth policies pertaining to development of transportation infrastructure and to trip generation compared to roadway capacity in the Highway 79 Policy Area, an unincorporated area in southwestern Riverside County within the Southwest Area Plan of the County's General Plan.

Policy 1 states
Accelerate the construction of transportation infrastructure in the Highway 79 Policy Area. The County shall require that all new development projects demonstrate adequate transportation infrastructure capacity to accommodate the added traffic growth. The County shall coordinate with cities adjacent to the policy area to accelerate the usable revenue flow of existing funding programs, thus assuring that transportation infrastructure is in place when needed.

Project consistency: Project development would include the following roadway improvements:

- Construct Flossie Way at its ultimate width as a local road per County of Riverside design standards with a right-of-way of 60 feet, including a sidewalk on the eastern side of the road along the school property, between the project's western boundary and the project's access driveway.
- The intersection of Flossie Way/Koon Street/Pourroy Road shall form a 4-leg intersection with Flossie Way.

Policy 2 states
Establish a program in the Highway 79 Policy Area to ensure that overall trip generation does not exceed system capacity and that the system operation continues to meet Level of Service standards. In general, the program would establish guidelines to be incorporated into individual Traffic Impact Analysis that would monitor overall trip generation from residential development to ensure that overall within the Highway 79 Policy Area development projects produce traffic generation at a level that is $9 \%$ less than the trips projected from the General Plan traffic model residential land use designations. Individually, projects could exceed the General Plan traffic model trip generation level, provided it can be demonstrated that sufficient reductions have occurred on other projects in order to meet Level of Service standards.

Project consistency: the proposed project is not a residential project and therefore Policy 2 is inapplicable.
The proposed project would be consistent with applicable Highway 79 Policy Area policies. No impact would occur and no mitigation is needed.
e) Disrupt or divide the physical arrangement of an established community (including a lowincome or minority community)?

No Impact. The project site is surrounded by rural residential uses, vacant land, and agricultural uses. There is no residential community next to the site that would be divided by the proposed school; in addition, the site is private property and no access way linking residential areas passes through the site. No impact would occur and no mitigation is required.

### 3.11 MINERAL RESOURCES

## 30. Mineral Resources

a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

Less Than Significant Impact. No Mineral Land Classification mapping on the northern part of the project site has been conducted by the California Geological Survey (CGS). The southern part of the site is mapped Mineral Resource Zone 3 (MRZ-3) by the CGS, indicating that the area contains mineral resources of undetermined significance (CGS 2014b, 2014c). The nearest mine to the project site mapped on the Mines Online database by the Office of Mine Reclamation is the East Benton Pit, an active sand and gravel mine about 6.5 miles to the southeast (OMR 2016). Project development would not cause a loss of availability of known mineral resources valuable to the region and the state, and impacts would be less than significant.
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The project site is not designated as a mining site in the Riverside County General Plan. Project development would not cause a loss of availability of a mining site designated in the Riverside County General Plan, and no impact would occur.
c) Be an incompatible land use located adjacent to a State classified or designated area or existing surface mine?

No Impact. The project site is not adjacent to a Mineral Resource Sector - that is, is an area currently permitted for mining and where land uses are compatible with mining - designated by the California Geological Survey (CGS 2014d). The nearest mine is 6.5 miles from the site. No impact would occur and no mitigation is required.

## d) Expose people or property to hazards from proposed, existing or abandoned quarries or mines?

No Impact. No existing or former mines on or next to the site were identified in the Phase I ESA for the project.

## 3. Environmental Analysis

### 3.12 NOISE

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal, state, and city governments have established criteria to protect public health and safety and to prevent the disruption of certain human activities, such as classroom instruction, communication, or sleep. Additional information on noise and vibration fundamentals, existing regulations, and pertinent technical standards, project-specific background information, construction effects calculation worksheets, and project-generated traffic operations noise modeling results are contained in the Appendix G of this Initial Study.

## Existing Conditions

The proposed buildout of the Temecula Valley Charter School is to be located in the census-designated-place of French Valley in unincorporated Riverside County. The proposed project site is on the west side of SR-79 between Keller Road and Pourroy Road. The site encompasses approximately 15 acres and is mostly undeveloped except for residential uses in the western part of the project site. This residential area consists of two single-family residences, one garage, and two above-ground water tanks. The garage in the south-central part of the site, and the mobile home are to be demolished at commencement of the project, and the vacant single-family residence in the northwestern part of the site would be left as is.

The major existing noise source on the proposed project site is traffic along SR-79. Other noise sources include nearby airports/heliports and residences in the vicinity of the project (e.g., people talking and general property maintenance).

## Sensitive Receptors

The proposed project site is on a busy thoroughfare. It is surrounded by rural residences to the west and north, vacant land to the south, and a mix of vacant and agricultural land to the east (beyond SR-79). The nearest offsite residence is a single-family home just north of the western part of the site. There are also multiple single-family residences between 200 and 500 feet north of the proposed project site and approximately 350 feet west of the proposed project site. This residential land surrounding the project site is considered rural residential-i.e., fewer than 20 residences within a 1,000 -foot radius around the project site.

Would the project result in:

## 31. Airport Noise

a) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no public-use airports within two miles of the project site. The closest facility, French Valley Airport, is 4 miles southwest of proposed project site (AirNav 2016). Project development would not
expose people onsite to excessive airport-related noise levels. Therefore, no impact would occur and no mitigation measures are necessary.
b) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. Pines Airpark Airport is a private airport that is approximately 2 miles to the northwest of the proposed project site (AirNav 2016). Operations at this private aircraft facility may at times be audible at the site, but the relatively limited and sporadic use of this airport for corporate travel or other limited uses, coupled with the distance between it and the project site, would result in negligible amounts of community noise at the campus. Therefore, development of the project would not expose people onsite to excessive noise levels from aircraft approaching or departing this airport, and no impact would occur. No mitigation is required.

## 32. Railroad Noise

a) For a project within 0.25 mile of a railroad track, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The nearest railroad track to the project site is a BNSF Railway track in the City of Perris about 12 miles to the northwest (FRA 2017). Project development would not generate railroad noise, and no impact would occur. No mitigation is needed.

## 33. Highway Noise

a) Would project-generated traffic cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

## No Impact.

## Applicable Standards

## County of Riverside Noise Standards

The proposed project site is in the unincorporated, census-designated-place of French Valley. Since this project site is outside of the jurisdiction of any city's municipal code, this project will use the Riverside County Noise Element and County Code.

The County of Riverside noise regulations are implemented and enforced through the County Code and are intended to establish county-wide standards to regulate noise. Section 9.52 .101 of the Riverside County Noise Regulation states, "These regulations are not intended to establish thresholds of significance for the purpose of any analysis required by the CEQA and no such thresholds are hereby established." Due to this clause, the applicable noise regulations used for this study will be taken from the County of Riverside Noise Element.

Beyond the basic noise level regulations, County Code section 15.04 .020 contains standards and limits that deal with construction noise. Details of these criteria and related impacts are discussed under 3.12(d), below.

## 3. Environmental Analysis

## County of Riverside Noise Element

The noise element is in Chapter 7 of the Riverside County General Plan. The noise element provides a systematic approach to identifying and appraising noise problems in the community, quantifying existing and projected noise levels, addressing excessive noise exposure, and planning for the regulation of noise. It established quantified land use compatibility guidelines that coincide with the State of California Community Noise and Land Use Compatibility Guidelines and lists a number of policies related to noise compatibility. Policy N 1.3 discourages schools or residential land uses in areas in excess of 65 CNEL. Any land use that is exposed to noise levels higher than 65 CNEL will require noise attenuation measures. Policy N 2.2 requires a qualified acoustical specialist to prepare acoustical studies for proposed noise-sensitive projects in noiseimpacted areas in order to mitigate existing noise.

However, it is important to note that with the recent California Supreme Court decision regarding the assessment of the environment's impacts on proposed projects ( $C B L A v B A A Q M D$, issued December 17, 2015), ${ }^{15}$ it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions onto any given project. For noise, the application of this ruling means that the analysis of traffic, rail, and aircraft noise effects at the project site-in terms of land use compatibility-is no longer part of CEQA. Therefore, exterior noise effects from nearby roadways relative to land use compatibility of the project is no longer a topic for impact evaluation under CEQA, and no statement of impact significance is germane.

## Stationary Noise Sources

Policy N 2.3 includes standards that present maximum allowable noise levels for stationary sources. Exterior and interior noise must be mitigated to the levels listed in Table 10 to the extent feasible.

Table 10 Stationary Source Land Use Noise Standards

| Land Use (Residential) | Interior Standards (dB) | Exterior Standards (dB) |
| :---: | :---: | :---: |
| 10:00 p.m. to 7:00 a.m. | 40 Leq (10 minute) | 45 Leq (10 minute) |
| 7:00 a.m. to 10:00 p.m. | 55 Leq (10 minute) | 65 Lmax (10 minute) |

[^9]
## Mobile Noise Sources

The Riverside County Noise Element contains qualitative policies and mitigation measures for vehicular noise sources. Relevant policies are:

- $\mathbf{N}$ 9.3. Require development that generates increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses to provide for appropriate mitigation measures.
- N 9.6. Require that all future exterior noise forecasts use Level of Service C, and be based on designed road capacity or 20 -year projection of development (whichever is less) for future noise forecasts.

[^10]
## 3. Environmental Analysis

- N 9.7. Require that field noise monitoring be performed prior to siting to any sensitive land uses along arterial roadways. Noise level measurements should be of at least 10 minutes in duration and should include simultaneous vehicle counts so that more accurate vehicle ratios may be used in modeling ambient noise levels.

In lieu of applicable quantitative standards for mobile noise sources, the following standards were used for the purpose of this analysis. With respect to projected increases, noise impacts can be broken down into three categories. The first is "audible" impacts, which refer to increases in noise level that are perceptible to humans. Audible increases in general community noise levels generally refer to a change of 3 dB or more since this level has been found to be the threshold of perceptibility in exterior environments. The second category, "potentially audible" impacts, refers to a change in noise level between 1 and 3 dB . This range of noise levels was found to be noticeable to sensitive people in laboratory environments. The last category includes changes in noise level of less than 1 dB that are typically "inaudible" to the human ear except under quiet conditions in controlled environments. Only "audible" changes in noise levels at sensitive receptor locations (i.e., 3 dB or more) are considered potentially significant. Note that to create a 3 dB increase in traffic-generated noise levels, a doubling of traffic flows (i.e., 10,000 vehicles per day to 20,000 per day) would be needed.

## Project-Related Roadway Noise

## A - Generally Acceptable (project noise impacts)

The proposed project is expected to add a maximum of approximately 600 students and 40 staff to the project site at ultimate buildout. The expected increase in traffic due to new enrollment was used in the traffic study that analyzed potential impacts due to traffic increases. These expected traffic conditions were used in the traffic noise calculations shown in Table 10.

Traffic noise analysis was conducted by PlaceWorks on the major roadways in the vicinity of the project area. Based on the FHWA-RD77-108 roadway noise calculation method (FHWA 1978), noise levels at segments of SR-79, Pourroy Road, and other nearby roadways were analyzed with respect to existing traffic conditions and to traffic conditions estimated at full buildout of the project in 2018. These values were compared, and a noise level increase of 3 dB or more would signify a potential impact.

In order to assess the potential for mobile-source noise impacts, it is necessary to determine the noise currently generated by vehicles traveling through the project area. Average daily traffic volumes were based on the daily traffic volumes provided by PlaceWorks. Modeling indicated that average noise levels along arterial segments currently range from approximately 40 dBA to 73 dBA CNEL at a distance of 50 feet from the centerline of the road. Noise levels for existing conditions along analyzed roadways are presented in Table 11.

## 3. Environmental Analysis

Table 11 Existing and Future Noise Level Estimates

| Roadway | Segment | CNEL at 50 feet (dBA) |  |  | ProjectContribution(dB) | Potential Impact? |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Existing | 2018 With Project | Overall Increase <br> (dB) |  |  |
| Winchester Rd (SR-79) | N of Keller Rd | 73.4 | 74.5 | 1.1 | 0.0 | No |
| Winchester Rd (SR-79) | S of Keller Rd | 73.4 | 76.5 | 3.1 | 0.0 | No |
| Keller Road | E of Winchester Rd | 40.5 | 53.0 | 12.5 | 0.2 | No |
| Keller Road | W of Winchester Rd | 40.0 | 62.4 | 22.4 | 0.0 | No |
| Winchester Rd (SR-79) | N of Pourroy Rd | 73.4 | 76.5 | 3.0 | 0.0 | No |
| Winchester Rd (SR-79) | S of Pourroy Rd | 73.8 | 77.4 | 3.6 | 0.1 | No |
| Pourroy Road | E of Winchester Rd | 61.5 | 66.1 | 4.6 | 0.1 | No |
| Abelia Street | W of Winchester Rd | 56.8 | 70.3 | 13.5 | 0.2 | No |
| Winchester Rd (SR-79) | N of Pourroy Rd | 74.0 | 77.5 | 3.5 | 0.1 | No |
| Winchester Rd (SR-79) | S of Pourroy Rd | 74.3 | 76.9 | 2.6 | 0.0 | No |
| Whisper Heights | E of Winchester Rd | 58.8 | 63.6 | 4.8 | 0.1 | No |
| Pourroy Road | W of Winchester Rd | 58.3 | 59.0 | 0.7 | 0.0 | No |
| Winchester Rd (SR-79) | N of Skyview Rd | 74.1 | 76.9 | 2.8 | 0.0 | No |
| Winchester Rd (SR-79) | S of Skyview Rd | 74.2 | 76.6 | 2.4 | 0.0 | No |
| Jean Nicholas Road | E of Winchester Rd | 49.5 | 50.0 | 0.5 | 0.0 | No |
| Skyview Road | W of Winchester Rd | 61.1 | 64.4 | 3.3 | 0.0 | No |
| Winchester Rd (SR-79) | N of Thompson Rd | 74.2 | 76.5 | 2.3 | 0.0 | No |
| Winchester Rd (SR-79) | S of Thompson Rd | 76.0 | 77.2 | 1.3 | 0.0 | No |
| Max Gillis Blvd | E of Winchester Rd | 66.8 | 69.0 | 2.2 | 0.0 | No |
| Thompson Road | W of Winchester Rd | 69.6 | 71.4 | 1.9 | 0.0 | No |
| Winchester Rd (SR-79) | N of Benton Rd | 76.0 | 77.1 | 1.2 | 0.0 | No |
| Winchester Rd (SR-79) | S of Benton Rd | 75.9 | 76.7 | 0.8 | 0.0 | No |
| Benton Road | E of Winchester Rd | 69.9 | 71.2 | 1.3 | 0.0 | No |
| Pat Road | S of Pourroy Rd | 55.9 | 58.1 | 2.2 | 0.7 | No |
| Pourroy Road | E of Pat Road Rd | 54.5 | 67.0 | 12.5 | 0.2 | No |
| Pourroy Road | W of Pat Road Rd | 47.6 | 69.7 | 22.1 | 0.3 | No |
| Elliot Road | $N$ of Jean Nicholas Rd | 57.5 | 59.1 | 1.7 | 0.2 | No |
| Jean Nicholas Road | E of Elliot Rd | 63.4 | 67.6 | 4.2 | 0.0 | No |
| Jean Nicholas Road | W of Elliot Rd | 64.6 | 68.4 | 3.8 | 0.0 | No |
| Pourroy Road | N of Skyview Rd | 65.2 | 71.1 | 5.9 | 0.1 | No |
| Pourroy Road | S of Skyview Rd | 64.7 | 70.3 | 5.6 | 0.1 | No |
| Skyview Road | W of Pourroy Rd | 60.5 | 64.0 | 3.5 | 0.0 | No |
| Pourroy Road | N of Thompson Rd | 65.6 | 69.1 | 3.5 | 0.1 | No |
| Pourroy Road | S of Thompson Rd | 66.3 | 68.9 | 2.6 | 0.0 | No |
| Thompson Road | E of Pourroy Rd | 49.0 | 49.8 | 0.9 | 0.0 | No |
| Thompson Road | W of Pourroy Rd | 62.6 | 65.1 | 2.5 | 0.0 | No |
| Source: Noise and Vibration Analysis, Appendix G to this Initial Study. Levels calculated by FHWA-RD77-108 calculation method. |  |  |  |  |  |  |

Segments would experience negligible long-term traffic noise increases due to project implementation. There are major overall increases between existing conditions and future conditions, but these are due to ambient growth and the cumulative contributions of other projects in the area. Based on this traffic noise analysis, the worst-case roadway noise increase due to project implementation would result from traffic increases on Pat Road, south of Pourroy Road. Even so, this traffic increase is expected to result in a roadway noise increase of 0.7 dB . All increases in noise levels at road segments in the vicinity of the project site, including on Pat Road, would fall below the threshold of human perceptibility. Thus, it is not anticipated that implementation of the proposed project would result in audible increases in traffic-related noise along the surrounding roadways. Exposure of persons to noise levels in excess of established thresholds from project-related roadway noise would be less than significant.

## Noise Compatibility

## B - Conditionally Acceptable

It is also important to note that the facades of the project buildings that would face SR-79 are expected to experience traffic-generated noise levels of approximately 69 dBA CNEL. ${ }^{16}$ This predicted result is within the "conditionally acceptable" classification in the county noise element for school land uses. ${ }^{17}$ As mentioned above and per the CBLA $\vee B A A Q M D$ ruling, land use compatibility is no longer a CEQA issue. Nonetheless, this ostensible incompatibility would need to be addressed prior to the issuance of building permits for the project. No significant impact under CEQA would occur, and no mitigation is required.

## 34. Other Noise

a) Would the project include stationary sources of noise generating a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact. The project does not propose a land use that would generate substantial noise that could affect people on and near the site, such as an industrial facility or outdoor music venue.

Heating, ventilation, and air conditioning equipment on top of the proposed classroom buildings would be placed within appropriate sound enclosures or parapets so that their operations would not be notably different than existing conditions in and around the proposed area of improvements and would not exceed the county's exterior noise standards. Noise from such stationary sources would be regulated through the Riverside County Noise Element. No significant permanent noise increases due to project-related activities would occur, and no mitigation measures are necessary.

[^11]
## 3. Environmental Analysis

## 35. Noise Effects on or by the Project

a) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. Project traffic noise impacts relative to existing ambient noise levels would be less than significant, as substantiated above in Section 33.a. Project development would not cause a considerable noise impact from stationary sources, as substantiated above in Section 34.a.
b) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

## Less than Significant Impact.

## Pertinent Construction Noise Standards

To limit construction noise on sensitive receptors, the Riverside County Code includes permitted hours of construction in Section 15.04.020, General Regulations. Construction noise is exempt from county noise regulations when construction activities take place between the hours of 6 AM and 6 PM . Exceptions to these standards are allowed only with the written consent of the building official.

The Riverside County Noise Element contains qualitative policies and mitigation procedures for temporary construction. These policies are:

- $\mathbf{N}$ 13.1. Minimize the impacts of construction noise on adjacent uses within acceptable practices.
- $\mathbf{N}$ 13.2. Ensure that construction activities are regulated to establish hours of operation to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- N 13.3. Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses by requiring the developer to submit a construction-related noise mitigation plan to the County for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through the use of such methods as:
a. Temporary noise attenuation fences;
b. Preferential location of equipment; and
c. Use of current noise suppression technology and equipment.
- $\mathbf{N}$ 13.4. Require that all construction equipment utilizes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.


## 3. Environmental Analysis

## Impact Analysis:

Two types of short-term noise impacts could occur during construction: (1) mobile-source noise from transport of workers, material deliveries, and debris and soil haul and (2) stationary-source noise from use of construction equipment. Existing uses surrounding the project site would be exposed to construction noise. This school is a new development, so there would be no classes taking place at the proposed school site during the entire construction period. Therefore, there would be no onsite sensitive receptors during construction and no noise control measures are necessary.

## Construction Vehicles

The transport of workers and equipment to the construction site would incrementally increase noise levels along site access roadways. Typically for this type of project, the mass grading soil haul phase would generate the highest traffic increases from construction vehicles (i.e., haul-in/haul-out truck trips, worker commuting, and other deliveries). Since the project site has been previously graded, the site is expected to be balanced, and no soil export or import is expected to be needed. Thus, any vehicle trips due to construction activities (e.g. for the aggregate of workers, vendors, deliveries, etc.) would be marginal compared to vehicle flows along SR-79 (which has average daily traffic of approximately 19,640). ${ }^{18}$ This would result in an inaudible noise increase at sensitive receptors, ${ }^{19}$ and would, therefore, have a less than significant impact on noise receptors along the truck routes.

While individual construction vehicle pass-bys may create momentary noise levels of up to approximately 85 $\mathrm{dBA}\left(\mathrm{L}_{\max }\right)$ at 50 feet from the vehicle, these occurrences-although potentially audible for a few secondswould generally be infrequent. Due to the infrequency of events, their relatively short-lived durations, and their commonality with existing truck pass-bys, construction vehicle movement noise would be less than significant.

## Construction Equipment

Noise generated during construction is also based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. Each stage of construction involves the use of different kinds of construction equipment and, therefore, has its own distinct noise characteristics. Noise levels from construction activities are dominated by the loudest piece of construction equipment. The dominant noise source is typically the engine, although work-piece noise (such as dropping of materials) can also be noticeable. Noise levels from project-related construction activities were calculated from the simultaneous use of all applicable construction equipment at spatially averaged distances (i.e., from the center of the general construction area) to the property line of the closest residences. At the time of this analysis, the specific equipment list for each construction phase was unavailable. In lieu of such details, construction equipment lists and phasing for a typical project of this size were used in the analyses.

[^12]
## 3. Environmental Analysis

Construction activities would increase noise levels on and near the project site above existing levels. Noise produced from construction equipment items is commonly held to decrease at a rate of at least 6 dB per doubling of distance-conservatively ignoring other attenuation effects from air absorption, ground effects, and/or shielding/scattering effects. ${ }^{20}$ For example, a dozer that generates 85 dBA at 50 feet would measure 79 dBA at 100 feet, 73 dBA at 200 feet, 67 dBA at 400 feet, and 61 dBA at 800 feet.

The area in the vicinity of the project site consists of rural-residential uses. The closest sensitive residential uses to the project site are the single-family residence approximately 380 feet to the north of the proposed project site, another single-family residence approximately 480 feet to the north, and a single-family residence approximately 900 feet to the west of the proposed project. The center of the project site was used as the best representation of spatially averaged activities throughout the construction zones. Although construction may occur across the entire site, the center of the project best represents the potential average constructionrelated noise levels to the various sensitive receptors during the overall construction portion of the project. Moreover, the existing building demolition and the erection of the proposed project are primarily located toward the center of the 14.6 -acre site, thus providing some setback from the surrounding land uses.

Total project construction is projected to last approximately 12 months, with site preparation and grading lasting approximately 2 months. The associated, aggregate sound levels—grouped by construction activityare summarized in Table 12.

Table 12 Project-Related Construction Noise Levels

| Construction <br> Activity Phase | Sound Level at Various Distances from Construction Activities, dBA Leq |  |  |
| :--- | :---: | :---: | :---: |
|  | Residence North of <br> Project Site <br> $(380$ ft.) | Residence North of <br> Project Site <br> $(480 \mathrm{ft})$ | Residence West of <br> Project Site <br> $(800 \mathrm{ft})$. |
| Site Preparation | 67 | 65 | 60 |
| Grading | 70 | 68 | 63 |
| Utility Trenching | 58 | 56 | 51 |
| Construction | 65 | 63 | 59 |
| Paving | 63 | 61 | 57 |
| Architectural Coating | 56 | 54 | 50 |
| Notes: Calculations performed with the FHWA RCNM calculation method; included in Appendix G. |  |  |  |

As shown in this table, the nearest off-campus receptors would be the residential uses that are approximately 380 feet to the north of the proposed project area. At this distance, composite construction noise would be reduced to a conservatively estimated level of approximately $70 \mathrm{dBA} \mathrm{L}_{\text {eq }}$ (due to distance attenuation alone). Since construction activities would be limited to relatively small equipment (i.e., bulldozers, grading tractors, dump trucks, loaders, back hoes, pavers, and a crane) and would take place during the county's allowable hours of construction, construction noise impacts would be less than significant and no mitigation measures are necessary.

[^13]c) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. Applicable noise standards, project roadway noise impacts, and project highway noise compatibility are all addressed above in Section 33, Highway Noise. Project stationary noise impacts are addressed above in Section 34, Other Noise. Project roadway noise and stationary noise impacts would both be less than significant with no mitigation required; noise compatibility is no longer a CEQA issue and therefore no impact determination is made.
d) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

## Less than Significant Impact.

## Applicable Standards

## Pertinent Vibration Standards

The Riverside County Noise Element includes policies that restrict vibration. Policy N 16.1 restricts the placement of sensitive land uses in proximity to vibration-producing land uses. As stated in policy N 16.2, residential areas and schools are considered land uses sensitive to vibration. The project site is not exposed to perceptible groundborne vibrations because there are no notable sources of vibrational energy in the vicinity of the project site (such as industrial uses or heavy-freight railways). Note that according to Caltrans's general experience, traffic-generated vibrations are almost never associated with damage to structures near the highway (Caltrans 2002). Proposed buildings would be approximately 150 feet from the roadway and beyond the range of potential roadway vibration impacts. Construction-generated vibrations, however, can exceed the point of architectural damage.

In lieu of applicable quantitative vibration standards, the standards adopted by the Federal Transit Administration (FTA) to evaluate vibration from construction equipment are used. According to the FTA's Noise and Vibration Impact Guidelines (2006), vibrations generated by project-related construction activities exceeding 0.2 peak particle velocity (PPV) in inches per second (in/sec) would be strong enough to cause vibration-induced architectural damage to typical wood-framed buildings. Residents in nearby structures may experience vibration-induced annoyance when project-related construction activities exceed the FTA's daytime vibration criteria of 78 VdB (vibration decibel).

Further, the County Code includes permitted hours of construction in Section 15.04.020, General Regulations. Construction noise is exempt from county noise regulations according to the following portion of code: Whenever a construction site is within one-quarter of a mile of an occupied residence or residences, no construction activities shall be undertaken between the hours of 6 p.m. and 6 a.m. Exceptions to these standards shall be allowed only with the written consent of the building official. The generation of construction noise other than as permitted in this section, shall be a violation of this title, and the building official or his or her designee shall have the authority to undertake enforcement actions in accordance with the procedures, remedies and penalties for violations as provided for in Riverside County Ordinance No. 725 (Chapter 1.16 of this code), which is incorporated into this chapter by reference.

## 3. Environmental Analysis

## Impact Analysis

## Operations Vibration Impacts

The operation of the proposed project would not include any long-term vibration sources. Thus, no significant vibration effects from operations sources would occur and no mitigation measures are required.

## Construction Vibration Impacts

Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to the construction site. Table 12 lists vibration levels for typical construction equipment (not all of which is expected to be used at the proposed project site).

As shown in Table 13, vibration generated by certain, vibration-intensive construction equipment has the potential to be substantial (i.e., exceeding the FTA criteria for structural damage) if those particular items are employed at any given construction site and in proximity to sensitive receptors. However, groundborne vibration is almost never annoying to people who are outdoors, so it is usually evaluated in terms of indoor receivers, along with the associated distances to receptor structures (FTA 2006).

Table 13 Vibration Levels for Typical Construction Equipment

| Equipment | Approximate Velocity Level at 25 Feet (VdB) | Approximate RMS 1 Velocity at 25 Feet (in/sec) |
| :---: | :---: | :---: |
| Pile Driver (impact) Upper Range | 112 | 1.518 |
| Pile Driver (impact) Lower Range | 104 | 0.644 |
| Pile Driver (sonic) Upper Range | 105 | 0.734 |
| Pile Driver (sonic) Lower Range | 93 | 0.170 |
| Large Bulldozer | 87 | 0.089 |
| Caisson Drilling | 87 | 0.089 |
| Jackhammer | 79 | 0.035 |
| Small Bulldozer | 58 | 0.003 |
| Loaded Trucks | 86 | 0.076 |
|  FTA - Human Annoyance (Residential Daytime) <br>  FTA - Human Annoyance (Residential Nighttime) <br> Criteria FTA - Human Annoyance (Office) | $\begin{aligned} & 78 \\ & 72 \\ & 84 \end{aligned}$ | - |
| FTA - Structural Damage (Residential) FTA - Structural Damage (Office) | - | $\begin{aligned} & 0.20 \\ & 0.30 \\ & \hline \end{aligned}$ |

Source: FTA 2006.
1 RMS velocity calculated from vibration level (VdB) using the reference of 1 microinch/second.

## 3. Environmental Analysis

For the specifics of the proposed project, the construction would entail grading the existing undeveloped land and constructing new campus buildings, play fields, and parking lots. The use of high-vibration equipment, such as pile drivers or vibratory rollers, is not anticipated. The campus site has been previously graded and a balanced soil volume is expected. Thus, relatively little heavy earthwork would be required during the excavation sub-phase to create the desired pads for the new buildings. This would mean that relatively little use of vibration-inducing construction equipment such as excavators, bulldozers, graders, jackhammers, and loaders/backhoes would be needed. Following the mass excavation phase, construction equipment for the building erection phase would primarily employ items that would not generate substantial levels of vibration, such as forklifts, cranes, and haul trucks. Construction activities are proposed to commence in late summer of 2017 and would be completed in one general phase lasting 12 months. The site preparation and grading portions of the construction (most vibration intensive activities) are anticipated to take place over approximately the first 2 months of construction. This school is a new development, so no classes would be taking place at the proposed school site during the entire construction period. There would be no on-campus sensitive receptors to be affected during construction, and no vibration control measures would be necessary.

## Vibration-Induced Architectural Damage

The threshold at which there is a risk of architectural damage to typical wood-framed buildings is $0.20 \mathrm{in} / \mathrm{sec}$ or $0.30 \mathrm{in} / \mathrm{sec}$ for engineered concrete and masonry buildings (FTA 2006). Building damage is not normally a factor unless the project requires blasting and/or pile driving. No blasting, pile driving, or hard rock ripping/crushing activities are anticipated for the proposed project. Small construction equipment generates vibration levels less than 0.1 PPV in/sec at 25 feet away (FTA 2006).

Table 14 shows the peak particle velocities of some common construction equipment and (loaded) haul trucks. Such items would be expected to be employed at the proposed project site. Since architectural damage from construction vibration sources can be a one-time event and since such damage is dependent on the soil type, ground strata, and receptor building construction, vibration damage distances are measured from the nearest likely location at the construction site to the façade of the nearest receptor building.

Table 14 Architectural Damage Vibration Levels from Construction Equipment

| Equipment | Peak Particle Velocity in inches per second |  |  |
| :---: | :---: | :---: | :---: |
|  | Residence to north of project site ( 150 ft .) with limit of 0.20 | Residence to north of project site ( 250 ft .) with limit of 0.20 | Residence to west of project site ( 500 ft .) with limit of 0.20 |
| Vibratory Roller | 0.014 | 0.007 | 0.002 |
| Large Bulldozer | 0.006 | 0.003 | 0.001 |
| Excavator, Backhoe ${ }^{1}$ | 0.006 | 0.003 | 0.001 |
| Loaded Trucks | 0.005 | 0.002 | 0.001 |
| Jackhammer | 0.002 | 0.001 | <0.001 |
| Small Bulldozer | <0.001 | <0.001 | <0.001 |
| Source: FTA 2006. <br> Bold numbers indicate values that exceed FTA architectural damage criteria. <br> ${ }^{1}$ These items are not on the original FTA list, but are conservatively taken to be comparable to a Large Bulldozer for vibration emissions. |  |  |  |

## 3. Environmental Analysis

As shown in Table 12, project-related construction activities would not result in vibration levels at nearby structures that exceed the FTA's pertinent criteria for vibration-induced architectural damage (i.e., 0.20 PPV in/sec for residential land uses or 0.30 for commercial/office land uses). Therefore, construction activities are not expected to result in vibration-induced damage and impacts would be less than significant. No mitigation measures are needed.

## Vibration Annoyance

Some construction activities may be perceptible at the nearest off-site receptors due to their proximity. However, vibration-related construction activities would occur in the daytime when residential land uses are least susceptible to vibration (as many people would be away from their residences during the day).

According to the FTA, the level where vibration becomes annoying is 78 VdB for residential uses and 84 VdB for commercial/office uses (FTA 2006). Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Construction activities are typically distributed throughout the project site, and the highest vibration levels would only occur for a very limited duration when equipment is working in close proximity. Therefore, distances to the nearest receptors are measured from the center of the construction site to represent the average vibration level.

The nearest sensitive receptors are the single-family residences to the north (approximately 380 feet and 480 feet from the center of construction) and the single-family residence to the west (approximately 900 feet from the center of construction). Table 15 shows the vibration levels from typical earthmoving construction equipment at the nearest receptors.

Table 15 Average Annoyance Vibration Levels from Construction Equipment

| Equipment | Residence to north of project site ( 380 ft .) with limit of 78 VdB | Residence to north of project site ( 480 ft .) with limit of 78 VdB | Residence to west of project site ( 900 ft .) with limit of 78 VdB |
| :---: | :---: | :---: | :---: |
| Vibratory Roller | 59 | 56 | 49 |
| Large Bulldozer | 52 | 49 | 42 |
| Caisson Drilling | 52 | 49 | 42 |
| Excavator, Backhoe ${ }^{1}$ | 52 | 49 | 42 |
| Loaded Trucks | 51 | 48 | 41 |
| Jackhammer | 44 | 41 | 34 |
| Small Bulldozer | 23 | 20 | 13 |

Source: FTA 2006.
Bold numbers indicate values that exceed Newport Beach annoyance criteria (per the 2006 General Plan EIR methodology).
1 These items are not on the original FTA list, but are conservatively taken to be comparable to a Large Bulldozer regarding vibration emissions.

Construction-generated vibration levels would not exceed 78 VdB at any nearby sensitive residential receptors, and therefore would not exceed the threshold for human annoyance. Construction-generated vibration levels would not exceed the 84 VdB threshold for annoyance at any nearby commercial/office receptors. Generally, heavy equipment would only operate at the project boundary for brief periods. ${ }^{21}$ As

[^14]heavy construction equipment moves around the project site, average vibration levels at the nearest structures would diminish with increasing distance between structures. Impacts related to construction vibration annoyance would not be significant and mitigation is not necessary.

### 3.13 POPULATION AND HOUSING

Would the project:

## 36. Housing

a) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Less Than Significant Impact. A mobile home in the western half of the site would be removed by project development. A vacant single-family house is atop the small hill in the northwest part of the site; the small hill is not part of the school site, and project development would not displace the house. There were an estimated 7,514 housing units, consisting of 7,115 occupied units and 399 vacant units (the vacancy rate was 5.3 percent), in 2014 in the community of French Valley based on US Census Bureau American Community Survey 5-year estimates (USCB 2016). The average household size in French Valley in the aforesaid estimate was 3.9 persons. Thus, project development is estimated to displace four persons. There is sufficient housing in the region to absorb one household that would be displaced by project development, and development would not require construction of replacement housing elsewhere. Impacts would be less than significant and no mitigation is needed.
b) Create a demand for additional housing, particularly housing affordable to households earning $80 \%$ or less of the County's median income?

Less than Significant Impact. Project development would displace one household from the mobile home onsite. There is sufficient housing in the region to absorb one household, and project development would not require construction of replacement housing.

The project would not develop housing and thus would not directly add residents to the community of French Valley. Project operation would generate about 40 jobs. The unemployment rate in Riverside County in June 2016 was estimated at 6.7 percent (EDD 2016). Thus, project-generated employment is expected to be absorbed from the regional labor force and is not anticipated to attract substantial numbers of workers from out of the region. Impacts would be less than significant and no mitigation is needed.
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Less than Significant Impact. One mobile home in the western half of the site would be displaced by project development. (USCB 2016). The average household size in French Valley in the aforesaid American Community Survey estimate was 3.9 persons (USCB 2016). Thus, project development is estimated to displace four persons. There is sufficient housing in the region to absorb one household that would be

## 3. Environmental Analysis

displaced by project development, and development would not require construction of replacement housing elsewhere. Impacts would be less than significant and no mitigation is needed.

## d) Affect a County Redevelopment Project Area?

No Impact. The project site is not in or next to a County Redevelopment Area. The Riverside County Redevelopment Agency was dissolved by the County Board of Supervisors in 2012, pursuant to State law; and designated the Riverside County Economic Development Agency as successor agency. the Riverside County (Riverside County 2017). No impact would occur and no mitigation is required.

## e) Cumulatively exceed official regional or local population projections?

Less than Significant Impact. The 2018 Cumulative Plus Project conditions analyzed in the Traffic Impact Analysis for the proposed project considered four cumulative projects consisting of two commercial projects, one mixed use, and one residential project. No future-year population estimate for the Community of French Valley is available. The Western Riverside Council of Governments (WRCOG) forecasts that the population of western Riverside County - that is, from the San Jacinto and Santa Rosa mountains west to the County boundary - will increase by about 608,000, or 28 percent - from approximately $2,140,500$ in 2020 to 2,749,200 in 2035 (WRCOG 2013). Population growth by the four cumulative projects would be a very small fraction of all forecast population growth in western Riverside County. Impacts would be less than significant, and no mitigation is required.
f) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less Than Significant Impact. The project would not develop housing and thus would not directly add residents to the community of French Valley. Project operation would generate about 40 jobs. The unemployment rate in Riverside County in June 2016 was estimated at 6.7 percent (EDD 2016). Thus, project-generated employment is expected to be absorbed from the regional labor force and is not anticipated to attract substantial numbers of workers from out of the region. Impacts would be less than significant.

### 3.14 PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

## 37. Fire Services

## a) Fire protection?

Less Than Significant Impact. The Riverside County Fire Department provides fire protection and emergency medical service to the community of French Valley, including the project site. The two nearest fire

## 3. Environmental Analysis

stations to the project site are Station 83 at French Valley Airport, about 3.3 miles to the southwest, and Station 34 in the community of Winchester, about 5.3 miles to the north (RCFD 2016). RCFD has automatic aid agreements with the cities of Hemet and Murrieta and the Pechanga Band of Luiseno Mission Indians, and a mutual aid agreement with March Air Force Base (Management Partners 2009). ${ }^{22}$

Project construction and operation would generate a very slight increase in demands for fire protection and emergency medical services. Such a slight increase would not require RCFD to build new or expanded fire stations. Projects developed in unincorporated Riverside County pay development impact fees, including fees for development of fire stations, to Riverside County; such fees would help offset impacts of the proposed project.

It is expected that RCFD will add future fire stations in southwest Riverside County as required to serve planned growth. The RCFD Strategic Planning Division plans future fire stations. RCFD is funded mostly through the county general fund and development impact fees. The population of all unincorporated areas of Riverside County is forecast to increase from about 359,000 to 499,200 , or about 39 percent, between 2012 and 2040. The total population of the cities of Murrieta and Menifee, which are contiguous with the community of French Valley, and Temecula, about 1.2 miles south of French Valley, is forecast to increase from about 291,300 to about 388,300 , or about 33 percent, over the same period (SCAG 2016). Impacts would be less than significant and no mitigation is needed.

## 38. Sheriff Services

## b) Police protection?

Less Than Significant Impact. The Riverside County Sheriff's Department (RCSD) provides police protection to the community of French Valley. The nearest RCSD station to the project site is the Southwest Station at $30755-\mathrm{A}$ Auld Road in the City of Murrieta, about 3.3 miles to the south. Project development would cause a very slight increase in demands for police protection. RCSD is funded mostly through the county general fund and development impact fees. Projects developed in unincorporated Riverside County pay development impact fees to Riverside County, including fees for development of criminal justice public facilities; such fees would help offset impacts of the proposed project. Project development would not require construction of new or expanded police facilities, and impacts would be less than significant. No mitigation is needed.

## 39. Schools

## c) Schools?

No Impact. Project development would have a favorable impact on school facilities, and no adverse impact would occur. No mitigation is required.

[^15]
## 3. Environmental Analysis

## 40. Libraries

No Impact. The two nearest libraries to the project site are the Murrieta Public Library in the City of Murrieta and the Paloma Valley Library in the City of Menifee; the latter facility is part of the Riverside County Library System (CPL 2017). The proposed school would include a library and thus would not require students use off-campus libraries. Demand for libraries is generated by the population within the libraries' service areas. Project development would not add residents to the community of French Valley and would not generate demand for libraries. No adverse impact would occur and no mitigation is required.

## 41. Health Services

No Impact. The nearest health facility to the project site mapped on the Healthcare Atlas maintained by the Office of Statewide Health Planning and Development (OSHPD) is the Loma Linda University Medical Center-Murrieta in the City of Murrieta (OSHPD 2017). Project development would not adversely affect health services in the project region, and no impact would occur. No mitigation is needed.

### 3.15 RECREATION

## 42. Parks and Recreation

a) Would the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No Impact. The project proposes development of on-site athletic facilities; impacts of development of such facilities would be part of impacts of the whole project analyzed throughout Chapter 3 of this Initial Study. No additional impact would occur and no mitigation is needed.
b) Would the project include the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The proposed school would include athletic facilities-a multipurpose room with indoor basketball/volleyball court and a soccer field—for use of students. Project development would not require students to use off-campus recreational facilities, and no impact would occur.
c) Is the project located within a Community Service Area (CSA) or recreation and park district with a Community Parks and Recreation Plan (Quimby fees)?

No Impact. The project site is in the Valley-Wide Recreation and Parks District (VWRPD). The nearest VWRPD facility to the project site is Abelia Sports Park about 0.3 mile to the south. The VWRPD requires dedication of parkland by development projects. The school would be required to pay fees in lieu of parkland dedication to the VWRPD (Domenigoni 2017). Project development would not adversely affect VWRPD facilities or services, or conflict with requirements for parkland dedication and/or fees under the Quimby Act (California Government Code Section 66477). No mitigation is required.

## 43. Recreational Trails

a) Would the project adversely affect a recreational trail or bikeway included in the Riverside County Southwest Area Plan Trails and Bikeway System?

No Impact. The two nearest trails to the project site mapped in the Riverside County General Plan Southwest Area Plan are a Regional Trail [Urban/Suburban] on a segment of SR-79 including the site frontage; and a Community Trail on Pourroy Road (RCPD 2015). Project development would not interfere with either of those trails, and no impact would occur. No mitigation is needed.

### 3.16 TRANSPORTATION/TRAFFIC

The information in this section is based in part on the Transportation Impact Analysis for Temecula Valley Charter School completed by PlaceWorks in April 2017; a complete copy of this report is included as Appendix H to this Initial Study.

## 44. Circulation

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

## Less Than Significant Impact

## Existing Conditions

## Roadways

The study area was determined based on the anticipated attendance area, a review of the circulation network, the number of trips generated by the project, and consultation with County transportation staff. All roadway classifications are from the County of Riverside General Plan Circulation Element.

Winchester Road (State Route 79): This north-south roadway currently is four lanes in the study area and is classified as an Expressway. The posted speed limit varies from 55 to 65 miles per hour in the study area.

Keller Road: This east-west roadway is currently unpaved in the study area and is classified as a Secondary Roadway.

Pourroy Road/Abelia Street: This roadway is Pourroy Road to the west of SR-79 and Abelia Street to the east of SR-79. This roadway is classified as a Secondary Roadway and is currently two lanes for Pourroy Road and four lanes for Abelia Street. The posted speed limit on Abelia Street is 45 mph .

Whisper Heights Parkway/Pourroy Road: This roadway is Whisper Heights Parkway to the west of SR79 and Pourroy Road to the east of SR-79. Pourroy Road is classified as a Secondary Roadway. Whisper

## 3. Environmental Analysis

Heights Parkway is currently two lanes and Pourroy Road is currently four lanes in the study area. The posted speed limit on Whisper Heights Parkway is 25 mph .

Jean Nicholas Road/Skyview Road: This roadway is Jean Nicholas Road to the west of SR-79 and Skyview Road to the east of SR-79. It is classified as a Secondary Roadway. Jean Nicholas Road currently has two eastbound lanes and one westbound lane while Skyview Road currently has four lanes.

Max Gillis Boulevard/Thompson Road: This Roadway is Max Gillis Boulevard to the west of SR-79 and Thompson Road to the east of SR-79. Max Gillis Boulevard and Thompson Road currently have four lanes. Max Gillis Boulevard is classified as a Major Roadway and Thompson Road is classified as a Secondary Roadway. Max Gillis Boulevard and Thompson Road have a posted speed limit of 45 mph .

Benton Road: This east-west roadway currently is two lanes in the project area and is classified as an Urban Arterial Roadway.

Pat Road: This roadway is a two-lane local street.
Elliot Road: This north-south roadway is a two-lane local street.

## Intersections

The intersections listed in Table 16 were analyzed based on Riverside County guidelines requiring intersections at streets with a minimum classification of collector or higher to be studied where the project adds 50 or more peak hour trips.

Table 16 Study Area Intersections

| Intersection | Traffic Control | Jurisdiction |
| :--- | :--- | :--- |
| SR-79 at Keller Road | Signalized | Caltrans |
| SR-79 at Pourroy Road/Abelia Street | Signalized | Caltrans |
| SR-79 at Whisper Heights Parkway/Pourroy Road | Signalized | Caltrans |
| SR-79 at Jean Nicholas Road/Skyview Road | Signalized | Caltrans |
| SR-79 at Max Gillis Boulevard/Thompson Road | Signalized | Caltrans |
| SR-79 at Benton Road | Signalized | Caltrans |
| Pat Road at Pourroy Road | Side-street stop | Riverside County |
| Jean Nicholas Road at Elliot Road | Side-street stop | Riverside County |
| Pourroy Road at Skyview Road | All-way stop | Riverside County |
| Pourroy Road at Thompson Road | All-way stop | Riverside County |
| Source: PlaceWorks 2016. |  |  |

## Pedestrian Facilities

There are currently no paved sidewalks on Keller Road or the section of SR-79 along the project site frontage.

## 3. Environmental Analysis

## Bicycle Facilities

There are no bicycle facilities on Keller Road or SR-79 near the project site.

## Public Transit

Riverside Transit Agency Route 79 operates on SR-79, extending from Hemet in the northeast to Temecula in the southwest. Route 79 operates six days per week, Monday through Saturday, with a frequency of about one hour (RTA 2016). Project development would not interfere with operation of Route 79.

## Methodology

## Levels of Service

Roadway capacity is generally limited by the ability to move vehicles through intersections. A level of service (LOS) is a standard performance measurement to describe the operating characteristics of a street system in terms of the level of congestion or delay experienced by motorists. Service levels range from A through F, which relate to traffic conditions from best (uncongested, free-flowing conditions) to worst (total breakdown with stop-and-go operation).

The methodology used to assess the operation of a signalized intersection is based on the Highway Capacity Manual (HCM). The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions. The peak hours selected for analysis are the highest volumes that occur in four consecutive 15minute periods from 7 to 9 AM and from 4 to 6 PM on weekdays. The HCM 2010 signalized intersection methodology presents LOS in terms of control delay (in seconds per vehicle). Per the HCM methodology, overall average intersection delays at signalized intersections were calculated, and the worst-case approach delays were calculated at unsignalized intersections. The level of service corresponds to the delay calculated. Table 17 describes the level of service concept and the operating conditions expected under each level of service for signalized and unsignalized intersections. The software PTV Vistro 4 was used to determine the LOS at the study area intersections.

Table 17 Intersection Level of Service Descriptions

| LOS |  | Average Delay Per Vehicle (seconds) |  |
| :---: | :--- | :---: | :---: |
| A | Level of Service A occurs when progression is extremely favorable and <br> most vehicles arrive during the green phase. Most vehicles do not stop at <br> all. Short cycle lengths may also contribute to low delay. | 0 to 10.00 | 0 Signalized |
| Bnsignalized |  |  |  |
| B | Level of Service B generally occurs with good progression and/or short <br> cycle lengths. More vehicles stop than for Level of Service A, causing <br> higher levels of average total delay. | 10.01 to 20.00 | 10.01 to 15.00 |
| C | Level of Service C generally results when there is fair progression and/or <br> longer cycle lengths. Individual cycle failures may begin to appear in this <br> level. The number of vehicles stopping is significant at this level, although <br> many still pass through the intersection without stopping. | 20.01 to 35.00 | 15.01 to 25.00 |

## 3. Environmental Analysis

## Table 17 Intersection Level of Service Descriptions

| LOS | Description | Average Delay Per Vehicle (seconds) |  |
| :---: | :--- | :---: | :---: |
| D | Level of Service D generally results in noticeable congestion. Longer <br> delays may result from some combination of unfavorable progression, <br> long cycle lengths, or high volume to capacity ratios. Many vehicles stop, <br> and the proportion of vehicles not stopping declines. Individual cycle <br> failures are noticeable. | 35.01 to 55.00 | 25.01 to 35.00 |
| E | Level of Service E is considered to be the limit of acceptable delay. <br> These high delay values generally indicate poor progression, long cycle | 55.01 to 80.00 | 35.01 to 50.00 |
|  | lengths, and high volume to capacity ratios. Individual cycle failures are <br> frequent occurrences. | 80.01 and up | 50.01 and up |
| F | Level of Service F is considered to be unacceptable to most drivers. This <br> condition often occurs with oversaturation, i.e., when arrival flow rates <br> exceed the capacity of the intersection. It may also occur at high volume <br> to capacity ratios below 1.00 with many individual cycle failures. Poor <br> progression and long cycle lengths may also be major contributing <br> causes to such delay levels. |  |  |

Source: Highway Capacity Manual, Transportation Research Board, 2000.

## Acceptable LOS and Thresholds of Significance

The project site is in the Southwest Area Plan. Policy C 2.1 of the County of Riverside General Plan has established LOS " $D$ " as the minimum level of service in community development areas for intersections of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, and conventional state highways. Based on the Route Concept Report Fact Sheet for State Route 79 (SR-79; Caltrans 1999), in accordance with Riverside County's Congestion Management Plan (CMP; RCTC 2011) and, LOS "E" is considered the limit of acceptable traffic operations along SR-79 through the year 2020.

Potential traffic impacts would occur if, during the weekday peak hours:

- At intersections currently operating at acceptable LOS, the addition of project trips would change the LOS to an unacceptable LOS.
- At intersections currently operating at unacceptable LOS, the project would increase the delay by more than 5 seconds.


## Existing Intersections Operations

## Existing Traffic Volumes

Weekday AM and PM peak hour turn movement volumes were collected at the study-area intersections. The counts were collected on Wednesday, September 14, 2016. The existing AM and PM peak hour count worksheets and figures showing turn-movement volumes are provided in the Traffic Impact Analysis (provided as Appendix H to this Initial Study).

## 3. Environmental Analysis

## Existing Conditions Intersection Operations Analysis

The intersection operations analysis results are summarized in Table 18. As shown in the table, all study area intersections currently operate at acceptable LOS during the peak hours for Existing traffic conditions, except for SR-79 at Max Gillis Boulevard/Thompson Road in the AM and PM peak hour, and SR-79 at Benton Road in the PM peak hour.

Table 18 Existing Peak Hour Intersection Levels of Service

| Intersection | Traffic Control | Jurisdiction | AM Peak Hour |  | PM Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Average Delay (sec/veh) | LOS | $\begin{gathered} \hline \text { Average Delay } \\ \text { (sec/veh) } \end{gathered}$ | LOS |
| 1. SR-79 at Keller Road | Signalized | Caltrans | 2.8 | A | 5.5 | A |
| 2. SR-79 at Pourroy Road/Abelia Street | Signalized | Caltrans | 17.2 | B | 12.5 | B |
| 3. SR-79 at Whisper Heights Parkway/Pourroy Road | Signalized | Caltrans | 15.2 | B | 15.6 | B |
| 4. SR-79 at Jean Nicholas Road/Skyview Road | Signalized | Caltrans | 15.7 | B | 13.0 | B |
| 5. SR-79 at Max Gillis Boulevard/Thompson Road | Signalized | Caltrans | 180.4 | F | 144.6 | F |
| 6. SR-79 at Benton Road | Signalized | Caltrans | 21.0 | C | 86.8 | F |
| 7. Pourroy Road at Pat Road | Unsignalized | Riverside | 10.7 | B | 9.5 | A |
| 8. Elliot Road at Jean Nicholas Road | Unsignalized | Riverside | 19.0 | C | 13.2 | B |
| 9. Pourroy Road at Skyview Road | Unsignalized | Riverside | 11.2 | B | 10.0 | A |
| 10. Pourroy Road at Thompson Road | Unsignalized | Riverside | 13.9 | B | 16.1 | C |

Notes: LOS calculation worksheets included in in the Traffic Impact Analysis included as Appendix H of this Initial Study.
Intersections with unacceptable LOS are shown in bold.

## Project Traffic

The project would have a capacity of 600 students from grades K to 8 . The trip generation was calculated based on rates in the Institute of Transportation Engineers' (ITE) manual, Trip Generation (9th edition), for Land Use 534, Private School (K-8) and supplemented by rates from Land Use 536, Private School (K-12). Table 19 shows the trip generation rates and project trip generation for the daily, AM peak hour, and PM peak hour volumes. The project is expected to generate up to1,488 daily trips, 540 trips ( 297 inbound and 243 outbound) during the AM peak hour, and 102 trips ( 44 inbound and 58 outbound) during the PM peak hour.

Table 19 Project Trip Generation

| Land Use | Unit | Trip Generation |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Daily ${ }^{2}$ | AM Peak Hour ${ }^{1}$ |  |  | PM Peak Hour ${ }^{2}$ |  |  |
|  |  |  | In | Out | Total | In | Out | Total |
| Private School (K-8) | Students | 2.48 | 0.50 | 0.41 | 0.90 | 0.07 | 0.10 | 0.17 |
| Project Trip Generation | 600 | 1,488 | 297 | 243 | 540 | 44 | 58 | 102 |

[^16]
## 3. Environmental Analysis

Temecula Valley Charter School exists 1.4 miles southeast of the project site at 35755 Abelia Street in the community of French Valley and had 516 students in the 2015-16 school year (CDE 2016). The charter school proposes to relocate to the proposed school site. Thus, trips generated by about 85 percent of the 600 -student capacity of the proposed school would be already-existing trips on roadways in and near French Valley and would not be new trips added to area roadways. Therefore, this analysis overestimates project trip generation.

The general approach for conducting traffic impact analyses is to evaluate weekday peak hour traffic during the commute peak traffic conditions that generally occur from 7 to 9 AM and 4 to 6 PM . The performance of the project access during school drop-off and pick-up times is evaluated in detail under Site Access and Internal Circulation below.

## Trip Distribution and Assignment

The traffic that would be generated by the school was geographically distributed onto the street network by evaluating the layout of the study area roadway network and reviewing land uses designated as residential in the area. Figure 11, Project Trip Distribution, presents the anticipated trip distribution for the school. The trip distribution percentages are applied to the project trip generation to determine the traffic volumes forecast to be added at each intersection (i.e., trip assignment).

## Existing Plus Project Traffic Conditions

To assess Existing Plus Project traffic conditions, existing traffic is combined with project traffic. The intersection operations for the Existing Plus Project traffic conditions are shown in Table 20.

Table 20 Intersection Delay and LOS, Existing Plus Project Conditions

| Intersection | Traffic Control | Jurisdiction | AM Peak Hour |  | PM Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Average Delay (sec/veh) | LOS | $\begin{gathered} \text { Average Delay } \\ \text { (sec/veh) } \end{gathered}$ | LOS |
| 1. SR-79 at Keller Road | Signalized | Caltrans | 4.2 | A | 7.4 | A |
| 2. SR-79 at Pourroy Road/Abelia Street | Signalized | Caltrans | 33.3 | C | 14.7 | B |
| 3. SR-79 at Whisper Heights Parkway/Pourroy Road | Signalized | Caltrans | 18.0 | B | 16.9 | B |
| 4. SR-79 at Jean Nicholas Road/Skyview Road | Signalized | Caltrans | 16.1 | B | 14.4 | B |
| 5. SR-79 at Max Gillis Boulevard/Thompson Road | Signalized | Caltrans | 180.4 | F | 165.2 | F |
| 6. SR-79 at Benton Road | Signalized | Caltrans | 24.6 | C | 87.0 | F |
| 7. Pourroy Road at Pat Road | Unsignalized | Riverside | 23.8 | C | 10.3 | B |
| 8. Elliot Road at Jean Nicholas Road | Unsignalized | Riverside | 22.4 | C | 14.5 | B |
| 9. Pourroy Road at Skyview Road | Unsignalized | Riverside | 12.7 | B | 11.2 | B |
| 10. Pourroy Road at Thompson Road | Unsignalized | Riverside | 15.5 | C | 17.3 | C |

Notes: LOS calculation worksheets included in the Traffic Impact Analysis included as Appendix H of this Initial Study.
Intersections with unacceptable LOS are shown in bold.

Figure 11 - Project Trip Distribution 3. Environmental Analysis


## 3. Environmental Analysis

This page intentionally left blank.

## 3. Environmental Analysis

Under Existing Plus Project conditions, the intersections of SR-79 at Max Gillis Boulevard/Thompson Road would operate at LOS F in the AM and PM peak hour, and SR-79 at Benton Road would operate at LOS F in the PM peak hour. The remaining study intersections would operate at acceptable LOS.

## Future Traffic Conditions

Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways as well as traffic generated by future cumulative projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. The ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Future year traffic forecasts for 2018 traffic conditions are based upon two years of ambient growth at 2 percent per year. The total ambient growth is the compounded growth of 2 percent per year over two years, which results in a total growth of 4 percent.

Cumulative projects are closely related past, present, and reasonably foreseeable probable future projects. A total of 18 projects in the County of Riverside and City of Murrieta have been screened. Based on a review of the circulation system, the trip generation, location, and land use type, the cumulative projects shown on Figure 12, Cumulative Developments Location Map, would have the potential for directly adding measurable traffic to the area street system. The cumulative development projects assumed in this traffic analysis are estimated to generate 40,633 trip-ends per day during a typical weekday, with approximately 1,488 vehicle trips during the AM peak hour and 3,357 vehicle trips during the PM peak hour. The trip generation calculations for the cumulative projects are in the Traffic Impact Analysis included as Appendix H to this Initial Study.

The following describes each future scenario evaluated and identifies the intersections that are forecast to operate at unacceptable LOS for each scenario.

## Existing Plus Ambient Plus Project Traffic Conditions

A scenario for existing + ambient growth + project (EAP) was evaluated, corresponding to a scenario for project opening year 2018 with the project but without the development of cumulative projects. The intersection operations for the EAP traffic conditions have been calculated and are given in Table 21.

As shown in the table, under EAP conditions, the intersections of SR-79 at Max Gillis Boulevard/Thompson Road would operate at unacceptable LOS F in the AM and PM peak hour, and SR-79 at Benton Road would operate at unacceptable LOS F in the PM peak hour. The remaining study intersections would operate at acceptable LOS.

## 3. Environmental Analysis

Table 21 Intersection Delay and LOS, EAP Conditions

| Intersection | Traffic Control | Jurisdiction | AM Peak Hour |  | PM Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\begin{gathered} \text { Average } \\ \text { Delay } \\ \text { (sec/veh) } \end{gathered}$ | LOS | Average Delay (sec/veh) | LOS |
| 1. SR-79 at Keller Road | Signalized | Caltrans | 4.3 | A | 8.9 | A |
| 2. SR-79 at Pourroy Road/Abelia Street | Signalized | Caltrans | 38.0 | D | 15.2 | B |
| 3. SR-79 at Whisper Heights Parkway/Pourroy Road | Signalized | Caltrans | 18.7 | B | 17.8 | B |
| 4. SR-79 at Jean Nicholas Road/Skyview Road | Signalized | Caltrans | 17.2 | B | 14.9 | B |
| 5. SR-79 at Max Gillis Boulevard/Thompson Road | Signalized | Caltrans | 196.6 | F | 184.7 | F |
| 6. SR-79 at Benton Road | Signalized | Caltrans | 27.6 | C | 98.3 | F |
| 7. Pourroy Road at Pat Road | Unsignalized | Riverside | 24.3 | C | 10.3 | B |
| 8. Elliot Road at Jean Nicholas Road | Unsignalized | Riverside | 24.0 | C | 14.9 | B |
| 9. Pourroy Road at Skyview Road | Unsignalized | Riverside | 13.1 | B | 11.4 | B |
| 10. Pourroy Road at Thompson Road | Unsignalized | Riverside | 16.5 | C | 18.8 | C |

Notes: LOS calculation worksheets included in the Traffic Impact Analysis included as Appendix H of this Initial Study.
Intersections with unacceptable LOS are shown in bold.

## 2018 Without Project Traffic Conditions

To assess project completion traffic conditions at the time of project opening year, existing traffic is combined with the anticipated ambient growth and cumulative projects to reflect 2018 No Project traffic conditions (existing + ambient growth + cumulative projects). The intersection operations for the 2018 No Project traffic conditions have been calculated and are given in Table 22.

Table 22 Intersection Delay and LOS, 2018 No Project Conditions

| Intersection | Traffic Control | Jurisdiction | AM Peak Hour |  | PM Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1. SR-79 at Keller Road | Signalized | Caltrans | 20.5 | C | 219.2 | F |
| 2. SR-79 at Pourroy Road/Abelia Street | Signalized | Caltrans | 71.5 | E | 208.1 | F |
| 3. SR-79 at Whisper Heights Parkway/Pourroy Road | Signalized | Caltrans | 32.3 | C | 152.0 | F |
| 4. SR-79 at Jean Nicholas Road/Skyview Road | Signalized | Caltrans | 19.6 | B | 39.6 | D |
| 5. SR-79 at Max Gillis Boulevard/Thompson Road | Signalized | Caltrans | 214.6 | F | 258.7 | F |
| 6. SR-79 at Benton Road | Signalized | Caltrans | 40.5 | D | 175.4 | F |
| 7. Pourroy Road at Pat Road | Unsignalized | Riverside | 27.7 | D | 61.5 | F |
| 8. Elliot Road at Jean Nicholas Road | Unsignalized | Riverside | 25.4 | D | 24.4 | C |
| 9. Pourroy Road at Skyview Road | Unsignalized | Riverside | 17.0 | C | 63.3 | F |
| 10. Pourroy Road at Thompson Road | Unsignalized | Riverside | 22.9 | C | 81.5 | F |

[^17]Intersections with unacceptable LOS are shown in bold.

Figure 12-Cumulative Developments Location Map 3. Environmental Analysis


## 3. Environmental Analysis

This page intentionally left blank.

## 3. Environmental Analysis

Under 2018 No Project conditions, the following intersections would operate at unacceptable LOS:

- SR-79 at Keller Road (PM peak hour)
- SR-79 at Pourroy Road/Abelia Street (PM peak hour)
- SR-79 at Whisper Heights Parkway/Pourroy Road (PM peak hour)
- SR-79 at Max Gillis Boulevard/Thompson Road (AM and PM peak hours)
- SR-79 at Benton Road (PM peak hour)
- Pourroy Road at Pat Road (PM peak hour)
- Pourroy Road at Skyview Road (PM peak hour)
- Pourroy Road at Thompson Road (PM peak hour)


## 2018 With Project and Cumulative Projects Traffic Conditions

To assess future cumulative traffic conditions, traffic generated by cumulative projects is added to the EAP conditions discussed above. The intersection operations for the 2018 Cumulative traffic conditions have been calculated and are listed in Table 23.

Table 23 Intersection Delay and LOS, 2018 with Project and Cumulative Projects Traffic Conditions

| Intersection | Traffic Control | Jurisdiction | AM Peak Hour |  | PM Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\begin{gathered} \hline \text { Average } \\ \text { Delay } \\ \text { (sec/veh) } \end{gathered}$ | LOS | Average Delay (sec/veh) | LOS |
| 1. SR-79 at Keller Road | Signalized | Caltrans | 15.9 | B | 221.5 | F |
| 2. SR-79 at Pourroy Road/Abelia Street | Signalized | Caltrans | 132.5 | F | 236.2 | F |
| 3. SR-79 at Whisper Heights Parkway/Pourroy Road | Signalized | Caltrans | 49.5 | D | 143.1 | F |
| 4. SR-79 at Jean Nicholas Road/Skyview Road | Signalized | Caltrans | 21.0 | C | 43.0 | D |
| 5. SR-79 at Max Gillis Boulevard/Thompson Road | Signalized | Caltrans | 218.7 | F | 261.2 | F |
| 6. SR-79 at Benton Road | Signalized | Caltrans | 47.3 | D | 176.8 | F |
| 7. Pourroy Road at Pat Road | Unsignalized | Riverside | 357.4 | F | 86.7 | F |
| 8. Elliot Road at Jean Nicholas Road | Unsignalized | Riverside | 31.9 | D | 25.4 | D |
| 9. Pourroy Road at Skyview Road | Unsignalized | Riverside | 21.6 | C | 68.5 | F |
| 10. Pourroy Road at Thompson Road | Unsignalized | Riverside | 28.9 | D | 85.1 | F |

Notes: LOS calculation worksheets included in the Traffic Impact Analysis included as Appendix H of this Initial Study.
Intersections with unacceptable LOS are shown in bold.

As shown in the table, under 2018 With Project With Cumulative Project conditions, the following intersections would operate at unacceptable LOS:

- SR-79 at Keller Road (PM peak hour)
- SR-79 at Pourroy Road/Abelia Street (AM and PM peak hours)
- SR-79 at Whisper Heights Parkway/Pourroy Road (PM peak hour)
- SR-79 at Max Gillis Boulevard/Thompson Road (AM and PM peak hours)
- SR-79 at Benton Road (PM peak hour)


## 3. Environmental Analysis

- Pourroy Road at Pat Road (AM and PM peak hour)
- Pourroy Road at Skyview Road (PM peak hour)
- Pourroy Road at Thompson Road (PM peak hour)


## Impacts

Significant impacts are determined by comparing with- and without-project scenarios for each traffic condition. As discussed above, potential traffic impacts would occur if, during the weekday peak hours:

- At intersections currently operating at acceptable LOS (A to D), the addition of project trips would change the LOS to an unacceptable LOS E or F.
- At intersections currently operating at unacceptable LOS E or F, the project would increase the delay by more than 5 seconds.

According to this criterion, potential impacts would occur at the following locations:

## Existing Plus Project Conditions

5. SR-79 at Max Gillis Boulevard/Thompson Road (PM peak hour)
6. SR-79 at Benton Road (PM peak hour)

## 2018 Cumulative Plus Project Conditions

2. SR-79 at Pourroy Road/Abelia Street (AM and PM peak hours)
3. SR-79 at Max Gillis Boulevard/Thompson Road (AM peak hour)
4. SR-79 at Benton Road (AM peak hour)
5. Pourroy Road at Pat Road (AM and PM peak hour)
6. Pourroy Road at Skyview Road (PM peak hour)

To address intersection operational deficiencies, the following road improvements would be necessary:
2. SR-79 at Pourroy Road/Abelia Street

- Construct a southbound through lane
- Construct a northbound through lane
- Construct a northbound left turn lane
- Construct an eastbound right turn lane


## 3. Environmental Analysis

5. SR-79 at Max Gillis Boulevard/Thompson Road

- Construct an eastbound right turn lane
- Construct a westbound left turn lane
- Construct a northbound left turn lane
- Construct a southbound through lane

6. SR-79 at Benton Road

- Construct a southbound left turn lane
- Construct a westbound right turn lane

7. Pourroy Road at Pat Road

- Install a traffic signal

9. Pourroy Road at Skyview Road

- Install a traffic signal

None of the intersections above were identified in the Western Riverside Council of Governments Transportation Uniform Mitigation Fee (TUMF) program, the Riverside County Development Impact Fee program, or the Road and Bridge Benefit Districts. These programs are discussed below.

## Applicable Funding Mechanisms

Several funding mechanisms for transportation improvements in Riverside County are discussed in the Traffic Impact Analysis included as Appendix H to this Initial Study. The proposed non-profit K-8 school would be exempt from payments of such fees.

## Signal Warrants

Signal warrants are a set of criteria used to evaluate the potential need for the installation of a traffic signal at an unsignalized or stop-controlled intersection. The methodology for the signal warrant analysis is included in the 2014 California Manual on Uniform Traffic Control Devices. The manual states that if one or more of the criteria for signal warrants is met, an engineering study would be required to evaluate other factors to determine if an intersection must be signalized. The traffic analysis in this study uses Warrant 3 criteria, which are based on traffic volumes entering the intersections during the peak hour. The signal warrant calculations are in the Traffic Impact Analysis (Appendix H to this Initial Study). The signal warrant criteria would not be met at any intersection under existing and 2018 scenarios.

## Site Access and Internal Circulation

Site access would be via two 1-way driveways at the southeast corner of the site from the extension of Koon Street, which would begin at the existing Pourroy Road intersection and end in a cul-de-sac at SR-79. Koon Street would link to Pourroy Road and form a 4-leg intersection. The intersection would be approximately 1,200 feet from SR-79. The segment of Pourroy Road north of Pat Road is currently unpaved (starting

## 3. Environmental Analysis

approximately 200 feet south of Flossie Way and is mostly flat and clear of visual obstructions for at least 200 feet north and south of Flossie Way.

The proposed internal circulation would consist of a flow-through drop-off loop that would be 30 feet wide and extend around the periphery of the parking lot. The total length of the loop would be approximately 1,400 feet. The parking lot would include 100 parking spaces, extending the length of the site boundary along SR-79. The student drop-off and pick-up area (loading) would be along the western portion of the parking lot adjacent to the school buildings. It would have a lane for loading/unloading and at least one passing lane. Preliminary plans show one passing lane and one loading lane. Given a length of approximately 700 feet from the beginning of the loading area to the driveway entrance plus the length of Flossie Way of approximately 800 feet, there would be a total of approximately 1,500 feet of driveway length to queue cars during student drop-off and pick-up times. Assuming an average length of 25 feet per vehicle, the internal driveways could accommodate up to 60 vehicles before the student loading area. In addition, there would be 100 parking spaces and additional space in the loading area. It is anticipated that queues would be limited to Flossie Way, and some queueing may occur on Pourroy Road in the proximity of Flossie Way as vehicles slow down to turn into Flossie Way. The highest turn movement volumes at the access driveway would occur during the AM peak hour with student drop-off. The typical morning peak drop-off and afternoon pick-up activity lasts about 20 minutes, and any possible queue would dissipate immediately afterward.

## Project Improvements

The following roadway improvements are necessary to ensure that adequate site access is provided. Figure 13, Project Site Access Improvements, presents the project's site access and recommendations.

- Construct Flossie Way at its ultimate width as a local road per County of Riverside design standards with a right-of-way of 60 feet between the project's western boundary and the project's access driveway. A sidewalk shall be provided on the eastern side of the road along the school property with an adequate connection to allow pedestrian connections to the school buildings without walking on driveways.
- The intersection of Flossie Way/Koon Street/Pourroy Road shall form a 4-leg intersection with Flossie Way.
- Parking and student loading/unloading shall be prohibited on Flossie Way to reduce friction and maneuvers on Flossie Way, especially during student drop-off and pick-up times.
- Prior to the opening of the project, TVCS shall work with Riverside County to identify on-site traffic signing and striping to be implemented in conjunction with detailed construction plans for the project. These shall be in conformance with design standards from the California Manual of Uniform Traffic Control Devices for Streets and Highways and Riverside County standards.
- TVCS and Riverside County should periodically review traffic operations in the vicinity of the project once the project is constructed to ensure that traffic operations are satisfactory.

Figure 13 - Project Site Access Improvements 3. Environmental Analysis


Prior to the opening of the project, the school shall work with the Riverside County to identify on-site traffic signing and striping to be implemented in conjunction with detailed construction plans for the project. These shall be in conformance with design standards from the California Manual of Uniform Traffic Control Devices for Streets and Highways (CA MUTCD) and Riverside County standards.

The school and the Riverside County should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that traffic operations are satisfactory.

## 3. Environmental Analysis

This page intentionally left blank.
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. The Congestion Management Program in effect in Riverside County was approved by the Riverside County Transportation Commission in 2011. All freeways and selected arterial roadways in the county are designated elements of the CMP system of highways and roadways. SR-79 is a part of the CMP roadway system. According to the County CMP, when a deficiency is identified, a deficiency plan must be prepared by the local agency (in this case Caltrans). Other agencies identified as contributors to the deficiency, which include the County of Riverside, are also required to coordinate with the development of the plan. The plan must contain mitigation measures, including consideration of Transportation Demand Management strategies and transit alternatives, and a schedule for mitigating deficiency.

Western Riverside County local agencies and the County of Riverside have adopted Transportation Uniform Mitigation Fee programs. If, during the annual LOS monitoring process, an intersection within the TUMF area falls below LOS E, planned improvements necessary to mitigate the deficiency would be implemented through TUMF projects.

The project would generate 540 AM peak hour trips and 102 PM peak hour trips. The trip distribution map shows that up to 55 percent of these trips would be on segments of SR-79. Therefore, up to 297 trips would be added to segments of SR-79. The project would contribute to trips that would cause intersections along SR-79 to operate at unacceptable LOS. These deficiencies would occur without and with the project. The project would cause a cumulative impact at three study intersections along SR-79 at the intersections of SR79 at Pourroy Road/Abelia Street, SR-79 at Max Gillis Boulevard/Thompson Road, and SR-79 at Benton Road.

Approximately 85 percent of project trip generation would consist of trips already generated by the existing Temecula Valley Charter School campus on Abelia Street that would be relocated to the proposed school site. Trips to and from the existing campus use SR-79. Thus, project trip generation in this Initial Study overestimates new trips that would be added to study area roadways.

In addition, the TUMF program recognizes that schools accommodate residential growth and don't generate trips in the absence of such growth and therefore exempts schools from TUMF fees. Impacts would be less than significant and no mitigation is required.
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The nearest public-use airport to the site is French Valley Airport about 3.3 miles to the southwest. The site is not in areas surrounding French Valley Airport where heights of structures are limited to prevent obstructions to air navigation. Project development would require relocation of air traffic patterns, and no impact would occur. No mitigation is needed.

## 3. Environmental Analysis

## d) Alter waterborne, rail, or air traffic?

No Impact. One navigable waterway in Riverside County - the Colorado River on the east County boundary, 138 miles east of the project site - is listed on the US Army Corps of Engineers Los Angeles District's list of Navigable Waters in Los Angeles District (Corps 2017). Project development would not alter waterborne traffic.

The nearest railroad track to the project site is a BNSF Railway track in the City of Perris about 12 miles to the northwest (FRA 2017). Project development would not alter rail traffic.

The project site is not within the airport land use plan or within two nautical miles of a public-use airport. The nearest public-use airport to the site is French Valley Airport, about 3.3 miles to the southwest. The site is not in areas surrounding French Valley Airport where land uses are regulated to minimize hazards from aircraft crashes to persons on the ground, and not in areas where heights of structures are limited to prevent obstructions to air navigation. Project development would not alter air traffic. No impact would occur and no mitigation is needed.
e) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. Proposed site access is described above in Section 44.a. The designs of roadways and intersections that would be built as part of the project would not create conflicting turning movements or place queues for driveways on highways or arterial roadways. The proposed site access connecting the Koon Street cul-de-sac with SR-79 would be emergency-only and thus would not create turning movements or queues conflicting with traffic on SR-79. Impacts would be less than significant and no mitigation is needed.

## f) Cause an effect upon, or a need for new or altered maintenance of roads?

Less than Significant Impact. Project traffic impacts would be less than significant, as substantiated above in Section 44.a. Therefore, any increase in roadway maintenance required due to project development would be within the scale of increase caused by existing traffic and traffic resulting from planned growth in the project region. Impacts would be less than significant and no mitigation would be required.

## g) Cause an effect upon circulation during the project's construction?

Less than Significant Impact. Site grading would be balanced, that is, is not expected to require soil import or export. All staging of construction equipment and materials would be done onsite and would not block surrounding roadways. Construction would be phased so that only part of the total construction workforce would be onsite at any time. Project construction trip generation would be far lower than the 1,488 daily trips estimated for project operation. Project construction traffic impacts would be less than significant and no mitigation is required.

## h) Result in inadequate emergency access?

No Impact. The school site plan provides one access route from SR-79 via Pourroy Road and Flossie Way. The site plan provides access roads to within 150 feet of all portions of the exterior walls of each building, conforming with Section 503 of the California Fire Code (California Code of Regulations Title 24 Part 9). The project would provide adequate emergency access, and no adverse impact would occur. No mitigation is required.
i) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. Riverside Transit Agency Route 79 operates on Winchester Road, extending from Hemet in the northeast to Temecula in the southwest. Route 79 operates six days per week, Monday through Saturday, with a frequency of about one hour (RTA 2016). Project development would not interfere with operation of Route 79. There are no paved sidewalks or bicycle facilities near the project site that would be interfered with by project development. No impact would occur and no mitigation is needed.

## 45. Bike Trails

a) Would the project adversely affect a bikeway included in the Riverside County Southwest Area Plan Trails and Bikeway System?

No Impact. Project development would not impact County bikeways, as substantiated above in Section 43.a.

### 3.17 UTILITIES AND SERVICE SYSTEMS

## 46. Water

a) Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

Less Than Significant Impact. Water treatment facilities filter and/or disinfect water before it is delivered to customers. The Eastern Municipal Water District (EMWD) provides water to the community of French Valley and would serve the proposed school. The project site is in EMWD's Skinner Service Area, whose water supplies consist of imported water from northern California and the Colorado River treated at the Metropolitan Water District's Skinner Filtration Plant (EMWD 2016). The Skinner Filtration Plant has capacity of 630 million gallons per day (mgd) (MWDSC 2016). Elementary and middle schools are estimated to use 10 gallons of water per student per day, that is, 125 percent of the wastewater generation factor of 8 gallons per day (gpd) per student (Los Angeles 2006). Thus, the 600 -student school is estimated to use about 6,000 gallons of water per day. There is sufficient water treatment capacity in the region for estimated project water demands, and project development would not require construction of new or expanded water treatment facilities. Impacts would be less than significant and no mitigation is required.

## 3. Environmental Analysis

b) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. The project site is in a portion of EMWD's service area supplied with water imported from northern California and the Colorado River. EMWD retails water to customers in parts of its service area including the project site and wholesales imported water to six water purveyors in its service area. Both retail and wholesale supplies and demands are listed in Table 24.

Table 24 EMWD Forecast Water Supplies and Demands, acre-feet per year

|  | 2020 | 2025 | 2030 | 2035 | 2040 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Retail Supplies and Demands |  |  |  |  |  |
| Imported Water ${ }^{1}$ | 81,197 | 89,097 | 100,497 | 111,597 | 122,097 |
| Groundwater2 | 19,303 | 22,403 | 22,403 | 22,403 | 22,403 |
| Subtotal, Potable Water | 100,500 | 111,500 | 122,900 | 134,000 | 144,500 |
| Recycled Water | 45,245 | 48,334 | 50,017 | 51,800 | 53,300 |
| Total Supplies | 145,745 | 159,834 | 172,917 | 185,800 | 197,800 |
| Demands | 145,745 | 159,834 | 172,917 | 185,800 | 197,800 |
| Difference | 0 | 0 | 0 | 0 | 0 |
| Wholesale Supplies and Demands |  |  |  |  |  |
| Imported Water | 50,500 | 54,100 | 57,700 | 61,200 | 64,800 |
| Recycled Water | 1,656 | 4,766 | 5,183 | 5,600 | 5,600 |
| Total Supplies | 52,156 | 58,866 | 62,883 | 66,800 | 70,400 |
| Demands | 52,156 | 58,866 | 62,883 | 66,800 | 70,400 |
| Difference | 0 | 0 | 0 | 0 | 0 |

Source: RMC 2016.
1 Imported water includes treated imported water delivered directly to customers; raw imported water treated at EMWD filtration plants before delivery to customers; and imported water used to replenish groundwater for the Soboba Band of Luiseno Indians and others pursuant to a court settlement.
2 Groundwater includes potable groundwater and groundwater from the western part of the San Jacinto Groundwater Basin desalinated at EMWD desalters.

The proposed school is estimated to use about $6,000 \mathrm{gpd}$ based on 125 percent of the wastewater generation factor for elementary and middle schools (Los Angeles 2006). There are sufficient existing and planned water supplies in the region to meet estimated project water demands, and project development would not require EMWD to obtain new or expanded water supplies. Impacts would be less than significant.

## 47. Sewer

a) Require or result in the construction of new wastewater treatment facilities, including septic systems, or expansion of existing facilities, the construction of which would cause significant environmental effects?

Less Than Significant Impact. EMWD provides wastewater treatment for parts of western Riverside County including the project site. The project site is in the service area of EMWD's Temecula Valley Regional Water Reclamation Facility, which has capacity of 18 mgd and treated average flows of about 13.5 mgd in 2015 (RMC 2016). Expansion of this facility to 23 mgd capacity is expected to be complete by 2017 (EMWD 2014). The proposed school is estimated to generate about 4,800 gallons of wastewater per day, based on the

## 3. Environmental Analysis

generation factor of 8 gpd per student. There is sufficient wastewater treatment capacity in the region to treat project-generated wastewater, and project development would not require EMWD to build new or expanded wastewater treatment facilities.

The project would include installation of sewer laterals connecting to nearby sewer mains, and would not build or use septic systems. Impacts would be less than significant and no mitigation is needed.
b) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. Project impacts on wastewater treatment capacity would be less than significant, as substantiated in Section 47.a.

## 48. Solid Waste

a) Is the project served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. In 2015 about 99 percent of solid waste landfilled from the two cities closest to the project site, Murrieta and Menifee, was disposed of at two landfills-Badlands Sanitary Landfill near the City of Moreno Valley and El Sobrante Landfill near the City of Corona (CalRecycle 2016a). Capacities and disposal amounts for the two facilities are listed in Table 25.

Table 25 Landfills Serving Murrieta and Menifee

| Landfill and <br> Nearest City | Permitted Throughput <br> Capacity, <br> Tons per Day | Average Disposal, <br> Tons per Day, 2014 | Residual Capacity, <br> Tons per Day | Remaining Capacity, <br> Tons | Estimated <br> Closing Date |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Badlands Sanitary <br> Moreno Valley | 4,800 | 2,812 | 2,988 | $11,811,599$ | 2022 |
| El Sobrante <br> Corona | 16,054 | 6,793 | 9,261 | $145,530,000$ | 2045 |
| Total | $\mathbf{2 0 , 8 5 4}$ | 9,605 | $\mathbf{1 2 , 2 4 9}$ | $157,341,599$ | - |
| Sources: CalRecycle 2016b, 2016c, 2016d. |  | - |  |  |  |

The proposed school is estimated to generate about 0.007 pound of solid waste per square foot per day, or about 385 pounds per day for the approximately 55,000 total square feet of building area. There is sufficient landfill capacity in the region for estimated project solid waste generation, and project development would not require new or expanded landfills. Impacts would be less than significant.
b) Does the project comply with federal, state, and local statutes and regulations related to solid wastes including the CIWMP (County Integrated Waste Management Plan)?

No Impact. Assembly Bill 939 (Integrated Solid Waste Management Act of 1989; Public Resources Code 40050 et seq.) established an integrated waste-management system that focused on source reduction,

## 3. Environmental Analysis

recycling, composting, and land disposal of waste. AB 939 required every California city and county to divert 50 percent of its waste from landfills by the year 2000. Compliance with AB 939 is measured in part by comparing solid waste disposal rates for a jurisdiction with target disposal rates; actual rates at or below target rates are consistent with AB 939. AB 939 also requires California counties to show 15 years disposal capacity for all jurisdictions within the county or show a plan to transform or divert its waste.

Assembly Bill 341 (2011) increased the statewide waste diversion goal to 75 percent by 2020, and mandated recycling for commercial and multifamily residential land uses.

Assembly Bill 1826 (California Public Resources Code, Sections 42649.8 et seq.), which took effect in 2016, requires recycling of organic matter by businesses, and multifamily residences of five of more units, generating such wastes in amounts over certain thresholds.

Section 5.408 (Construction Waste Reduction, Disposal, and Recycling) of the 2013 California Green Building Standards Code (CALGreen; Title 24, California Code of Regulations, Part 11) requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

The proposed school would include collection areas for recyclable materials, including organic matter. Disposition of demolition and construction debris would comply with AB 341, AB 1826, and CALGreen Section 5.408. No impact would occur and no mitigation is needed.

## 49. Utilities

Would the project impact the following facilities requiring or resulting in the construction of new facilities or the expansion of existing facilities; the construction of which could cause significant environmental effects?

## a. Electricity?

## b. Natural Gas?

## c. Communications Systems?

Less than Significant Impact. Electricity, natural gas, and communications systems are already available in French Valley. The project would relocate an existing charter school to the proposed campus. The proposed school would serve students already living in the region or already forecast to live in the region due to planned growth; project development would not increase population or total student enrollment in or near French Valley. Development of the project would not require construction or expansion of new utility facilities that could cause significant environmental effects, and no mitigation is needed.

## d. Storm Water Drainage

Less than Significant Impact. A majority of the runoff from the site will occur over impervious surfaces that will discharge into the existing off-site storm drain system. Other flows will drain into proposed playfield
areas that will mimic the existing condition and allow for onsite retention. Impacts would be less than significant and no mitigation is needed.

## e. Street Lighting

Less than Significant Impact. Project development would include installation of street lights on the segments of Flossie Way and Pourroy Road that would be improved by the project. The street lights would conform to all applicable Riverside County standards, including standards regulating nighttime lighting related to the Mt. Palomar Observatory. Street light installation would not cause significant impacts.

## f. Maintenance of public facilities, including roads?

Less than Significant Impact. Project traffic impacts would be less than significant, as substantiated above in Section 44.a. Thus, Project development would not create a need for roadway maintenance exceeding that caused by existing and planned developments in the region. Impacts would be less than significant.

## g. Other Governmental Services?

Less than Significant Impact. Project development would not require the construction or expansion of fire or police stations, schools, libraries, or health care facilities, as substantiated above in Sections 37 through 42. Impacts would be less than significant and no mitigation is required.

### 3.18 MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact. As demonstrated in Section 3.4, Biological Resources, implementation of the proposed project would not result in the reduction of the habitat of fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or reduce the number or restrict the range of a rare or endangered plant or animal. Additionally, as demonstrated in Section 3.5, Cultural Resources, no historic resources were identified onsite, and therefore the project does not have the potential to eliminate important examples of California history or prehistory
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant Impact. No significant cumulative impacts are identified in this Initial Study, and impacts would be less than significant.

## 3. Environmental Analysis

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact. As demonstrated in the respective topical sections of this Initial Study, project development would not cause substantial adverse effects on human beings, either directly or indirectly. All such impacts were deemed to be less than significant.

## 4. References

Airnav.com. 2016, November 22. Airport Information. http://www.airnav.com/airports/.
Bay Area Air Quality Management District (BAAQMD). 2011, Revised. California Environmental Quality Act Air Quality Guidelines.

Beranek, Leo. 1988. Noise and Vibration Control. Revised edition. Washington, D.C.: Institute of Noise Control Engineering.

Bies, David A. and Colin H. Hansen. 2009. Engineering Noise Control: Theory and Practice. 4th edition. New York: Spon Press.

California Air Resources Board (CARB). 2008, October. Climate Change Proposed Scoping Plan, a Framework for Change.
—_. 2013, October 23. Proposed 2013 Amendments to Area Designations for State Ambient Air Quality Standards. http://www.arb.ca.gov/regact/2013/area13/area13isor.pdf.
__. 2014, May 15. Proposed First Update to the Climate Change Scoping Plan: Building on the Framework, http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.
__. 2015, December. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm.
___ 2016, April. Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/meetings/04112016/proposedstrategy.pdf

California Department of Forestry and Fire Prevention (CAL FIRE). 2009, December 24. Very High Fire Hazard Severity Zones in LRA: Western Riverside County. http:/ / frap.fire.ca.gov/webdata/maps/riverside_west/fhszl_map.60.pdf.

California Department of Resources Recycling and Recovery (CalRecycle). 2016a, July 28. Jurisdiction Disposal by Facility. http://www.calrecycle.ca.gov/lgcentral/Reports/DRS/Destination/JurDspFa.aspx.
___ 2016b, July 28. Facility/Site Summary Details: El Sobrante Landfill: http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0217/Detail/.
___ 2016c, July 28. Facility/Site Summary Details: Badlands Sanitary Landfill. http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0006/Detail/.

## 4. References

——. 2016d, July 28. Landfill Tonnage Reports.
http://www.calrecycle.ca.gov/SWFacilities/Landfills/Tonnages/.
California Department of Transportation (Caltrans). 1999, November. State Route 79. Route Concept Fact Sheet. http://sr79project.info/uploads/media_items/route-concept-report-november -1999.original.pdf.
——. 2006, August. Traffic Noise Analysis Protocol.
——. 2009, November. Technical Noise Supplement ("TeNS"). Prepared by ICF International.
——_, Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office. 2004, June. Transportation- and Construction-Induced Vibration Guidance Manual. Prepared by ICF International.
——, Division of Environmental Analysis. 2002, February. Transportation Related Earthborne Vibration (Caltrans Experiences). Technical Advisory, Vibration. TAV-02-01-R9601. Prepared by Rudy Hendricks. California Air Pollution Control Officers Association (CAPCOA). 2013. California Emissions Estimator Model (CalEEMod). Version 2013.2.2. Prepared by: ENVIRON International Corporation and the California Air Districts.
—_ 2011, September 7. California Scenic Highway Mapping System. http://www.dot.ca.gov/hq/LandArch/scenic_highways/.

California Geological Survey (CGS). 1990, January 1. Special Studies Zones Map, Murrieta Quadrangle. http://gmw.consrv.ca.gov/shmp/download/quad/MURRIETA/maps/MRIETA.PDF.
———. 2014a, October 21. Ground Motion Interpolator. http://www.quake.ca.gov/gmaps/PSHA/psha_interpolator.html.
—__ 2014b, November 4. Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Temescal Valley Production Area, Riverside County, California. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/sr_231/Temescal_Valley_Rpt\ Final_11-04-14-a.pdf.
———. 2014c, November 5. Updated Mineral Land Classification Map for Portland Cement Concrete-Grade Aggregate in the Temescal Valley Production Area, Riverside County, California. Special Report 231, Plate 1. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/sr_231/TemescalValley_MRZ_Plate1.pdf.
—_. 2014d, November 5. Updated Mineral Land Classification Map for Portland Cement ConcreteGrade Aggregate in the Temescal Valley Production Area, Riverside County, California. Special Report 231, Plate 2.
ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/sr_231/TemescalValley_MRZ_Plate1.pdf.
___ 2016, July 22. Fault Activity Map of California (2010). http://maps.conservation.ca.gov/cgs/fam/.

## 4. References

California State Library (CSL). 2017, April 11. California Public Library Outlets. http://www.batchgeo.com/map/capublibs.

Department of Water Resources (DWR). 2014, November. Public Update for Drought Response. http://water.ca.gov/waterconditions/docs/DWR_PublicUpdateforDroughtResponse_Groundwater Basins.pdf.
___ 2016, July 26. Groundwater Information Center Map Interactive Map Application. https://gis.water.ca.gov/app/gicima/.

Diversified Engineering. 1983, August. Environmental Constraints Sheet, Parcel Map No. 19448.
Division of Land Resource Protection (DLRP). 2016a, July 22. California Important Farmland Finder. http://maps.conservation.ca.gov/ciff/ciff.html.
——_ 2016b, June 29. Riverside County Williamson Act Lands FY 2015/2016 Sheet 1 of 3.

Domenigoni, Loretta (Parks Planner). 2017, April 11. Phone conversation. Valley-Wide Recreation and Parks District.

EMG. 2016, June 6. Phase I Environmental Site Assessment of 34155 Winchester Road, Winchester, California 92596. Prepared for Hansburger \& Klein.

Eastern Municipal Water District (EMWD). 2014, March 27. Temecula Valley Regional Water Reclamation Facility. http://www.emwd.org/home/showdocument?id=1426.
___ 2016, July. 2015 Water Quality Consumer Confidence Report. http://www.emwd.org/home/showdocument?id=14761.

Employment Development Department (EDD). 2016, November 21. Labor Force and Unemployment Rate for California Counties. https://data.edd.ca.gov/Labor-Force-and-Unemployment-Rates/Labor-Force-and-Unemployment-Rate-for-California-C/r8rw-9pxx.

Federal Emergency Management Agency (FEMA). 2016, July 27. Flood Map Service Center. https://msc.fema.gov/portal.

Federal Highway Administration (FHWA). 1978, December. Federal Highway Traffic Noise Prediction Model. Report No. FHWA-RD77-108. US Department of Transportation.

Federal Transit Administration (FTA). 2006, May. Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. US Department of Transportation.

Governor's Office of Planning and Research. 2003, October. State of California General Plan Guidelines.
—_ 2008, June. Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through CEQA Review. http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf.

## 4. References

Harris, Cyril M. 1998. Handbook of Acoustical Measurements and Noise Control. 3rd edition. Woodbury, NY: Acoustical Society of America.

Management Partners Incorporated. 2009, November 10. Riverside County Strategic Plan 2009-2029. http://www.rvcfire.org/stationsAndFunctions/AdminSppt/StrategicPlanning/Documents/Strategic Plan2009.pdf.

Metropolitan Water District of Southern California (MWDSC). 2016, July 27. Skinner Treatment Plant. http://www.mwdh2o.com/AboutYourWater/Water-Quality/Robert-Skinner.

Nationwide Environmental Title Research (NETR). 2016, July 22. Historical aerial photographs. Historicaerials.com.

Office of Environmental Health Hazard Assessment (OEHHA). 2015, February. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf.

Office of Mine Reclamation (OMR). 2016, November 22. Mines Online. http://maps.conservation.ca.gov/mol/mol-app.html.

Office of Statewide Health Planning and Development (OSHPD). 2017, January 3. Primary Care Clinics Licensed as of December 31, 2016. https://www.oshpd.ca.gov/documents/HID/FacilityList/PCListing_Dec2016.xlsx.

Phillip Brylski, Ph.D and David Bramlet (Brylski and Bramlet). 2017, May 24. Habitat Assessment.
Riverside County. 2015, December. County of Riverside Climate Action Plan. http://planning.rctlma.org/Portals/0/genplan/general_plan_2016/climate_action_plan/CAP_1208 15.pdf?ver=2016-04-01-101221-240.

Riverside County. 2017, April 10. Successor Agency. http://countyofriverside.us/AbouttheCounty/SuccessorAgency.aspx.

Riverside County Fire Department (RCFD). 2016, July 26. Station Locator. http://www.rvcfire.org/stationsAndFunctions/FireStations/Pages/Fire-Station-Map.aspx.

Riverside County Planning Department (RCPD). 2015, December 15. Safety Element. Chapter 6 of Riverside County General Plan. http://planning.rctlma.org/Portals/0/genplan/general_plan_2016 /elements/Ch06_Safety-120815.pdf?ver=2016-04-01-100802-943.

Riverside County Planning Department (RCPD). 2015, December 8. Circulation Element. Chapter 4 of Riverside County General Plan. http://planning.rctlma.org/Portals/0/genplan/general_plan_2016/elements/Ch04_Circulation_120 815.pdf?ver=2016-04-01-100756-397.

## 4. References

Riverside County Planning Department (RCPD). 2015, December 15. Southwest Area Community Plan. http://planning.rctlma.org/Portals/0/genplan/general_plan_2016/area_plans/SWAP_121515m.pdf ?ver=2016-04-01-101033-273.

Riverside County Transportation Commission (RCTC). 2011, December 14. 2011 Riverside County Congestion Management Program.
http://rctc.org/uploads/media_items/congestionmanagementprogram.original.pdf.
Riverside Transit Agency (RTA). 2016, May 8. Route 79 Schedule. http://www.riversidetransit.com/images/stories/DOWNLOADS/ROUTES/079.pdf.

RMC Water and Environment. 2016, June. Eastern Municipal Water District 2015 Urban Water Management Plan. http://www.emwd.org/home/showdocument?id=1506.

South Coast Air Quality Management District (SCAQMD). 1993. California Environmental Quality Act Air Quality Handbook.
___ 2008, July. Final Localized Significance Threshold Methodology. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf.
——_ 2011. Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf.
—_ 2013, February. Final 2012 Air Quality Management Plan. http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan.

Southern California Association of Governments (SCAG). 2016, April. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

Summitwest Environmental, Inc. 2017, May 29. Fairy Shrimp Survey.
US Army Corps of Engineers (Corps). 2017, April 11. Navigable Waters in Los Angeles District.
US Census Bureau (USCB). 2016, November 23. American Factfinder: Table DP04: Selected Housing Characteristics: 2010-2014 American Community Survey 5-Year Estimates. French Valley CDP, California.
https:// factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk.
US Department of Housing and Urban Development (HUD). 1985, March. The Noise Guidebook: A Reference Document for Implementing the Department of Housing and Urban Development's Noise Policy. Washington, DC: The Division.

## 4. References

US Environmental Protection Agency (USEPA). 1971, December. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. Prepared by Bolt, Beranek \& Newman (Cambridge, MA) for the U.S. EPA Office of Noise Abatement and Control. Washington, D.C.
——. 1974, March. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Washington, D.C.: U.S. EPA Office of Noise Abatement and Control.
-1978, November. Protective Noise Levels. EPA 550/9-79-100. (Condensed version of 1971 and 1974 documents.)

US Geological Survey (USGS). 2016, April 7. The Modified Mercalli Intensity Scale. http://earthquake.usgs.gov/learn/topics/mercalli.php.

US Geological Survey (USGS). 2016, June 2. California Volcano Observatory. https://volcanoes.usgs.gov/observatories/calvo/.

Wald, David J., et al. 1999, August. "Relationships between Peak Ground Acceleration, Peak Ground Velocity, and Modified Mercalli Intensity in California." Earthquake Spectra 15 No. 3.

Western Riverside Council of Governments (WRCOG). 2013, February 4. 2010-2035 Western Riverside County Growth Forecasts. http://www.wrcog.cog.ca.us/uploads/media_items/wrcog-growth-forecast-2010-2035.original.pdf.

## 5. List of Preparers

## COUNTY OF RIVERSIDE

Larry Ross, Principal Planner<br>Heather Thomson, County Archeologist<br>Savannah Jones, Ecological Resources Specialist II<br>\section*{TEMECULA VALLEY CHARTER SCHOOL}

Mark Horn, Board President

## PLACEWORKS

Dwayne Mears, AICP, Principal, Environmental Services

Michael Milroy, Associate

Fernando Sotelo, P. E., Senior Associate, Transportation

Stephanie Chen, Project Engineer
Natalie Foley, Project Engineer
Cary Nakama, Graphic Artist

## 5. List of Preparers

This page intentionally left blank.

## Appendix A Health Risk Assessment

# Temec ula Valley Charter School 

Prepared for:
Temecula Valley Charter School Contact: Mark Horn, Board President

35755 Abelia Street
Winchester, California 92596
951.294.6780

Prepared by:
PlaceWorks
Contact: Steve Bush, PE
1625 Shattuck Avenue, Suite 300
Berkeley, California 94709
510.848.3815
510.848.4315(f)
www.placeworks.com

TVCS-02.2
Section ..... Page

1. INTRODUCTION ..... 1
2. PROJECT DESCRIPTION .....  3
3. SOURCE IDENTIFICATION ..... 7
4. SOURCE CHARACTERIZATION ..... 9
5. AIR DISPERSION MODELING ..... 11
6. RISK CHARACTERIZATIONS ..... 13
6.1 CARCINOGENIC CHEMICAL RISK ..... 13
6.2 NON-CARCINOGENIC HAZARDS ..... 14
6.3 CRITERIA AIR POLLUTANTS ..... 15
6.4 ACCIDENTAL RELEASES ..... 17
7. CONCLUSIONS ..... 19
8. REFERENCES ..... 21

## Table of Contents

## List of Figures

Figure Page
Figure 1 Site Location ..... 5

## List of Tables

Table ..... Page
Table 1 Emission Sources ..... 7
Table $2 \quad$ Vehicle Fleet Mix Profile ..... 9
Table 3 Compounds Emitted from Mobile Sources ..... 10
Table 4 California Ambient Air Quality Standards ..... 15
Table 5 Localized Significance Thresholds ..... 16
Table 6 Lake Elsinore Monitoring Station Summary ..... 16
Table 7 Health Risk Assessment Results ..... 19

## List of Appendices

[^18]
## 1. Introduction

The Temecula Valley Charter School Board of Directors is seeking approval from Riverside County for development of a public charter school for 600 kindergarten through $8^{\text {th }}$ grade ( $\mathrm{K}-8$ ) students in the Community of French Valley in unincorporated Riverside County on two parcels on the west side of Winchester Road (State Route 79) between Keller Road and Pourroy Road.

Regulations pertaining to the siting of new schools or modernization of existing schools in California require compliance with the California Code of Regulations (CCR) Title 5 standards. For new schools, Title 5 studies must demonstrate that facilities with the potential to emit hazardous air pollutants within a quarter-mile radius of the school site will not constitute an actual or potential public health risk to students and staff that will attend the school. This health risk assessment (HRA) involved conducting the following tasks:

- Emissions associated with vehicles and trucks traveling on State Route 79 (SR-79), which is approximately 60 feet southeast of the project boundary, and were evaluated. Because the site is within 500 feet of the edge of a freeway traffic lane or busy traffic corridor, criteria air pollutants as well as toxic air contaminants (TACs) were also evaluated to determine if air quality at the proposed site poses a short-term or long-term exposure risk to students and staff.
- Facilities within a quarter-mile (1,320-foot) radius of the proposed site that might reasonably emit hazardous or acutely hazardous air emissions were identified and evaluated.
- Air dispersion modeling, using the AERMOD computer model, was conducted to quantify maximum ground-level concentrations for receptors at the project site. Meteorological data from the nearest South Coast Air Quality Management District (SCAQMD) monitoring station with similar meteorological conditions were used to represent local weather conditions and prevailing winds.
- Cancer and non-cancer risks to students and staff attending the school site were determined, based on the results of the AERMOD modeling. The assessment considered exposure through the inhalation pathway. Unit Risk Factors (URFs) and Cancer Potency Factors (CPFs) were used to determine carcinogenic risk and Recommended Exposure Limits (RELs) were used to determine non-carcinogenic risk.
- A health risk assessment report has been prepared that compares the calculated risks with thresholds established by the SCAQMD and California Air Resources Board's (CARB) Air Toxics "Hot Spots" Program (AB2588).


## 1. Introduction

The assessment and dispersion modeling methodologies used in the preparation of this report included all relevant and appropriate procedures developed by the US Environmental Protection Agency (USEPA) and Office of Environmental Health Hazard Assessment (OEHHA). These methodologies and assumptions were used to ensure that the assessment effectively quantified school-based impacts associated with emission sources.

It should be noted that these health impacts were based on conservative (i.e., health protective) assumptions. The USEPA (2005) and OEHHA (2015) note that conservative assumptions used in a risk assessment are intended to ensure that the estimated risks do not underestimate the actual risks. Therefore, the estimated risks do not necessarily represent actual risks experienced by populations at or near a site. The use of conservative assumptions tends to produce upper-bound estimates of risk and usually overestimate exposure and thus risk. For this school-based risk assessment, the following conservative assumptions were used:

- It was assumed that maximum exposed children and adults stood outside at the site for 8 hours per day, 180 days per year for 9 years (K-8 students) or 250 days per year for 25 years (staff). In reality, students and staff are exposed to outdoor pollutant concentration levels only during nutrition, lunch, and PE class and are exposed to reduced indoor pollutant concentrations for the remaining school hours. This would result in lower estimated risk values.
- The calculated risk for children from 2-16 years is multiplied by a factor of 3 to account for early life exposure and uncertainty in child versus adult exposure impacts.

Thus, the estimated risks provided in this HRA are conservative.

## 2. Project Description

The project consists of construction and operation of a K-8 charter school for 600 students. Several onestory school buildings, totaling about 45,000 square feet of building area, would be clustered in the eastcentral part of the site around a quad. Facilities would include 31 classrooms, a multipurpose room, administrative space, and a library/media center. The multipurpose building, which would be built in the south-central part of the site, would be about 30 feet high, and the remainder of the buildings would be about 15 feet high. The charter school could open as early as 2017.

The project site is surrounded by rural residential uses to the west and north; a single-family home on one of the rural residential properties abuts the west part of the north site boundary. The project site is surrounded by vacant land to the south; and by vacant land and agricultural uses to the east opposite SR-79. Lake Skinner Recreation Area is about 1.7 miles to the southeast, and Diamond Valley Lake is about three miles to the northeast. The Interstate 215 freeway is about 4.1 miles to the west. Two concrete culverts pass under SR-79 east of the project site, carrying storm water southeastward under the roadway.

The project site and vicinity are depicted in Figure 1.

## 2. Project Description

This page intentionally left blank.

Figure 1 - Site Location


## 2. Project Description

This page intentionally left blank.

## 3. Source Identification

The health risk assessment evaluated the impact of potential long-term (chronic) exposure to air toxic emissions generated by vehicles traveling along SR-79 (mile post 7.63 ). Due to the proximity of the project site to SR-79, potential long-term (chronic) exposure to air toxic emissions and short-term (acute) health impacts from exposures to criteria pollutants (particulate matter, carbon monoxide, and nitrogen dioxide) were evaluated.

Properties within a quarter-mile radius (1,320 feet) were surveyed using aerial photography and SCAQMD's Facility Information Detail (FIND) database to identify facilities that have the potential to generate hazardous and acutely hazardous air emissions. Due to the rural nature of the surrounding area, no additional permitted or non-permitted facilities were identified. Additionally, the Riverside County Agricultural Commissioner's Office (County) implements a general permit condition to growers in the County specifically preventing the ground application of pesticides or herbicides within a $1 / 4$-mile of a school during school hours. In addition to preventing pesticide application during school hours, the County prohibits pesticide spraying during nonschool hours for major school events. Since active growers in the County would be prevented from spraying pesticides during school hours within a $1 / 4$-mile radius of the site, there should be no adverse health impacts on students and staff at the proposed elementary school from pesticide or herbicide spraying.

A summary of the emissions sources evaluated during this assessment is provided below in Table 1.

Table 1 Emission Sources

| Source |  | Location |
| :--- | :--- | :--- |
| State Route 79 | Mile Post 7.63 |  |

## 3. Source Identification

This page intentionally left blank.

## 4. Source Characterization

Vehicle emissions contribute significantly to localized concentrations of air contaminants. Typically, emissions generated from these sources depend on vehicle mix, the percentage of heavy duty diesel trucks, the rate at which pollutants are generated during the course of travel, and the number of vehicles traveling along the roadway network.

The peak hourly traffic for the section of SR-79 nearest the project site was determined from the Traffic Impact Analysis for Temecula Valley Charter School (PlaceWorks, 2016). Additionally, projected future peak hourly traffic was determined from the 2014 Final State Route 79 Realignment Supplemental Traffic Report (Riverside County Transportation Commission), assuming realignment project approval. To produce a representative vehicle fleet distribution of gasoline fueled and diesel fueled vehicles, the assessment utilized an estimate of vehicle mix based on annual truck traffic reports from the California Department of Transportation, Traffic Branch (Caltrans). Table 2 lists the identified peak hourly traffic volumes and diesel truck percentage considered in the assessment.

Table 2 Vehicle Fleet Mix Profile

| Roadway | Peak Hourly Vehicle Traffic (Veh/hr) ${ }^{1}$ | Truck Percentage $^{2}$ |
| :---: | :---: | :---: |
| SR-79 (Mile Post 7.63) | $2016-1,964$ | 10 |
|  | $2040-7,212$ | 10 |

Sources:
12016 peak hour traffic from Traffic Impact Analysis for Temecula Valley Charter School (PlaceWorks, 2016); projected 2040 peak hourly traffic from 2014 Final State Route 79 Realignment Supplemental Traffic Report (Riverside County Transportation Commission), assuming realignment project approval.
2 Caltrans Traffic Census Website. http://traffic-counts.dot.ca.gov/.

The truck percentage for each evaluated roadway segment was used to estimate the number of diesel trucks traveling on each roadway. To determine variances in hourly traffic volumes, the assessment used data available through the Caltrans Performance Measurement System (Caltrans PeMS, 2016). An average annual traffic increase was determined using the 2016 and 2040 peak hour traffic volumes. To account for the emission standards representative of the California fleet, the Air Resources Board has developed the EMFAC2014 emission factor model. EMFAC2014 was used to identify pollutant emission rates for total organic gases (TOG), diesel particulate matter (DPM), carbon monoxide (CO) and nitrogen dioxide $\left(\mathrm{NO}_{2}\right)$. The $\mathrm{PM}_{10}$ emission factor was used as the surrogate for DPM. To quantify the toxic air contaminants (TACs) associated with the TOG fraction, the speciation profile provided by the Bay Area Air Quality Management District (2012) was used.

For particulate matter $\left(\mathrm{PM}_{10}\right.$ and $\left.\mathrm{PM}_{2.5}\right)$, emissions were quantified as the sum of re-entrainment of paved roadway dust and tailpipe emissions. The predictive emission equation developed by the USEPA (AP-42, Section 13.2.1) was used to generate the entrained dust source strength.

## 4. Source Characterization

A list of emitted compounds for the mobile-source category is presented in Table 3. Appendix A presents the emission rate calculations for each source considered in the assessment. Appendix B contains a graphical representation of each emitting source.

Table 3 Compounds Emitted from Mobile Sources

| Source | Contaminant |
| :--- | :--- |
|  | Diesel Particulate Matter (DPM) |
| Acetaldehyde, Acrolein, Benzene, 1,3-Butadiene, Ethylbenzene, |  |
| SR-79 (gasoline vehicles and diesel trucks) | Formaldehyde, Hexane, Methanol, Methyl Ethyl Ketone, <br> Naphthalene, Propylene, Styrene, Toluene, Xylenes <br> Particulate Matter (PM 10 |
|  | Cand PM PM 2.5 |
|  | Nitrogen Monoxide Dioxide |,

Note: EMFAC2014 generates emission factors for nitrogen oxides ( NOx ). To convert to nitrogen dioxide, an $\mathrm{NO}_{2}$ to $\mathrm{NOx}^{\text {ratio }} 0$ of 0.053 was applied. The $\mathrm{NO}_{2}$ conversion rate was derived from a report entitled Final Localized Significance Threshold Methodology (SCAQMD, 2008).

## 5. Air Dispersion Modeling

To assess the impact of emitted compounds on individuals who may work and/or attend classes at the proposed school facility, air quality modeling using the AERMOD atmospheric dispersion model was performed. The model is a steady state Gaussian plume model and is recommended by SCAQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain.

The model requires additional input parameters, including chemical emission data and local meteorology. Inputs for each emitting source were based on the characterizations referenced in Section 4. Meteorological data provided by SCAQMD for the Lake Elsinore meteorological station (2008-2012) were used to represent local weather conditions and prevailing winds. According to the wind rose for the Lake Elsinore, presented in Appendix A, the prevailing wind direction in the area of the project site is to the southwest.

The modeling analysis also considered the spatial distribution of each emitting source in relation to the project site. To accommodate the model's Cartesian grid format, direction-dependent calculations were obtained by identifying the Universal Transverse Mercator coordinates for each source. In addition, digital elevation model (DEM) data for the area were obtained and included in the model runs to account for complex terrain. For all modeling runs, a unit emission rate of 1 gram per second $(\mathrm{g} / \mathrm{s})$ was used. The unit emission rates were proportioned among the volume sources for mobile sources (e.g. SR-79). The maximum AERMOD concentrations from the output files were then multiplied by the emission rates calculated in Appendix A to obtain the maximum ground-level concentrations at the school site.

For mobile sources, two sets of volume sources were modeled in AERMOD. One set of volume sources representing the motor vehicles traveling along the mobile sources was used to characterize emissions of TOG, $\mathrm{CO}, \mathrm{NO}_{x}, \mathrm{PM}_{10}$, and $\mathrm{PM}_{2.5}$. For this run, a release height of 0.60 meters was used (CARB, 2000). The second set of volume sources representing truck traffic was used to characterize emissions of DPM. For this set of sources, a release height of 4.15 m was used. Different emission factors were used to characterize TOG and DPM emissions from vehicle traffic traveling along SR-79 due to different exposure periods for adult staff and students. For the adult staff exposure scenario, a 25 -year exposure period was used, as per the new OEHHA guidance for worker exposure. A 9-year exposure period was used for the student exposure scenario representing the school years for kindergarten through 8th grade.

The AERMOD output for the emission sources is presented in Appendix C. The ground-level concentrations used in the risk calculation spreadsheets are provided in Table D1 of Appendix D . The annual average concentrations from the AERMOD runs were used to determine cancer risk and chronic non-cancer risk, and the maximum one-hour concentrations were used to determine acute non-cancer risk. Additionally, CARB's Hotspots Analysis and Reporting Program (HARP2), Risk Assessment Standalone Tool was used to determine the 8 -hour chronic non-cancer risk; the program determines the 8 -hour non-cancer risk from the annual average concentrations (CARB, 2016).

## 5. Air Dispersion Modeling

This page intentionally left blank.

## 6. Risk Characterizations

### 6.1 CARCINOGENIC CHEMICAL RISK

Carcinogenic compounds are not considered to have threshold levels (i.e., dose levels below which there are no risks). Any exposure, therefore, will have some associated risk. The SCAQMD has established a maximum incremental cancer risk of 10 in a million ( $1 \times 10^{-5}$ ) for CEQA projects and the OEHHA also sets a typical risk management level as 10 in a million (OEHHA, 2015).

Health risks associated with exposure to carcinogenic compounds at the proposed project site can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. Under a deterministic approach (i.e., point estimate methodology), the cancer risk probability is determined by multiplying the chemical's annual concentration by its cancer potency factor (CPF), a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It is an upper-limit estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter $\left(\mu \mathrm{g} / \mathrm{m}^{3}\right)$ over a lifetime of 70 years.

Recent guidance from OEHHA recommends a refinement to the standard point estimate approach with the use of age-specific breathing rates and age sensitivity factors (ASFs) to assess risk for susceptible subpopulations such as children. For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose for each age group. Once determined, contaminant dose is multiplied by the cancer potency factor in units of inverse dose expressed in milligrams per kilogram per day $(\mathrm{mg} / \mathrm{kg} / \text { day })^{-1}$ to derive the cancer risk estimate. Therefore, to accommodate the unique exposures associated with the proposed school population, the following dose algorithm was used.

$$
\text { Dose }_{\text {AIR,per age group }}=\left(\mathrm{C}_{\mathrm{air}} \times \mathrm{EF} \times\left[\frac{\mathrm{BR}}{\mathrm{BW}}\right] \times \mathrm{A} \times \mathrm{CF}\right)
$$

Where:

$$
\begin{array}{ll}
\text { Dose }_{\text {AIR }} & =\text { dose by inhalation }(\mathrm{mg} / \mathrm{kg} \text {-day }) \text {, per age group } \\
\mathrm{C}_{\text {air }} & =\text { concentration of contaminant in air }\left(\mu \mathrm{g} / \mathrm{m}^{3}\right) \\
\mathrm{EF} & =\text { exposure frequency (number of days } / 365 \text { days }) \\
\mathrm{BR} / \mathrm{BW} & =\text { daily breathing rate normalized to body weight }(\mathrm{L} / \mathrm{kg} \text {-day }) \\
\mathrm{A} & =\text { inhalation absorption factor }(\text { default }=1) \\
\mathrm{CF} & =\text { conversion factor }\left(1 \times 10^{-6}, \mu \mathrm{~g} \text { to } \mathrm{mg}, \mathrm{~L} \text { to } \mathrm{m}^{3}\right)
\end{array}
$$

The inhalation absorption factor (A) is a unitless factor that is only used if the cancer potency factor included a correction for absorption across the lung. For this assessment, the default value of 1 was used. To represent the unique characteristics of the school population, the assessment employed the USEPA's guidance to develop viable dose estimates based on reasonable maximum exposure, defined as the "highest exposure that

## 6. Risk Characterizations

is reasonably expected to occur" for a given receptor population. Lifetime risk values for the student population were adjusted to account for an exposure of 180 days per year for 9 years (kindergarten through 8th grade). In addition, the calculated risk for students is multiplied by an ASF weighting factor of 3 (for children ages 2 to 16) to account for early life sensitivity to pollutant exposures (OEHHA, 2015). To assess staff-related risk, exposures were adjusted to account for an employment period of 250 days per year for 25 years. This timeline is considered appropriate for potential workplace exposures established by OEHHA (2015).

To calculate the overall cancer risk, the risk for each appropriate age group is calculated per the following equation:

$$
\text { Cancer Risk }{ }_{\mathrm{AIR}}=\text { Dose }_{\mathrm{AIR}} \times \mathrm{CPF} \times \mathrm{ASF} \times \frac{\mathrm{ED}}{A T}
$$

Where:

| Dose $_{\text {AIR }}$ | $=$ dose by inhalation $(\mathrm{mg} / \mathrm{kg}$-day), per age group |
| :--- | :--- |
| CPF | $=$ cancer potency factor, chemical-specific $(\mathrm{mg} / \mathrm{kg} \text {-day })^{-1}$ |
| ASF | $=$ age sensitivity factor, per age group |
| ED | $=$ exposure duration (years) |
| AT | $=$ averaging time period over which exposure duration is averaged (always 70 years) |

The CPFs used in the assessment were obtained from OEHHA guidance. The cancer risk is calculated separately for the students and staff, because of age differences in sensitivity to carcinogens and age differences in intake rates. The final step converts the cancer risk in scientific notation to a whole number that expresses the cancer risk in "chances per million" by multiplying the cancer risk by a factor of $1 \times 10^{6}$ (i.e. 1 million).

CARB's Hotspots Analysis and Reporting Program (HARP2), Risk Assessment Standalone Tool was used to calculate the cancer risk values (CARB, 2016). The determined cancer risks attributed to each chemical exposure and summation of those risks are presented in Appendix D, Table D2.

### 6.2 NON-CARCINOGENIC HAZARDS

An evaluation of the potential non-cancer effects of chronic and acute chemical exposures was also conducted. Under the point estimate approach, adverse health effects are evaluated by comparing the annual ground level concentration of each chemical compound with the appropriate Reference Exposure Level (REL). Available RELs promulgated by OEHHA were considered in the assessment.

To quantify non-carcinogenic impacts, the hazard index approach was used. The hazard index assumes that chronic or acute sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For each discrete chemical exposure, target organs presented in regulatory guidance were used. To calculate the hazard index, each chemical concentration or dose is divided by the appropriate toxicity value. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds one, a health hazard is presumed to exist.

## 6. Risk Characterizations

CARB's HARP2, Risk Assessment Standalone Tool was used to calculate the chronic and acute health risk values (CARB, 2016). The determined non-cancer hazard quotient for identified compounds generated from each source and a summation for each toxicological endpoint are presented in Appendix D, Tables D2-D4.

### 6.3 CRITERIA AIR POLLUTANTS

The State of California has promulgated ambient air quality standards for various pollutants. These standards were established to safeguard the public's health and welfare with specific emphasis on protecting those individuals susceptible to respiratory distress, such as asthmatics, the young, the elderly, and those with existing conditions that may be affected by increased pollutant concentrations. A list of criteria air pollutants considered in the assessment and their associated air quality standards are presented in Table 4.

Table 4 California Ambient Air Quality Standards

| Pollutant | Standard | Health Effects |
| :--- | :--- | :--- |
| Carbon Monoxide <br> (CO) | $>9.0 \mathrm{ppm}$ (8 hr avg.) <br> $>20.0 \mathrm{ppm}$ (1 hr avg.) | 1) Aggravation of angina pectoris and other aspects of coronary heart disease. <br> 2) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease. <br> 3) Impairment of central nervous system functions. <br> 4) Possible increased risk to fetuses. |
| Nitrogen Dioxide <br> $\left(\mathrm{NO}_{2}\right)$ | $\geq 0.030 \mathrm{ppm}$ (annual avg.) <br> $\geq 0.18 \mathrm{ppm}$ (1 hr avg.) | 1) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive <br> groups. <br> 2) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular <br> changes and pulmonary structural changes. |
| Particulates <br> $\left(\mathrm{PM}_{10}\right)$ | $>50 \mu \mathrm{~g} / \mathrm{m}^{3}$ (24 hr avg.) |  |
| $20 \mu \mathrm{~g} / \mathrm{m}^{3}$ (annual avg.) |  |  | | 1) Excess deaths from short-term exposures and the exacerbation of symptoms in sensitive |
| :--- |
| individuals with respiratory disease. |
| 2) Excess seasonal declines in pulmonary function especially in children. |

Notes: ppm: parts per million; $\mu \mathrm{g} / \mathrm{m}^{3}$ : micrograms per cubic meter
Source: California Code of Regulations, Title 17, Section 70200.
Pollutant emissions are considered to have a significant effect on the environment if they result in concentrations that create either a violation of an ambient air quality standard, contribute to an existing air quality violation, or expose sensitive receptors to significant pollutant concentrations. Should ambient air quality already exceed existing standards, SCAQMD has established significance criteria that identify incremental air concentrations for selected pollutants. Table 5 outlines the significance thresholds considered for sites that are within an air basin where criteria pollutants exceed air quality standards.

## 6. Risk Characterizations

Table 5 Localized Significance Thresholds

| Pollutant | Averaging Time | Significance Criteria |
| :--- | :--- | :--- |
| Carbon Monoxide (CO) | 8 Hours <br> 1 Hour | Project contributes to exceedance of 9.0 ppm <br> Project contributes to exceedance of 20 ppm |
| Nitrogen Dioxide $\left(\mathrm{NO}_{2}\right)$ | Annual <br> 1 Hour | Project contributes to exceedance of 0.03 ppm <br> Project contributes to exceedance of 0.18 ppm |
| Particulates $\left(\mathrm{PM}_{10}\right)$ | Annual <br> 24 Hours | Project causes an incremental increase of $1.0 \mu \mathrm{~g} / \mathrm{m}^{3}$ <br> Project causes an incremental increase of $2.5 \mu \mathrm{~g} / \mathrm{m}^{3}$ |
| Particulates $\left(\mathrm{PM}_{2.5}\right)$ | Project causes an incremental increase of $2.5 \mu \mathrm{~g} / \mathrm{m}^{3}$ |  |

Notes: ppm: parts per million; $\mu \mathrm{g} / \mathrm{m}^{3}$ : micrograms per cubic meter
Source: SCAQMD, 2015. SCAQMD Air Quality Significance Thresholds accessed online at http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.
The nearest active air quality monitoring station to the project site is the Lake Elsinore Monitoring Station. Background concentrations are based on the highest observed value for the most recent three-year period. $\mathrm{PM}_{10}$ and $\mathrm{PM}_{2.5}$ data were not collected for the Lake Elsinore Monitoring Station. Therefore, $\mathrm{PM}_{10}$ and $\mathrm{PM}_{2.5}$ data from the nearest monitoring station with available data (Perris Valley Monitoring Station and Metropolitan Riverside County 1, respectively) were used for particulate analysis. A summary of the monitoring station data is presented in Table 6.

Table 6 Lake Elsinore Monitoring Station Summary

|  | Year |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Pollutant/Averaging Time | 2014 | 2013 | 2012 | Maximum | CAAQS |
| Carbon Monoxide (CO) |  |  |  |  |  |
| 1-Hour | 2.0 | NM | NM | 2.0 | 20 |
| 8-Hour | 1.4 | 0.6 | 0.7 |  | 9 |
| Nitrogen Dioxide (NO2) |  |  |  |  |  |
| 1-Hour | 0.0453 | 0.0466 | 0.0483 | 0.0483 | 0.18 |
| Annual | 0.0082 | 0.0084 | 0.0102 | 0.0102 | 0.030 |
| Particulates (PM10) | 87 |  |  |  | 87 |
| 24-Hour | 35.1 | 33 | 62 | 35.1 | 50 |
| Annual |  |  | 26.5 |  | 20 |
| Particulates (PM2.5) | 12.5 | 12.5 | 13.5 | 13.5 |  |
| Annual |  |  |  | 12 |  |

Note: Particulates ( $\mathrm{PM}_{10}$ and $\mathrm{PM}_{2.5}$ ) from the Perris Valley and Metropolitan Riverside County 1 Monitoring Stations, respectively, are expressed in micrograms per cubic meter ( $\mu \mathrm{g} / \mathrm{m}^{3}$ ). All others are expressed in parts per million (ppm). NM - not monitored that particular year.
Source: SCAQMD, Historical Data by Year, http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year.
For carbon monoxide $(\mathrm{CO})$ and nitrogen dioxide $\left(\mathrm{NO}_{2}\right)$, background concentrations are below the current air quality standards. Therefore, impacts are considered to be significant when pollutant concentrations, added to existing background levels, result in an exceedance of the CAAQS.

For particulate emissions, maximum background concentrations in the vicinity of the site exceed the California Ambient Air Quality Standard (CAAQS) for the annual average averaging times for $\mathrm{PM}_{10}$ and $\mathrm{PM}_{2.5}$, and the CAAQS for the 24 -hour averaging time for $\mathrm{PM}_{10}$ concentrations. Additionally for $\mathrm{PM}_{10}$ and $\mathrm{PM}_{2.5}$ emissions, the project site is within a non-attainment area for particulates (CARB, 2013). As a result,

## 6. Risk Characterizations

SCAQMD defines a significant impact as $\mathrm{PM}_{10}$ and $\mathrm{PM}_{2.5}$ concentrations that exceed the specified localized significance threshold (LST) of $2.5 \mu \mathrm{~g} / \mathrm{m}^{3}$, over an averaging time of 24 hours, and $1.0 \mu \mathrm{~g} / \mathrm{m}^{3}$, for annually averaged concentrations.

Appendix D, Table D5, presents the criteria air pollutant ground level concentrations at the project site determined using AERMOD.

### 6.4 ACCIDENTAL RELEASES

Under the auspices of the California Accidental Release Prevention (CalARP) Program, should a stationary source use more than a threshold quantity of a regulated hazardous substance, a Risk Management Plan (RMP) which includes a risk assessment of accidental releases is required to be conducted pursuant to the provisions of the federal Accidental Release Prevention program (Title 40, Code of Federal Regulations, Part 68) Article 2, Chapter 6.95 of the Health and Safety Code.

A review of the available information collected during the source identification process (e.g., regulatory records review and on-site interviews with business owner/operators) did not reveal the presence of any CalARP program facilities within 0.25 mile of the proposed site (Center of Effective Government, 2014).

## 6. Risk Characterizations

This page intentionally left blank.

## 7. Conclusions

The results of the health risk assessment are provided in Table 7. The excess cancer risk was calculated to be 0.48 per million for adult school staff and 1.13 per million for students. In comparison to the threshold level of 10 in a million, carcinogenic risks are well below the significance threshold value for both school staff and students. For non-carcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one for both school staff and students. Therefore, chronic non-carcinogenic hazards are below the significance threshold. Additionally, the acute 1-hour and 8 -hour non-carcinogenic hazards were below the significance thresholds.

Table 7 Health Risk Assessment Results

| Source | Cancer Risk (per million) |  | Chronic Hazard <br> Index | Acute (1-Hour) <br> Hazard Index | 8-Hour Hazard <br> Index |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | Staff Exposure | Student Exposure |  |  |  |
| State Route 79 | 0.48 | 1.13 | 0.003 | 0.012 | 0.002 |
| SCAQMD Threshold | 10 | 10 | 1.0 | 1.0 | 1.0 |
| Exceeds Threshold | No | No | No | No | No |

Source: Lakes AERMOD View, 9.1.0, 2015.
A comparison of the current air quality standards with the results of the modeling analysis for SR-79 vehicle emissions is provided below:

- For carbon monoxide (CO), the maximum one-hour concentration of 0.26 ppm and the maximum eight-hour concentration of 0.07 ppm , when added to existing background levels, do not exceed the CAAQS.
- For nitrogen dioxide $\left(\mathrm{NO}_{2}\right)$, maximum one-hour and annual concentrations of 0.004 ppm and 0.00005 ppm were calculated, respectively. These concentrations, when added to existing background levels, do not exceed the CAAQS.
- For $\mathrm{PM}_{10}$, a maximum 24 -hour concentration of 1.67 micrograms per cubic meter $\left(\mu \mathrm{g} / \mathrm{m}^{3}\right)$ was predicted. The maximum 24-hour concentration does not exceed the SCAQMD significance threshold of $2.5 \mu \mathrm{~g} / \mathrm{m}^{3}$. Additionally, an annual average concentration of $0.28 \mu \mathrm{~g} / \mathrm{m}^{3}$ was predicted. The annual average concentration also does not exceed the SCAQMD significance threshold of $1.0 \mu \mathrm{~g} / \mathrm{m}^{3}$.
- For $\mathrm{PM}_{2.5}$, a maximum 24-hour concentration of $0.39 \mu \mathrm{~g} / \mathrm{m}^{3}$ was predicted. The maximum 24 -hour concentration for $\mathrm{PM}_{2.5}$ does not exceed the SCAQMD significance threshold of $2.5 \mu \mathrm{~g} / \mathrm{m}^{3}$.


## 7. Conclusions

Based on a comparison to the carcinogenic and non-carcinogenic thresholds established by OEHHA and SCAQMD, hazardous air emissions generated from the stationary and mobile sources within a quarter-mile radius are not anticipated to pose an actual or potential endangerment to students and staff occupying the project site and no mitigation measures are required.

## 8. References

Bay Area Air Quality Management District (BAAQMD). 2012. Recommended Methods for Screening and Modeling Local Risks and Harards.

California Air Pollution Control Officers Association (CAPCOA). 2009. Health Risk Assessments for Proposed Land Use Projects.

California Air Resources Board (CARB). 2016. Hotspots Analysis and Report Program (HARP2), Risk Assessment Standalone Tool (RAST), Version 16057.
__. 2014. EMFAC2014 - Calculating Emission Inventories for Vehicles in California.
__. 2013. Area Designations Maps/State and National.
—_ 2000. Risk. Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.
California Department of Transportation (Caltrans). 2016. Performance Measurement System (PeMS). Accessed September 26, 2016 at http://pems.dot.ca.gov.
$\qquad$ . 2014. Traffic Data Branch. http://traffic-counts.dot.ca.gov. Accessed September 29, 2016.

Center of Effective Government. 2014. The Right-to-Know Network accessed on September 29, 2016 at http://www.rtknet.org/db/rmp.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk. Assessments. Dated February, 2015.

PlaceWorks. 2016. Traffic Impact Analysis for Temecula Valley Charter School. Dated October 2016.
Riverside County Transportation Commission. 2014. 2014 Final State Route 79 Realignment Supplemental Traffic Report. Prepared by CH2MHILL. Dated September 17, 2014.

South Coast Air Quality Management District (SCAQMD). 2015. Air Quality Significance Thresholds. http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/. Accessed November 18, 2015.
—_. 2014. Historical Data By Year. http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year. Accessed September 27, 2016.
__. 2008-2012. Data Set for Lake Elsinore Meteorological Station.

## 8. References

United States Environmental Protection Agency (USEPA). 2015. Technology Transfer Network, Clearinghouse for Inventories and Emission Factors. Compilation of Air Pollutant Emission Factors. http://www.epa.gov/ttnchie1/ap42. Accessed September 26, 2016.
2005. Guideline on Air Quality Models (Revised). EPA-450/2-78-027R.

## Appendix A. Emission Rate Calculations

## Appendix

This page intentionally left blank.

## Vehicle Mix Worksheet

## Table A: Traffic Volumes

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Peak Hour | Truck | Annual | School |
|  |  | Traffic | Traffic | Percentage | Increase in | Buildout |
| Route | Mile Post | Data Year | $(\mathrm{veh} / \mathrm{hr})$ | $(\%)$ | Traffic (\%) | Year |
| State Route 79 | 7.63 | 2016 | 1,964 | $10.0 \%$ | $5.6 \%$ | 2017 |

## Sources:

Traffic data from Traffic Impact Analysis for Temecula Valley Charter School (2016) and truck percentage from CalTrans, Traffic Data Branch (2014). Website: http://traffic-counts.dot.ca.gov.
Annual traffic increase based on projected growth rate to 7,212 peak hour trips by 2040 (ADT 75,600) from 2014 Final State Route 79 Realignment Supplemental Traffic Report (Riverside County Transportation Commission), with realignment project approval.

## Table B: Highway Parameters

|  | Width of <br> Link length <br> $(\mathrm{m})$ |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Link/Segment | Source <br> roadway <br> $(\mathrm{m})$ | Separation <br> $(\mathrm{m})$ | Roadway <br> Configuration | Mile Post | Speed |  |
| State Route 79 | 999 | 18.5 | 18.5 | At-Grade | 7.63 | 65 mph |

## Table C: Segment Volumes

|  | Period <br> Length <br> (years) | Hourly <br> All <br> Vehicles | Hourly | Hourly <br> TOG Vehicles |
| :--- | :---: | :---: | :---: | :---: |
| $2017^{1}$ | 3 | $\mathbf{2 , 0 7 3}$ | $\mathbf{1 , 8 6 6}$ | 207 |
| $2020^{1}$ | 5 | 2,439 | 2,196 | 244 |
| $2025^{1}$ | 5 | 3,199 | 2,879 | 320 |
| $2030^{1}$ | 5 | 4,194 | 3,775 | 419 |
| $2035^{1}$ | 5 | 5,500 | 4,950 | 550 |
| $2040^{1}$ | 2 | 7,212 | 6,491 | 721 |
| 25-year weighted average ${ }^{2}$ | 25 | 3,892 | $\mathbf{3 , 5 0 3}$ | $\mathbf{3 8 9}$ |
| 9-year weighted average ${ }^{3}$ | 9 | 2,402 | $\mathbf{2 , 1 6 2}$ | $\mathbf{2 4 0}$ |

[^19]
## Average Emission Factors for School Based Receptors

## Weighting Emission Factors

Adjusting the EMFAC2014 emission factors to account for reductions in factors over the exposure duration.

| Risk Year | Modeling Year | Period | WF | Weightin | Factor | 55 mph - En | actors (g/mi) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Period | Factor | TOG-gas | PM10-dsI |
| 1 | 2017 | 1 | 0.040 | 2017-2019 | 0.120 | 0.0448 | 0.0539 |
| 2 | 2018 | 1 | 0.040 |  |  |  |  |
| 3 | 2019 | 1 | 0.040 |  |  |  |  |
| 4 | 2020 | 1 | 0.040 | 2020-2024 | 0.200 | 0.0328 | 0.0270 |
| 5 | 2021 | 1 | 0.040 |  |  |  |  |
| 6 | 2022 | 1 | 0.040 |  |  |  |  |
| 7 | 2023 | 1 | 0.040 |  |  |  |  |
| 8 | 2024 | 1 | 0.040 |  |  |  |  |
| 9 | 2025 | 1 | 0.040 | 2025-2029 | 0.200 | 0.0235 | 0.0058 |
| 10 | 2026 | 1 | 0.040 |  |  |  |  |
| 11 | 2027 | 1 | 0.040 |  |  |  |  |
| 12 | 2028 | 1 | 0.040 |  |  |  |  |
| 13 | 2029 | 1 | 0.040 |  |  |  |  |
| 14 | 2030 | 1 | 0.040 | 2030-2034 | 0.200 | 0.0193 | 0.0047 |
| 15 | 2031 | 1 | 0.040 |  |  |  |  |
| 16 | 2032 | 1 | 0.040 |  |  |  |  |
| 17 | 2033 | 1 | 0.040 |  |  |  |  |
| 18 | 2034 | 1 | 0.040 |  |  |  |  |
| 19 | 2035 | 1 | 0.040 | 2035-2039 | 0.200 | 0.0174 | 0.0042 |
| 20 | 2036 | 1 | 0.040 |  |  |  |  |
| 21 | 2037 | 1 | 0.040 |  |  |  |  |
| 22 | 2038 | 1 | 0.040 |  |  |  |  |
| 23 | 2039 | 1 | 0.040 |  |  |  |  |
| 24 | 2040 | 1 | 0.040 | 2040-2041 | 0.080 | 0.0163 | 0.0039 |
| 25 | 2041 | 1 | 0.040 |  |  |  |  |
| 25 -year average ${ }^{1}$ 9 -year average ${ }^{2}$ |  | 25 | 1.00 |  | 1.00 | 0.0253 | 0.0151 |
|  |  | 9 |  |  |  | 0.0357 | 0.0336 |

${ }^{1}$ Represent the 25 -year (staff) weighted average emission factors for each TAC and vehicle speed.
${ }^{2}$ Represent the 9 -year (K-8th grade) weighted average emission factors for each TAC and vehicle speed.
WF - period weighting factor

## On-Road Mobile Sources

## Emission Rate Computation

## TOG Emissions

Emission Rate $(\mathrm{gr} / \mathrm{sec})=(($ Emission Factor $\times$ Volume/Baseline $) /(1609.3 \mathrm{~m} / \mathrm{mile}) \times(3600 \mathrm{sec} / \mathrm{hr})) \times($ Link Length $)$

## 1 State Route 79

Link Length (meters) 999

Chronic - Long-term Emissions
Hourly Volume/Baseline (VPH) - Staff
Emission Factor (gr/mi) - Staff
Hourly Emission Rate (gr/sec) - Staff
1.53E-02

Hourly Volume/Baseline (VPH) - Students
Emission Factor (gr/mi) - Students
2,162
1.33E-02

Acute - Short-term Emissions
Hourly Volume/Baseline (VPH) - 2017
Emission Factor (gr/mi) - 2017
Hourly Emission Rate (gr/sec) - 2017

1,866
0.0448
1.44E-02

## On-Road Mobile Sources

## Emission Rate Computation

DPM Emissions
Emission Rate $(\mathrm{gr} / \mathrm{sec})=(($ Emission Factor $\times$ Volume/Baseline $) /(1609.3 \mathrm{~m} / \mathrm{mile}) \times(3600 \mathrm{sec} / \mathrm{hr})) \times($ Link Length $)$
$1 \quad$ State Route 79
Link Length (meters) 999
Hourly Volume/Baseline (VPH) - Staff
Emission Factor (gr/mi) - Staff

| 389 |
| ---: |
| 0.0151 |
| $\mathbf{1 . 0 1 E - 0 3}$ |

Hourly Volume/Baseline (VPH) - Students
Emission Factor (gr/mi) - Students
Hourly Emission Rate (gr/sec) - Students

On-Road Mobile Souces
Emission Rate Computation
Particulate (PM10) Emissions
For PM10 Reentrainment: Emission Factor (gr/mile) $=($ Particulate PM10 Base Emission Factor) $x$ (Road Surface Silt Loading) ${ }^{0.91} \times$ (Gross Vehicle Weight) ${ }^{1.02}$

| Particulate PM10 Base Emission Factor (gr/mi) | 1.00 |
| :--- | ---: |
| Road Surface Silt Loading (gr/m2) | 0.02 |
| Gross Vehicle Weight (tons) | 2.4 |
| PM10 Reentrainment Emission Factor (gr/mi) | 0.069 |

PM10 Reentrainment Emission Factor (gr/mi) 0.069

Emission Rate $(\mathrm{gr} / \mathrm{sec})=(($ Emission Factor $\times$ Volume/Baseline $) /(1609.3 \mathrm{~m} / \mathrm{mile}) \times(3600 \mathrm{sec} / \mathrm{hr})) \times($ Link Length $)$

1 State Route 79

| Link Length (meters) | 999 |
| :--- | ---: |
| Peak Hour Volume/Baseline (VPH) - 2017 | 2,073 |
| PM10 Vehicular Emission Factor (gr/mi) - 2017 | 0.0065 |
| Peak Hour Pollutant Reentrainment Emission Rate (gr/sec) | $2.48 \mathrm{E}-02$ |
| Peak Hour Pollutant Emission Rate (gr/sec) | $2.32 \mathrm{E}-03$ |
| Peak Hour Pollutant Emission Rate Total (gr/sec) | 2.72E-02 |

On-Road Mobile Souces
Emission Rate Computation

## Particulate (PM2.5) Emissions



Emission Rate $(\mathrm{gr} / \mathrm{sec})=(($ Emission Factor $x$ Volume/Baseline $) /(1609.3 \mathrm{~m} / \mathrm{mile}) \times(3600 \mathrm{sec} / \mathrm{hr})) \times($ Link Length $)$

1 State Route 79

| Link Length (meters) | 999 |
| :--- | ---: |
| Peak Hour Volume/Baseline (VPH) - 2017 | 2,073 |
| PM2.5 Vehicular Emission Factor (gr/mi) - 2017 | 0.0061 |
| Peak Hour Pollutant Reentrainment Emission Rate (gr/sec) | $4.20 \mathrm{E}-03$ |
| Peak Hour Pollutant Emission Rate (gr/sec) | $2.18 \mathrm{E}-03$ |
| Peak Hour Pollutant Emission Rate Total (gr/sec) | $\mathbf{6 . 3 8 E - 0 3}$ |

# On-Road Mobile Sources 

## Emission Rate Computation

## CO Emissions

Emission Rate $(\mathrm{gr} / \mathrm{sec})=(($ Emission Factor $x$ Volume/Baseline) $/(1609.3 \mathrm{~m} / \mathrm{mile}) \times(3600 \mathrm{sec} / \mathrm{hr})) \times($ Link Length $)$

1 State Route 79

Link Length (meters) 999
Peak Hour Volume/Baseline (VPH) - 2017
2,073

Emission Factor (gr/mi) - 2017
1.0849

Peak Hour Emission Rate (gr/sec) - 2017
3.88E-01

# On-Road Mobile Sources 

## Emission Rate Computation

## NOx Emissions

Emission Rate $(\mathrm{gr} / \mathrm{sec})=(($ Emission Factor $x$ Volume/Baseline) $/(1609.3 \mathrm{~m} / \mathrm{mile}) \times(3600 \mathrm{sec} / \mathrm{hr})) \times($ Link Length $)$

1 State Route 79

Link Length (meters) 999
Peak Hour Volume/Baseline (VPH) - 2017
2,073

Emission Factor (gr/mi) - 2017
0.4986

Peak Hour Emission Rate (gr/sec) - 2017
1.78E-01

Vertical Sigma Calculations - At-Grade or Above Grade Roadway
Initial Horizontal Dispersion Parameter (Sigma Y)
SY = (source separation distance)/2.15
Initial Vertical Dispersion Parameter (Sigma Z)
$\mathrm{SZ}=(1.8+0.11(\mathrm{TR})) \times(60 / 30)^{0.2}$
$\mathrm{TR}=\mathrm{W} 2 / \mathrm{U}$

Where:
W2 = traveled way half width (m)
$\mathrm{U}=$ average wind speed $(\mathrm{m} / \mathrm{s})$
State Route 79

| Width of Traveled Way (m) | 18.5 |
| :--- | :--- |
| Average Wind Speed $(\mathrm{m} / \mathrm{s})$ | 1.85 |
| Source Separation Distance (m) | 18.5 |

$$
\begin{array}{cl}
\text { SY }= & \mathbf{8 . 6 0} \\
\text { SZ }= & \mathbf{2 . 7 0}
\end{array}
$$

| PeMS - 8/1/2015-10/31/2015: SR-79 |  |  |  |  |  |  | Normalizing Factors HROFDAY Scalars ${ }^{1}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | All Vehicles VMT |  |  | Trucks VMT |  |  |  |  |  |
| Hour | Southbound | Northbound | Total VMT | Southbound | Northbound | Total VMT | Hour | Vehicles | Trucks |
| 0 | 23,180 | 23,770 | 46,950 | 0 | 0 | 0 | 1 | 0.280 | 0.000 |
| 1 | 20,847 | 19,766 | 40,613 | 0 | 0 | 0 | 2 | 0.242 | 0.000 |
| 2 | 21,077 | 18,532 | 39,609 | 0 | 0 | 0 | 3 | 0.236 | 0.000 |
| 3 | 26,023 | 19,110 | 45,133 | 0 | 0 | 0 | 4 | 0.269 | 0.000 |
| 4 | 40,777 | 23,955 | 64,732 | 44 | 0 | 44 | 5 | 0.385 | 0.039 |
| 5 | 63,555 | 33,874 | 97,430 | 285 | 0 | 285 | 6 | 0.580 | 0.253 |
| 6 | 76,064 | 50,206 | 126,269 | 458 | 31 | 489 | 7 | 0.752 | 0.433 |
| 7 | 89,252 | 58,616 | 147,868 | 697 | 129 | 826 | 8 | 0.880 | 0.732 |
| 8 | 89,795 | 55,952 | 145,747 | 681 | 47 | 729 | 9 | 0.868 | 0.646 |
| 9 | 79,393 | 57,630 | 137,022 | 509 | 56 | 565 | 10 | 0.816 | 0.501 |
| 10 | 76,090 | 59,303 | 135,393 | 462 | 64 | 526 | 11 | 0.806 | 0.466 |
| 11 | 75,866 | 62,938 | 138,804 | 455 | 113 | 568 | 12 | 0.827 | 0.503 |
| 12 | 75,297 | 66,710 | 142,007 | 450 | 216 | 666 | 13 | 0.846 | 0.590 |
| 13 | 75,867 | 69,208 | 145,076 | 462 | 294 | 756 | 14 | 0.864 | 0.670 |
| 14 | 82,501 | 74,798 | 157,299 | 549 | 412 | 962 | 15 | 0.937 | 0.852 |
| 15 | 82,434 | 83,002 | 165,435 | 557 | 516 | 1,072 | 16 | 0.985 | 0.950 |
| 16 | 84,652 | 83,206 | 167,859 | 578 | 512 | 1,090 | 17 | 1.000 | 0.965 |
| 17 | 83,664 | 84,275 | 167,938 | 579 | 549 | 1,129 | 18 | 1.000 | 1.000 |
| 18 | 76,342 | 75,699 | 152,040 | 492 | 433 | 926 | 19 | 0.905 | 0.820 |
| 19 | 60,860 | 65,749 | 126,609 | 239 | 249 | 488 | 20 | 0.754 | 0.432 |
| 20 | 48,094 | 58,028 | 106,122 | 52 | 101 | 153 | 21 | 0.632 | 0.135 |
| 21 | 41,623 | 49,594 | 91,217 | 13 | 23 | 36 | 22 | 0.543 | 0.032 |
| 22 | 34,335 | 39,368 | 73,702 | 2 | 6 | 8 | 23 | 0.439 | 0.007 |
| 23 | 28,289 | 30,565 | 58,853 | 1 | 1 | 1 | 24 | 0.350 | 0.001 |
| Max | 89,795 | 84,275 | 167,938 | 697 | 549 | 1,129 |  |  |  |

${ }^{1}$ School Hours: 8:00 AM - 4:00 PM (Hour 9-16)

Peak Hour (CalTrans): Hour 17 (5PM - 6PM)
Peak Hour (AERMOD): Hour 18 (5PM - 6PM)

| PeMS Report Description |  |  |
| :---: | :---: | :---: |
|  | Report | Aggregates>Time Series |
|  | Report link | http://pems.dot.ca.gov/?report form=1\&dnode=VDS\&content=loops\&statio |
|  | Report generated | 8/24/2016 13:37 |
|  | PeMS version | caltrans_pems-15.1.0 |
| Report Parameters |  |  |
| Southbound Segment | Parameter | Value |
|  | Quantity | Vehicle Miles Traveled (VMT) |
|  | Data | 36,288 Lane Points |
|  | Data Quality | 0\% Observed |
|  | Segment Type | VDS |
|  | Segment Name | Mainline VDS 817812 - KELLER RD OC S/O |
|  | start date | 8/1/2015 0:00 |
|  | end date | 10/31/2015 23:59 |
|  | Day of Week | Mo,Tu,We,Th,Fr |
|  | Granularity | hour |
| Report Parameters |  |  |
| Northbound Segment | Parameter | Value |
|  | Quantity | Vehicle Miles Traveled (VMT) |
|  | Data | 36,288 Lane Points |
|  | Data Quality | 0\% Observed |
|  | Segment Type | VDS |
|  | Segment Name | Mainline VDS 817813 - KELLER RD OC S/O |
|  | start date | 8/1/2015 0:00 |
|  | end date | 10/31/2015 23:59 |
|  | Day of Week | Mo,Tu, We,Th,Fr |
|  | Granularity | hour |


|  |  |  |  | L |  | VEHICLE | TRUCK | TRUCK |  | TRUCK | AADT | TOTAL | \% | TRUCK | AADT |  | EAL | YEAR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | POST | E |  | AADT | AADT | \% TOT |  | ---------- | Axle--- |  |  |  | Axle--- |  | 2-WAY | VER/ |
| RTE | DIST | CNTY | MILE | G | DESCRIPTION | TOTAL | TOTAL | VEH | 2 | 3 | 4 | $5+$ | 2 | 3 | 4 | 5+ | (1000) | EST |
| 079 | 11 | SD | 20.23 | A | JCT. RTE. 78 | 2,800 | 314 | 11.20 | 219 | 48 | 21 | 26 | 69.60 | 15.40 | 6.80 | 8.20 | 24 | 88V |
| 079 | 11 | SD | 27.37 | B | JCT. RTE. 76 WEST | 2,300 | 211 | 9.20 | 133 | 29 | 7 | 42 | 62.80 | 13.90 | 3.50 | 19.80 | 23 | 87V |
| 079 | 11 | SD | 27.37 | A | JCT. RTE. 76 WEST | 2,350 | 277 | 11.80 | 176 | 39 | 18 | 44 | 63.60 | 14.10 | 6.40 | 15.90 | 28 | 87V |
| 079 | 11 | SD | 31.7 | A | SAN FELIPE RD | 1,700 | 282 | 16.50 | 164 | 7 | 12 | 99 | 58.20 | 2.40 | 4.30 | 35.10 | 42 | 72V |
| 079 | 08 | RIV | 2.27 | B | JCT. RTE. 371 EAST | 2,800 | 466 | 16.60 | 369 | 16 | 25 | 56 | 79.30 | 3.40 | 5.30 | 12.00 | 37 | 77E |
| 079 | 08 | RIV | 2.27 | A | JCT. RTE. 371 EAST | 7,600 | 761 | 10.00 | 524 | 55 | 59 | 123 | 68.90 | 7.20 | 7.70 | 16.20 | 75 | 77E |
| 079 | 08 | RIV | R19.16 | B | JCT. RTE. 74 | 7,800 | 663 | 8.50 | 414 | 78 | 13 | 158 | 62.40 | 11.80 | 1.90 | 23.90 | 78 | 91V |
| 079 | 08 | RIV | 25.65 | A | JCT. RTE. 74 | 16,500 | 1,568 | 9.50 | 1,032 | 196 | 249 | 91 | 65.80 | 12.50 | 15.90 | 5.80 | 122 | 87E |
| 079 | 08 | RIV | 40.449 | B | BEAUMONT, JCT. RTE. 10 | 28,000 | 2,912 | 10.40 | 1,482 | 280 | 93 | 1,057 | 50.90 | 9.60 | 3.20 | 36.30 | 456 | 91V |
| 080 | 04 | SF | 3.951 | A | SAN FRANCISCO, JCT. RTE. 101 | 167,000 | 4,842 | 2.90 | 2,208 | 586 | 179 | 1,869 | 45.60 | 12.10 | 3.70 | 38.60 | 802 | 94 V |
| 080 | 04 | ALA | 1.989 | B | SAN FRANCISCO-OAKLAND BAY BRIDGE TOLL PLAZA | 253,000 | 6,526 | 2.58 | 3,579 | 466 | 273 | 2,208 | 54.83 | 7.14 | 4.19 | 33.83 | 970 | 00V |
| 080 | 04 | ALA | 1.989 | A | SAN FRANCISCO-OAKLAND BAY BRIDGE TOLL PLAZA | 253,000 | 6,350 | 2.51 | 2,836 | 447 | 201 | 2,866 | 44.66 | 7.04 | 3.17 | 45.13 | 1,159 | 03V |
| 080 | 04 | ALA | 2.802 | B | OAKLAND, JCT. RTE. 580 EAST | 147,000 | 2,602 | 1.77 | 1,192 | 181 | 101 | 1,128 | 45.80 | 6.94 | 3.90 | 43.36 | 462 | OOV |
| 080 | 04 | ALA | 3.786 | A | EMERYVILLE, POWELL RD | 277,000 | 13,267 | 4.79 | 5,041 | 1,165 | 491 | 6,570 | 37.99 | 8.78 | 3.70 | 49.52 | 2,622 | 03V |
| 080 | 04 | ALA | 4.582 | B | BERKELEY, JCT. RTE. 13 EAST | 277,000 | 13,325 | 4.81 | 4,666 | 1,328 | 532 | 6,799 | 35.02 | 9.97 | 3.99 | 51.03 | 2,709 | 00V |
| 080 | 04 | ALA | 4.582 | A | BERKELEY, JCT. RTE. 13 EAST | 269,000 | 12,831 | 4.77 | 4,927 | 1,125 | 512 | 6,267 | 38.40 | 8.77 | 3.99 | 48.84 | 2,513 | 03V |

EMISSION FACTOR CALCULATIONS
EMFAC 2014

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2017
Season: Annual
Vehicle Classification: EMFAC2007 Categories
TOTAL EMISSION RATES ( $\mathrm{g} / \mathrm{mi}$ )


Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

## EMISSION FACTOR CALCULATIONS

EMFAC 2014
EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2007 Categories
TOTAL EMISSION RATES (g/mi)
Speed (mph)

| 55 |  | TOG |
| :---: | :---: | :---: |
|  | Gas |  |
| DSL |  |  |$\quad \mathbf{0 . 0 3 2 8}$|  |  |
| :--- | :--- |
|  |  |


|  |  | Fleet Mix | VMT <br> $(\mathrm{Mi} /$ day $)$ | TOG <br> $(\mathrm{g} / \mathrm{mi})$ | TOG <br> Weighted | PM10 <br> $(\mathrm{g} / \mathrm{mi})$ | PM10 <br> Weighted |
| :--- | :--- | :---: | ---: | :---: | ---: | ---: | ---: |
|  | HHDT | GAS |  | 1583 | 0.527333 | 835 | 0.000579 |

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

## EMISSION FACTOR CALCULATIONS

EMFAC 2014
EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
TOTAL EMISSION RATES (g/mi)
Speed (mph)


Freeway Runex

| TOG | PM10 |
| :---: | :---: |
| $\mathbf{0 . 0 2 3 5}$ |  |
|  | 0.0058 |


|  |  | Fleet Mix Percentage | VMT <br> (Mi/day) | $\begin{aligned} & \hline \text { TOG } \\ & (\mathrm{g} / \mathrm{mi}) \end{aligned}$ | TOG <br> Weighted | $\begin{aligned} & \text { PM10 } \\ & \text { (g/mi) } \end{aligned}$ | PM10 <br> Weighted |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| HHDT | GAS |  | 1807 | 0.367544 | 664 | 0.000702 | 1 |
| HHDT | DSL | 0.617 | 433536 | 0.032373 | 14035 | 0.004925 | 2135 |
| LDA | GAS |  | 3161811 | 0.008922 | 28210 | 0.001282 | 4052 |
| LDA | DSL | 0.055 | 38959 | 0.007389 | 288 | 0.004075 | 159 |
| LDT1 | GAS |  | 220346 | 0.021773 | 4798 | 0.001649 | 363 |
| LDT1 | DSL | 0.000 | 148 | 0.086591 | 13 | 0.057191 | 8 |
| LDT2 | GAS |  | 1173322 | 0.011794 | 13838 | 0.001286 | 1508 |
| LDT2 | DSL | 0.003 | 2443 | 0.008557 | 21 | 0.003479 | 8 |
| LHDT1 | GAS |  | 45310 | 0.033079 | 1499 | 0.000883 | 40 |
| LHDT1 | DSL | 0.065 | 45576 | 0.082999 | 3783 | 0.017515 | 798 |
| LHDT2 | GAS |  | 11081 | 0.010795 | 120 | 0.000724 | 8 |
| LHDT2 | DSL | 0.028 | 19836 | 0.051155 | 1015 | 0.012334 | 245 |
| MCY | GAS |  | 27161 | 2.159074 | 58642 | 0.001603 | 44 |
| MDV | GAS |  | 658712 | 0.024198 | 15940 | 0.00127 | 837 |
| MDV | DSL | 0.021 | 14711 | 0.006153 | 91 | 0.003158 | 46 |
| MH | GAS |  | 5566 | 0.070887 | 395 | 0.001025 | 6 |
| MH | DSL | 0.002 | 1648 | 0.063319 | 104 | 0.130436 | 215 |
| MHDT | GAS |  | 14273 | 0.037888 | 541 | 0.000757 | 11 |
| MHDT | DSL | 0.197 | 138512 | 0.01374 | 1903 | 0.002697 | 374 |
| OBUS | GAS |  | 6500 | 0.022016 | 143 | 0.000743 | 5 |
| OBUS | DSL | 0.008 | 5334 | 0.019025 | 101 | 0.003237 | 17 |
| SBUS | GAS |  | 792 | 0.028178 | 22 | 0.000442 | 0 |
| SBUS | DSL | 0.002 | 1690 | 0.037244 | 63 | 0.021987 | 37 |
| UBUS | GAS |  | 633 | 0.222602 | 141 | 0.000839 | 1 |
| UBUS | DSL | 0.001 | 624 | 0.589211 | 367 | 0.032439 | 20 |
|  | Total |  | 5327314 |  | 124952 |  | 6876 |
|  | L Total | 1.00 | 703016 |  | 21784 |  | 4064 |

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

## EMISSION FACTOR CALCULATIONS

EMFAC 2014
EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2030
Season: Annual
Vehicle Classification: EMFAC2007 Categories
TOTAL EMISSION RATES (g/mi)
Speed (mph)


Freeway Runex

| TOG | PM10 |
| :---: | :---: |
| $\mathbf{0 . 0 1 9 3}$ |  |
|  | $\mathbf{0 . 0 0 4 7}$ |


|  |  | Fleet Mix <br> Percentage | VMT <br> (Mi/day) | $\begin{gathered} \text { TOG } \\ (\mathrm{g} / \mathrm{mi}) \\ \hline \end{gathered}$ | TOG <br> Weighted | $\begin{aligned} & \mathrm{PM} 10 \\ & (\mathrm{~g} / \mathrm{mi}) \end{aligned}$ | PM10 Weighted |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| HHDT | GAS |  | 2100 | 0.339022 | 712 | 0.000789 | 2 |
| HHDT | DSL | 0.627 | 477023 | 0.031392 | 14975 | 0.004697 | 2241 |
| LDA | GAS |  | 3350529 | 0.006445 | 21594 | 0.000989 | 3314 |
| LDA | DSL | 0.058 | 44335 | 0.003663 | 162 | 0.001453 | 64 |
| LDT1 | GAS |  | 232824 | 0.0127 | 2957 | 0.001159 | 270 |
| LDT1 | DSL | 0.000 | 125 | 0.015171 | 2 | 0.007238 | 1 |
| LDT2 | GAS |  | 1297811 | 0.008397 | 10898 | 0.000986 | 1280 |
| LDT2 | DSL | 0.004 | 2808 | 0.008156 | 23 | 0.003255 | 9 |
| LHDT1 | GAS |  | 36091 | 0.016935 | 611 | 0.000838 | 30 |
| LHDT1 | DSL | 0.056 | 42794 | 0.056327 | 2410 | 0.012024 | 515 |
| LHDT2 | GAS |  | 10938 | 0.00564 | 62 | 0.000784 | 9 |
| LHDT2 | DSL | 0.026 | 19852 | 0.032671 | 649 | 0.008373 | 166 |
| MCY | GAS |  | 28977 | 2.118422 | 61385 | 0.001696 | 49 |
| MDV | GAS |  | 676922 | 0.015739 | 10654 | 0.001033 | 699 |
| MDV | DSL | 0.023 | 17401 | 0.00402 | 70 | 0.001643 | 29 |
| MH | GAS |  | 4750 | 0.025938 | 123 | 0.00084 | 4 |
| MH | DSL | 0.002 | 1342 | 0.048059 | 65 | 0.085376 | 115 |
| MHDT | GAS |  | 16014 | 0.018331 | 294 | 0.000793 | 13 |
| MHDT | DSL | 0.193 | 146738 | 0.013762 | 2019 | 0.002634 | 386 |
| OBUS | GAS |  | 7114 | 0.013359 | 95 | 0.000804 | 6 |
| OBUS | DSL | 0.008 | 5887 | 0.018291 | 108 | 0.003116 | 18 |
| SBUS | GAS |  | 817 | 0.015522 | 13 | 0.000533 | 0 |
| SBUS | DSL | 0.002 | 1690 | 0.024276 | 41 | 0.012616 | 21 |
| UBUS | GAS |  | 672 | 0.063579 | 43 | 0.000782 | 1 |
| UBUS | DSL | 0.001 | 653 | 0.412193 | 269 | 0.009738 | 6 |
|  | s Total |  | 5665559 |  | 109440 |  | 5676 |
|  | L Total | 1.00 | 760649 |  | 20793 |  | 3572 |

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

## EMISSION FACTOR CALCULATIONS

EMFAC 2014
EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2007 Categories
TOTAL EMISSION RATES (g/mi)
Speed (mph)


Freeway Runex

| TOG | PM10 |
| :---: | :---: |
| $\mathbf{0 . 0 1 7 4}$ |  |
|  | $\mathbf{0 . 0 0 4 2}$ |


|  |  | Fleet Mix <br> Percentage | VMT <br> (Mi/day) | $\begin{gathered} \text { TOG } \\ (\mathrm{g} / \mathrm{mi}) \\ \hline \end{gathered}$ | TOG <br> Weighted | $\begin{aligned} & \mathrm{PM} 10 \\ & (\mathrm{~g} / \mathrm{mi}) \end{aligned}$ | PM10 Weighted |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| HHDT | GAS |  | 2924 | 0.347147 | 1015 | 0.000825 | 2 |
| HHDT | DSL | 0.637 | 601233 | 0.030656 | 18431 | 0.004511 | 2712 |
| LDA | GAS |  | 3733478 | 0.004939 | 18441 | 0.000722 | 2695 |
| LDA | DSL | 0.054 | 51018 | 0.002776 | 142 | 0.000856 | 44 |
| LDT1 | GAS |  | 263368 | 0.007388 | 1946 | 0.000792 | 209 |
| LDT1 | DSL | 0.000 | 144 | 0.009537 | 1 | 0.004062 | 1 |
| LDT2 | GAS |  | 1492898 | 0.006423 | 9588 | 0.000721 | 1076 |
| LDT2 | DSL | 0.003 | 3262 | 0.00808 | 26 | 0.003231 | 11 |
| LHDT1 | GAS |  | 35738 | 0.00781 | 279 | 0.000804 | 29 |
| LHDT1 | DSL | 0.052 | 48824 | 0.039507 | 1929 | 0.008169 | 399 |
| LHDT2 | GAS |  | 12569 | 0.003876 | 49 | 0.000818 | 10 |
| LHDT2 | DSL | 0.025 | 23791 | 0.025742 | 612 | 0.006415 | 153 |
| MCY | GAS |  | 33654 | 2.097121 | 70578 | 0.001752 | 59 |
| MDV | GAS |  | 763351 | 0.011254 | 8590 | 0.000793 | 606 |
| MDV | DSL | 0.022 | 20745 | 0.003277 | 68 | 0.001105 | 23 |
| MH | GAS |  | 5048 | 0.015906 | 80 | 0.000806 | 4 |
| MH | DSL | 0.002 | 1437 | 0.036109 | 52 | 0.049315 | 71 |
| MHDT | GAS |  | 22102 | 0.012489 | 276 | 0.000818 | 18 |
| MHDT | DSL | 0.194 | 182679 | 0.013664 | 2496 | 0.002576 | 471 |
| OBUS | GAS |  | 9167 | 0.011001 | 101 | 0.00083 | 8 |
| OBUS | DSL | 0.009 | 8032 | 0.016932 | 136 | 0.00288 | 23 |
| SBUS | GAS |  | 802 | 0.009209 | 7 | 0.000659 | 1 |
| SBUS | DSL | 0.002 | 1691 | 0.015763 | 27 | 0.005016 | 8 |
| UBUS | GAS |  | 843 | 0.046935 | 40 | 0.000815 | 1 |
| UBUS | DSL | 0.001 | 829 | 0.331707 | 275 | 0.003849 | 3 |
|  | s Total |  | 6375943 |  | 110991 |  | 4717 |
|  | L Total | 1.00 | 943685 |  | 24196 |  | 3918 |

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

## EMISSION FACTOR CALCULATIONS

EMFAC 2014
EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2040
Season: Annual
Vehicle Classification: EMFAC2007 Categories
TOTAL EMISSION RATES (g/mi)
Speed (mph)


Freeway Runex

| TOG | PM10 |
| :---: | :---: |
| $\mathbf{0 . 0 1 6 3}$ |  |
|  | 0.0039 |


|  |  | Fleet Mix Percentage | VMT <br> (Mi/day) | $\begin{gathered} \text { TOG } \\ (\mathrm{g} / \mathrm{mi}) \end{gathered}$ | TOG <br> Weighted | PM10 <br> (g/mi) | PM10 <br> Weighted |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| HHDT | GAS |  | 3201 | 0.353137 | 1131 | 0.000838 | 3 |
| HHDT | DSL | 0.641 | 649756 | 0.030507 | 19822 | 0.004476 | 2909 |
| LDA | GAS |  | 3978282 | 0.004206 | 16734 | 0.000568 | 2259 |
| LDA | DSL | 0.054 | 55107 | 0.002479 | 137 | 0.000635 | 35 |
| LDT1 | GAS |  | 282188 | 0.005222 | 1474 | 0.000611 | 172 |
| LDT1 | DSL | 0.000 | 156 | 0.008642 | 1 | 0.003577 | 1 |
| LDT2 | GAS |  | 1607572 | 0.005414 | 8703 | 0.000567 | 911 |
| LDT2 | DSL | 0.003 | 3527 | 0.008083 | 29 | 0.003242 | 11 |
| LHDT1 | GAS |  | 35525 | 0.004274 | 152 | 0.000811 | 29 |
| LHDT1 | DSL | 0.050 | 50779 | 0.030931 | 1571 | 0.006063 | 308 |
| LHDT2 | GAS |  | 13409 | 0.003413 | 46 | 0.000835 | 11 |
| LHDT2 | DSL | 0.025 | 25405 | 0.02369 | 602 | 0.005598 | 142 |
| MCY | GAS |  | 36197 | 2.089404 | 75629 | 0.001779 | 64 |
| MDV | GAS |  | 818343 | 0.008438 | 6905 | 0.000632 | 518 |
| MDV | DSL | 0.022 | 22735 | 0.002906 | 66 | 0.000815 | 19 |
| MH | GAS |  | 5182 | 0.010941 | 57 | 0.000815 | 4 |
| MH | DSL | 0.001 | 1438 | 0.02934 | 42 | 0.030192 | 43 |
| MHDT | GAS |  | 24136 | 0.010431 | 252 | 0.000833 | 20 |
| MHDT | DSL | 0.191 | 193966 | 0.013429 | 2605 | 0.002509 | 487 |
| OBUS | GAS |  | 9893 | 0.010499 | 104 | 0.000838 | 8 |
| OBUS | DSL | 0.008 | 8573 | 0.016977 | 146 | 0.002889 | 25 |
| SBUS | GAS |  | 777 | 0.009197 | 7 | 0.000793 | 1 |
| SBUS | DSL | 0.002 | 1691 | 0.012631 | 21 | 0.002364 | 4 |
| UBUS | GAS |  | 904 | 0.019349 | 18 | 0.000816 | 1 |
| UBUS | DSL | 0.001 | 890 | 0.285975 | 254 | 0.001198 | 1 |
|  | Total |  | 6815610 |  | 111210 |  | 4001 |
|  | L Total | 1.00 | 1014022 |  | 25295 |  | 3984 |

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)


## Appendix

This page intentionally left blank.

## Appendix B. Graphical Representations of Emitting Sources

## State Route 79

Mile Post 7.63
Sources L0000001-54 (trucks); Sources L0000139-192 (cars)


- Release height of 4.15 m and initial vertical dimension ( $\delta \mathrm{y})$ of 1.93 m is based upon California Air Resources Board's "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" (2000). Release of 0.6 m used for gasoline-fueled vehicles.


## Appendix C. Air Dispersion Modeling Output

## Appendix

This page intentionally left blank.

## Model Output Summary

## Results Summary

C:IUsers\GraphicsBRKIDesktopITVCS_HRAITVCS_HRA.isc
Concentration - Source Group: 1A - Trucks

| Averaging Period | Rank | Peak | Units | $\begin{gathered} \text { X } \\ \text { (m) } \end{gathered}$ | $\begin{gathered} Y \\ (\mathrm{~m}) \end{gathered}$ | ZELEV (m) | $\begin{gathered} \text { ZFLAG } \\ (\mathrm{m}) \end{gathered}$ | ZHILL <br> (m) | Peak Date, Start Hour |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1-HR | 1ST | 405.71762 | $\mathrm{ug} / \mathrm{m}^{\wedge} 3$ | 491119.30 | 3720583.78 | 432.83 | 0.00 | 575.00 | 12/21/2010, 16 |
| 8-HR | 1ST | 115.92715 | $\mathrm{ug} / \mathrm{m}^{\wedge} 3$ | 491009.74 | 3720425.54 | 432.77 | 0.00 | 521.00 | 12/21/2010, 16 |
| 24-HR | 1ST | 35.28218 | $\mathrm{ug} / \mathrm{m}^{\wedge} 3$ | 491009.74 | 3720425.54 | 432.77 | 0.00 | 521.00 | 12/21/2010, 24 |
| PERIOD |  | 6.87765 | $\mathrm{ug} / \mathrm{m}^{\wedge} 3$ | 491009.74 | 3720425.54 | 432.77 | 0.00 | 521.00 |  |

## Concentration - Source Group: 1B - Cars

| Averaging <br> Period | Rank | Peak | Units | $\mathbf{X}$ <br> $(\mathbf{m})$ | $\mathbf{Y}$ <br> $(\mathbf{m})$ | ZELEV <br> $(\mathbf{m})$ | ZFLAG <br> $(\mathbf{m})$ | ZHILL <br> $(\mathbf{m})$ | Peak Date, <br> Start Hour |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1-HR | 1ST | 763.15851 | $\mathrm{ug} / \mathrm{m}^{\wedge} 3$ | 491009.74 | 3720425.54 | 432.77 | 0.00 | 521.00 | $12 / 21 / 2010,16$ |
| $8-\mathrm{HR}$ | 1ST | 201.66174 | $\mathrm{ug} / \mathrm{m}^{\wedge} 3$ | 491009.74 | 3720425.54 | 432.77 | 0.00 | 521.00 | $12 / 21 / 2010,16$ |
| $24-\mathrm{HR}$ | 1ST | 61.37531 | $\mathrm{ug} / \mathrm{m}^{\wedge} 3$ | 491009.74 | 3720425.54 | 432.77 | 0.00 | 521.00 | $12 / 21 / 2010,24$ |
| PERIOD |  | 10.41932 | $\mathrm{ug} / \mathrm{m}^{\wedge} 3$ | 491009.74 | 3720425.54 | 432.77 | 0.00 | 521.00 |  |

## Model Output

Unit Emission Rates (1 g/s)

**MODELOPTs: RegDFAULT CONC ELEV RURAL
MODEL SETUP OPTIONS SUMMARY
**Model Is Setup For Calculation of Average CONCentration Values.
-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT $=F$
**Model Uses RURAL Dispersion Only.
**Model Uses Regulatory DEFAULT Options:

1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
**Other Options Specified:
TEMP_Sub - Meteorological data includes TEMP substitutions
**Model Assumes No FLAGPOLE Receptor Heights.
**The User Specified a Pollutant Type of: OTHER
**Model Calculates 3 Short Term Average(s) of: 1-HR 8-HR 24-HR and Calculates PERIOD Averages
**This Run Includes: 108 Source(s); 2 Source Group(s); and 364 Receptor(s)

$$
\begin{array}{ccl}
\text { with: } & 0 \text { POINT(s), including } & \\
& 0 \text { POINTCAP }(s) \text { and } & 0 \text { POINTHOR(s) } \\
\text { and: } & 08 \text { VOLUME source }(s) & \\
\text { and: } & 0 \text { AREA type source(s) } & \\
\text { and: } & 0 \text { LINE source }(s) & \\
\text { and: } & 0 \text { OPENPIT source(s) } &
\end{array}
$$

**Model Set To Continue RUNning After the Setup Testing.
**The AERMET Input Meteorological Data Version Date: 14134
**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)
**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

## Model Output

Unit Emission Rates ( $1 \mathrm{~g} / \mathrm{s}$ )
**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 406.00; Decay Coef. = 0.000 ; Rot. Angle $=$, 0.0 Emission Units $=$ GRAMS/SEC ; Emission Rate Unit Factor $=0.10000 \mathrm{E}+07$ Output Units = MICROGRAMS $/ \mathrm{M}^{* *} 3$
**Approximate Storage Requirements of Model = 3.7 MB of RAM.
**Detailed Error/Message File: TVCS_HRA.err
**File for Summary of Results: TVCS_HRA.sum

## Model Output

Unit Emission Rates (1 g/s)

**MODELOPTs: RegDFAULT CONC ELEV RURAL
*** VOLUME SOURCE DATA ***

|  | NUMBER | Emission rate |  |  | BASE | RELEASE | INIT. | INIT. | URBAN | EMISSION RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOURCE | PART. | (GRAMS/SEC) | X | Y | ELEV. | HEIGHT | SY | SZ | SOURCE | SCALAR VARY |
| ID | CATS. |  | (METERS) | (METERS) | (METERS) | (METERS) | (METERS) |  |  | BY |


| L0000001 | 0 | 0.18519E-01 | 490800.1 | 3720092.4 | 424.9 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| L0000002 | 0 | 0.18519E-01 | 490810.8 | 3720107.5 | 425.1 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000003 | 0 | 0.18519E-01 | 490821.4 | 3720122.7 | 425.6 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000004 | 0 | 0.18519E-01 | 490832.0 | 3720137.8 | 426.0 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000005 | 0 | 0.18519E-01 | 490842.6 | 3720152.9 | 426.0 | 4.15 | 8.60 | 2.70 | No | HRDOW |
| L0000006 | 0 | 0.18519E-01 | 490853.3 | 3720168.1 | 426.0 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000007 | 0 | 0.18519E-01 | 490863.9 | 3720183.2 | 426.0 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000008 | 0 | 0.18519E-01 | 490874.5 | 3720198.4 | 426.1 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000009 | 0 | 0.18519E-01 | 490885.1 | 3720213.5 | 426.3 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000010 | 0 | 0.18519E-01 | 490895.8 | 3720228.7 | 426.2 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000011 | 0 | 0.18519E-01 | 490906.4 | 3720243.8 | 426.8 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000012 | 0 | 0.18519E-01 | 490917.0 | 3720258.9 | 427.7 | 4.15 | 8.60 | 2.70 | No | HRDOW |
| L0000013 | 0 | 0.18519E-01 | 490927.7 | 3720274.1 | 429.0 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000014 | 0 | 0.18519E-01 | 490938.3 | 3720289.2 | 430.8 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000015 | 0 | 0.18519E-01 | 490948.9 | 3720304.4 | 431.7 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000016 | 0 | 0.18519E-01 | 490959.5 | 3720319.5 | 432.1 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000017 | 0 | 0.18519E-01 | 490970.2 | 3720334.7 | 432.5 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000018 | 0 | 0.18519E-01 | 490980.8 | 3720349.8 | 432.4 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000019 | 0 | 0.18519E-01 | 490991.4 | 3720364.9 | 432.6 | 4.15 | 8.60 | 2.70 | No | HRDOW |
| L0000020 | 0 | 0.18519E-01 | 491002.0 | 3720380.1 | 432.9 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000021 | 0 | 0.18519E-01 | 491012.7 | 3720395.2 | 432.5 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000022 | 0 | 0.18519E-01 | 491023.3 | 3720410.4 | 431.9 | 4.15 | 8.60 | 2.70 | No | HRDOW |
| L0000023 | 0 | 0.18519E-01 | 491033.9 | 3720425.5 | 431.8 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000024 | 0 | 0.18519E-01 | 491044.6 | 3720440.7 | 431.4 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000025 | 0 | 0.18519E-01 | 491055.2 | 3720455.8 | 430.8 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000026 | 0 | 0.18519E-01 | 491065.8 | 3720470.9 | 430.4 | 4.15 | 8.60 | 2.70 | No | HRDOW |
| L0000027 | 0 | 0.18519E-01 | 491076.4 | 3720486.1 | 429.6 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L00000228 | 0 | 0.18519E-01 | 491087.1 | 3720501.2 | 429.2 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L00000029 | 0 | 0.18519E-01 | 491097.7 | 3720516.4 | 429.7 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000030 | 0 | 0.18519E-01 | 491108.3 | 3720531.5 | 430.2 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000031 | 0 | 0.18519E-01 | 491118.9 | 3720546.7 | 430.4 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000032 | 0 | 0.18519E-01 | 491129.6 | 3720561.8 | 430.9 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000033 | 0 | 0.18519E-01 | 491140.2 | 3720576.9 | 432.1 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000034 | 0 | 0.18519E-01 | 491150.8 | 3720592.1 | 433.3 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000035 | 0 | 0.18519E-01 | 491161.5 | 3720607.2 | 433.7 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000036 | 0 | 0.18519E-01 | 491172.1 | 3720622.4 | 433.7 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L00000037 | 0 | 0.18519E-01 | 491182.7 | 3720637.5 | 432.6 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000038 | 0 | 0.18519E-01 | 491193.3 | 3720652.7 | 431.4 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000039 | 0 | 0.18519E-01 | 491204.0 | 3720667.8 | 431.0 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000040 | 0 | 0.18519E-01 | 491214.6 | 3720682.9 | 431.0 | 4.15 | 8.60 | 2.70 | NO | HRDOW |

## Model Output

Unit Emission Rates (1 g/s)

| $* * *$ AERMOD - VERSION 15181 $* * *$ <br> $* * *$ $* *$   <br> AERMET - VERSION 14134 *** $* *$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $r s \backslash G r a p h i c s B R K \backslash D e s k t o p \backslash T V C S \_H R A \backslash T V C S \_H R A . i s c$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | (GraphicsBrK\Desktop\TVCS_HRA\TVCs_HRA.isc |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**MODELOPTs: RegDFAULT CONC ELEV RURAL
*** VOLUME SOURCE DATA ***

|  | NUMBER | EMISSION RATE |  |  | BASE | RELEASE | INIT. | INIT. | URBAN | EMISSION RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOURCE | PART. | (GRAMS/SEC) | X | Y | ELEV. | HEIGHT | SY | SZ | SOURCE | SCALAR VARY |
| ID | CATS. |  | (METERS) | (METERS) | (METERS) | (METERS) | (METERS) | (METERS) |  | BY |


| L0000041 | 0 | 0.18519E-01 | 491225.2 | 3720698.1 | 430.5 | 4.15 | 8.60 | 2.70 | No | HRDOW |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| L00000042 | 0 | 0.18519E-01 | 491235.8 | 3720713.2 | 430.4 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000043 | 0 | 0.18519E-01 | 491246.5 | 3720728.4 | 430.7 | 4.15 | 8.60 | 2.70 | No | HRDOW |
| L0000044 | 0 | 0.18519E-01 | 491257.1 | 3720743.5 | 430.2 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000045 | 0 | 0.18519E-01 | 491267.7 | 3720758.7 | 429.9 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000046 | 0 | 0.18519E-01 | 491278.4 | 3720773.8 | 430.1 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L00000047 | 0 | 0.18519E-01 | 491289.0 | 3720788.9 | 430.0 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000048 | 0 | 0.18519E-01 | 491299.6 | 3720804.1 | 430.5 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000049 | 0 | 0.18519E-01 | 491310.2 | 3720819.2 | 431.1 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000050 | 0 | 0.18519E-01 | 491320.9 | 3720834.4 | 431.6 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000051 | 0 | 0.18519E-01 | 491331.5 | 3720849.5 | 432.2 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000052 | 0 | 0.18519E-01 | 491342.1 | 3720864.7 | 432.6 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000053 | 0 | 0.18519E-01 | 491352.8 | 3720879.8 | 432.8 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000054 | 0 | 0.18519E-01 | 491363.4 | 3720894.9 | 433.3 | 4.15 | 8.60 | 2.70 | NO | HRDOW |
| L0000139 | 0 | 0.18519E-01 | 490800.1 | 3720092.4 | 424.9 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000140 | 0 | 0.18519E-01 | 490810.8 | 3720107.5 | 425.1 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000141 | 0 | 0.18519E-01 | 490821.4 | 3720122.7 | 425.6 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000142 | 0 | 0.18519E-01 | 490832.0 | 3720137.8 | 426.0 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000143 | 0 | 0.18519E-01 | 490842.6 | 3720152.9 | 426.0 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000144 | 0 | 0.18519E-01 | 490853.3 | 3720168.1 | 426.0 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000145 | 0 | 0.18519E-01 | 490863.9 | 3720183.2 | 426.0 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000146 | 0 | 0.18519E-01 | 490874.5 | 3720198.4 | 426.1 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000147 | 0 | 0.18519E-01 | 490885.1 | 3720213.5 | 426.3 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000148 | 0 | 0.18519E-01 | 490895.8 | 3720228.7 | 426.2 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000149 | 0 | 0.18519E-01 | 490906.4 | 3720243.8 | 426.8 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000150 | 0 | 0.18519E-01 | 490917.0 | 3720258.9 | 427.7 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000151 | 0 | 0.18519E-01 | 490927.7 | 3720274.1 | 429.0 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000152 | 0 | 0.18519E-01 | 490938.3 | 3720289.2 | 430.8 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000153 | 0 | 0.18519E-01 | 490948.9 | 3720304.4 | 431.7 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000154 | 0 | 0.18519E-01 | 490959.5 | 3720319.5 | 432.1 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000155 | 0 | 0.18519E-01 | 490970.2 | 3720334.7 | 432.5 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000156 | 0 | 0.18519E-01 | 490980.8 | 3720349.8 | 432.4 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000157 | 0 | 0.18519E-01 | 490991.4 | 3720364.9 | 432.6 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000158 | 0 | 0.18519E-01 | 491002.0 | 3720380.1 | 432.9 | 0.60 | 8.60 | 2.70 | No | HRDOW |
| L0000159 | 0 | 0.18519E-01 | 491012.7 | 3720395.2 | 432.5 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000160 | 0 | 0.18519E-01 | 491023.3 | 3720410.4 | 431.9 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000161 | 0 | 0.18519E-01 | 491033.9 | 3720425.5 | 431.8 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000162 | 0 | 0.18519E-01 | 491044.6 | 3720440.7 | 431.4 | 0.60 | 8.60 | 2.70 | No | HRDOW |
| L0000163 | 0 | 0.18519E-01 | 491055.2 | 3720455.8 | 430.8 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000164 | 0 | 0.18519E-01 | 491065.8 | 3720470.9 | 430.4 | 0.60 | 8.60 | 2.70 | NO | HRDOW |

## Model Output

Unit Emission Rates ( $1 \mathrm{~g} / \mathrm{s}$ )

```
*** AERMOD - VERSION 15181 *** *** C:\Users\GraphicsBRK\Desktop\TVCS_HRA\TVCS_HRA.isc
** 08.24.3
PAGE 4
**MODELOPTs: RegDFAULT CONC ELEV RURAL
```

*** VOLUME SOURCE DATA ***


| L0000165 | 0 | 0.18519E-01 | 491076.4 | 3720486.1 | 429.6 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| L0000166 | 0 | 0.18519E-01 | 491087.1 | 3720501.2 | 429.2 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000167 | 0 | 0.18519E-01 | 491097.7 | 3720516.4 | 429.7 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000168 | 0 | 0.18519E-01 | 491108.3 | 3720531.5 | 430.2 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000169 | 0 | 0.18519E-01 | 491118.9 | 3720546.7 | 430.4 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000170 | 0 | 0.18519E-01 | 491129.6 | 3720561.8 | 430.9 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000171 | 0 | 0.18519E-01 | 491140.2 | 3720576.9 | 432.1 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000172 | 0 | 0.18519E-01 | 491150.8 | 3720592.1 | 433.3 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000173 | 0 | 0.18519E-01 | 491161.5 | 3720607.2 | 433.7 | 0.60 | 8.60 | 2.70 | No | HRDOW |
| L0000174 | 0 | 0.18519E-01 | 491172.1 | 3720622.4 | 433.7 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000175 | 0 | 0.18519E-01 | 491182.7 | 3720637.5 | 432.6 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000176 | 0 | 0.18519E-01 | 491193.3 | 3720652.7 | 431.4 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000177 | 0 | 0.18519E-01 | 491204.0 | 3720667.8 | 431.0 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000178 | 0 | 0.18519E-01 | 491214.6 | 3720682.9 | 431.0 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000179 | 0 | 0.18519E-01 | 491225.2 | 3720698.1 | 430.5 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000180 | 0 | 0.18519E-01 | 491235.8 | 3720713.2 | 430.4 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000181 | 0 | 0.18519E-01 | 491246.5 | 3720728.4 | 430.7 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000182 | 0 | 0.18519E-01 | 491257.1 | 3720743.5 | 430.2 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000183 | 0 | 0.18519E-01 | 491267.7 | 3720758.7 | 429.9 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000184 | 0 | 0.18519E-01 | 491278.4 | 3720773.8 | 430.1 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000185 | 0 | 0.18519E-01 | 491289.0 | 3720788.9 | 430.0 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000186 | 0 | 0.18519E-01 | 491299.6 | 3720804.1 | 430.5 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000187 | 0 | 0.18519E-01 | 491310.2 | 3720819.2 | 431.1 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000188 | 0 | 0.18519E-01 | 491320.9 | 3720834.4 | 431.6 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000189 | 0 | 0.18519E-01 | 491331.5 | 3720849.5 | 432.2 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000190 | 0 | 0.18519E-01 | 491342.1 | 3720864.7 | 432.6 | 0.60 | 8.60 | 2.70 | NO | HRDOW |
| L0000191 | 0 | 0.18519E-01 | 491352.8 | 3720879.8 | 432.8 | 0.60 | 8.60 | 2.70 | No | HRDOW |
| L0000192 | 0 | 0.18519E-01 | 491363.4 | 3720894.9 | 433.3 | 0.60 | 8.60 | 2.70 | NO | HRDOW |

## Model Output

Unit Emission Rates (1 g/s)

*** SOURCE IDs DEFINING SOURCE GROUPS ***

## SOURCE IDs

| 1 A | L0000001 | , | L0000002 | , | L0000003 | , | L0000004 | , | L0000005 |  | L0000006 | , | L0000007 | , | L0000008 | , |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | L0000009 | , | L0000010 | , | L0000011 | , | L0000012 | , | L0000013 |  | L0000014 | , | L0000015 | , | L0000016 | , |
|  | L0000017 | , | L0000018 | , | L0000019 | , | L0000020 | , | L0000021 |  | L0000022 | , | L0000023 | , | L0000024 | , |
|  | L0000025 | , | L0000026 | , | L0000027 | , | L0000028 | , | L0000029 | , | L0000030 | , | L0000031 | , | L0000032 | , |
|  | L0000033 | , | L0000034 | , | L0000035 | , | L0000036 | , | L0000037 | , | L0000038 | , | L0000039 | , | L0000040 | , |
|  | L0000041 | , | L0000042 | , | L0000043 | , | L0000044 | , | L0000045 | , | L0000046 | , | L0000047 | , | L0000048 | , |
|  | L0000049 | , | L0000050 | , | L0000051 | , | L0000052 | , | L0000053 | , | L0000054 | , |  |  |  |  |
| 1B | L0000139 | , | L0000140 | , | L0000141 | , | L0000142 | , | L0000143 | , | L0000144 | , | L0000145 | , | L0000146 | , |
|  | L0000147 | , | L0000148 | , | L0000149 | , | L0000150 | , | L0000151 | , | L0000152 | , | L0000153 | , | L0000154 | , |
|  | L0000155 | , | L0000156 | , | L0000157 | , | L0000158 | , | L0000159 | , | L0000160 | , | L0000161 | , | L0000162 | , |
|  | L0000163 | , | L0000164 | , | L0000165 | , | L0000166 | , | L0000167 | , | L0000168 | , | L0000169 | , | L0000170 | , |
|  | L0000171 | , | L0000172 | , | L0000173 | , | L0000174 | , | L0000175 | , | L0000176 | , | L0000177 | , | L0000178 | , |
|  | L0000179 | , | L0000180 | , | L0000181 | , | L0000182 | , | L0000183 | , | L0000184 | , | L0000185 | , | L0000186 | , |
|  | L0000187 |  | L0000188 | , | L0000189 | , | L0000190 | , | L0000191 | , | L0000192 | , |  |  |  |  |

## Model Output

Unit Emission Rates ( $1 \mathrm{~g} / \mathrm{s}$ )

**MODELOPTs: RegDFAULT CONC ELEV RURAL

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

| SOURCE | ID $=$ Truc | cks (Sour | Lurces L000 | 0001 t | through L00 | 00054) | SOU | CE TY | YPE = VOLUM |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR |
| DAY OF WEEK = WEEKDAY |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | . $0000 \mathrm{E}+00$ | 2 | . $0000 \mathrm{E}+00$ | 3 | . $0000 \mathrm{E}+00$ | 4 | . $0000 \mathrm{E}+00$ | 5 | . $0000 \mathrm{E}+00$ | 6 | . $0000 \mathrm{E}+00$ | 7 | . $0000 \mathrm{E}+00$ | 8 | . $0000 \mathrm{E}+00$ |
| 9 | . $6460 \mathrm{E}+00$ | 10 | . $5010 \mathrm{E}+00$ | 11 | . $4660 \mathrm{E}+00$ | 12 | . 5030E+00 | 13 | . $5900 \mathrm{E}+00$ | 14 | .6700E+00 | 15 | . $8520 \mathrm{E}+00$ | 16 | . $9500 \mathrm{E}+00$ |
| 17 | . $0000 \mathrm{E}+00$ | 18 | . $0000 \mathrm{E}+00$ | 19 | . $0000 \mathrm{E}+00$ | 20 | . $00000 \mathrm{E}+00$ | 21 | . $0000 \mathrm{E}+00$ | 22 | . $0000 \mathrm{E}+00$ | 23 | . $0000 \mathrm{E}+00$ | 24 | . $0000 \mathrm{E}+00$ |
| DAY OF WEEK = SATURDAY |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | . $0000 \mathrm{E}+00$ | 2 | . $0000 \mathrm{E}+00$ | 3 | . $00000 \mathrm{E}+00$ | 4 | .0000E+00 | 5 | . $0000 \mathrm{E}+00$ | 6 | . $0000 \mathrm{E}+00$ | 7 | . $0000 \mathrm{E}+00$ | 8 | . $0000 \mathrm{E}+00$ |
| 9 | . $0000 \mathrm{E}+00$ | 10 | . $0000 \mathrm{E}+00$ | 11 | . 0000E+00 | 12 | . $00000 \mathrm{E}+00$ | 13 | . $0000 \mathrm{E}+00$ | 14 | . 0000E+00 | 15 | . $0000 \mathrm{E}+00$ | 16 | . $0000 \mathrm{E}+00$ |
| 17 | . $0000 \mathrm{E}+00$ | 18 | . $0000 \mathrm{E}+00$ | 19 | . $0000 \mathrm{E}+00$ | 20 | . $00000 \mathrm{E}+00$ | 21 | . $0000 \mathrm{E}+00$ | 22 | . $0000 \mathrm{E}+00$ | 23 | . $0000 \mathrm{E}+00$ | 24 | . $0000 \mathrm{E}+00$ |
| DAY OF WEEK = SUNDAY |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | . $0000 \mathrm{E}+00$ | 2 | . $0000 \mathrm{E}+00$ | 3 | . $0000 \mathrm{E}+00$ | 4 | . $00000 \mathrm{E}+00$ | 5 | . $0000 \mathrm{E}+00$ | 6 | . $0000 \mathrm{E}+00$ | 7 | . $0000 \mathrm{E}+00$ | 8 | . $0000 \mathrm{E}+00$ |
| 9 | . $0000 \mathrm{E}+00$ | 10 | . $0000 \mathrm{E}+00$ | 11 | . $0000 \mathrm{E}+00$ | 12 | . $00000 \mathrm{E}+00$ | 13 | . $00000 \mathrm{E}+00$ | 14 | . $0000 \mathrm{E}+00$ | 15 | . $00000 \mathrm{E}+00$ | 16 | . $0000 \mathrm{E}+00$ |
| 17 | . $0000 \mathrm{E}+00$ | 18 | . $0000 \mathrm{E}+00$ | 19 | . $0000 \mathrm{E}+00$ | 20 | . $00000 \mathrm{E}+00$ | 21 | . $0000 \mathrm{E}+00$ | 22 | . $0000 \mathrm{E}+00$ | 23 | . $0000 \mathrm{E}+00$ | 24 | . $0000 \mathrm{E}+00$ |
| SOURCE | ID = Cars | (Sources L0000139 through L0000192) |  |  |  |  | ; SOURCE |  | = VOLume | : |  | HOUR |  | HOUR | SCALAR |
| HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR | HOUR | SCALAR |  | SCALAR |  |  |
| DAY OF WEEK = WEEKDAY |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | . $0000 \mathrm{E}+00$ | 2 | . $00000 \mathrm{E}+00$ | 3 | . $00000 \mathrm{E}+00$ | 4 | . $0000 \mathrm{E}+00$ | 5 | . $0000 \mathrm{E}+00$ |  | . $0000 \mathrm{E}+00$ | 7 | . $0000 \mathrm{E}+00$ | 8 | . $0000 \mathrm{E}+00$ |
| 9 | . $8680 \mathrm{E}+00$ | 10 | . $8160 \mathrm{E}+00$ | 11 | . $8060 \mathrm{E}+00$ | 12 | . $8270 \mathrm{E}+00$ | 13 | . $8460 \mathrm{E}+00$ | 14 | . $8640 \mathrm{E}+00$ | 15 | . $9370 \mathrm{E}+00$ | 16 | . $9850 \mathrm{E}+00$ |
| 17 | . $0000 \mathrm{E}+00$ | 18 | . $0000 \mathrm{E}+00$ | 19 | . $0000 \mathrm{E}+00$ | 20 | . $0000 \mathrm{E}+00$ | 21 | . $0000 \mathrm{E}+00$ | 22 | . $0000 \mathrm{E}+00$ | 23 | . $0000 \mathrm{E}+00$ | 24 | . $0000 \mathrm{E}+00$ |
| DAY OF WEEK = SATURDAY |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | . $0000 \mathrm{E}+00$ | 2 | . $0000 \mathrm{E}+00$ | 3 | . $00000 \mathrm{E}+00$ | 4 | . $0000 \mathrm{E}+00$ | 5 | . $0000 \mathrm{E}+00$ | 6 | . $00000 \mathrm{E}+00$ | 7 | . $0000 \mathrm{E}+00$ | 8 | . $0000 \mathrm{E}+00$ |
| 9 | . $0000 \mathrm{E}+00$ | 10 | . $00000 \mathrm{E}+00$ | 11 | . $00000 \mathrm{E}+00$ | 12 | . $0000 \mathrm{E}+00$ | 13 | . $0000 \mathrm{E}+00$ | 14 | . $0000 \mathrm{E}+00$ | 15 | . $0000 \mathrm{E}+00$ | 16 | . $0000 \mathrm{E}+00$ |
| 17 | . $0000 \mathrm{E}+00$ | 18 | . $0000 \mathrm{E}+00$ | 19 | . $0000 \mathrm{E}+00$ | 20 | . $0000 \mathrm{E}+00$ | 21 | . $0000 \mathrm{E}+00$ | 22 | . $0000 \mathrm{E}+00$ | 23 | . $0000 \mathrm{E}+00$ | 24 | . $0000 \mathrm{E}+00$ |
| DAY OF WEEK = SUNDAY |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | . $0000 \mathrm{E}+00$ | 2 | . $00000 \mathrm{E}+00$ | 3 | . $00000 \mathrm{E}+00$ | 4 | . $0000 \mathrm{E}+00$ | 5 | . $0000 \mathrm{E}+00$ | 6 | . $0000 \mathrm{E}+00$ | 7 | . $0000 \mathrm{E}+00$ | 8 | . $0000 \mathrm{E}+00$ |
| 9 | . $0000 \mathrm{E}+00$ | 10 | . $00000 \mathrm{E}+00$ | 11 | . $00000 \mathrm{E}+00$ | 12 | . $0000 \mathrm{E}+00$ | 13 | . $0000 \mathrm{E}+00$ | 14 | . $00000 \mathrm{E}+00$ | 15 | . $0000 \mathrm{E}+00$ | 16 | . $00000 \mathrm{E}+00$ |
| 17 | . $0000 \mathrm{E}+00$ | 18 | . $0000 \mathrm{E}+00$ | 19 | . $0000 \mathrm{E}+00$ | 20 | . $0000 \mathrm{E}+00$ | 21 | . $0000 \mathrm{E}+00$ | 22 | . $0000 \mathrm{E}+00$ | 23 | . $0000 \mathrm{E}+00$ | 24 | . $0000 \mathrm{E}+00$ |

## Model Output

**MODELOPTs: RegDFAULT CONC
ELEV
RURAL
*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING *** (1=YES; 0=NO)

$$
\begin{aligned}
& \begin{array}{llllllllllllllllllllllllllllllllllllllllllllllllll}
1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1
\end{array} 1 \\
& \begin{array}{llllllllllllllllllllllllllllllllllllllllll}
1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1
\end{array}
\end{aligned}
$$

$$
\begin{aligned}
& \begin{array}{llllllllllllllllllllllllllllllllllllllllllllllllllllll}
1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1
\end{array}
\end{aligned}
$$

$$
\begin{aligned}
& 1111111111111 \begin{array}{llllll}
1 & 1 & 1 & 1 & 1 & 1
\end{array}
\end{aligned}
$$

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.
*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES *** (METERS/SEC)
1.54, $3.09,5.14, \quad 8.23,10.80$,

## Model Output

Unit Emission Rates (1 g/s)

**MODELOPTs: RegDFAULT CONC
*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

| Surface | file: | elsi8 | 8.sfc |  |  |  |  |  |  |  |  |  |  | Me |  | 14134 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Profile | file: | elsi8 | 8.PFL |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Surface | format: | : FREE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Profile | format: | : FREE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Surface | station | no.: |  | 0 |  |  | Upper | air stati | no.: | 319 | 90 |  |  |  |  |  |
|  |  | Name: | LAKE | ESINORE |  |  |  |  | Name: | U |  |  |  |  |  |  |
|  |  | Year: | 2008 |  |  |  |  |  | Year: | 2008 |  |  |  |  |  |  |
| First 24 hours of scalar data |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| YR MO DY | JDY HR | H0 | U* | W* | DT/DZ | ZICNV | ZIMCH | M-O LEN | z0 | BOWEN | ALBEDO | REF WS | WD | HT | REF TA | HT |
| - - - - | - - - | - - - | - - - | - - - - | - - - | - - | - - - | - - - - | - - | - - |  | - - - | - - |  | - - - |  |
| 080101 | 101 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 284.2 | 5.5 |
| 080101 | 102 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 283.1 | 5.5 |
| 080101 | 103 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 283.1 | 5.5 |
| 080101 | 104 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 283.8 | 5.5 |
| 080101 | 105 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 283.8 | 5.5 |
| 080101 | 106 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 283.8 | 5.5 |
| 080101 | 107 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 283.1 | 5.5 |
| 080101 | 108 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 0.54 | 999.00 | 999. | -9.0 | 283.8 | 5.5 |
| 080101 | 109 | 27.2 | -9.000 | -9.000 | -9.000 | 60. | -999. | -99999.0 | 0.23 | 1.00 | 0.33 | 999.00 | 999. | -9.0 | 285.9 | 5.5 |
| 080101 | 110 | 74.6 | -9.000 | -9.000 | -9.000 | 157. | -999. | -99999.0 | 0.23 | 1.00 | 0.25 | 999.00 | 999. | -9.0 | 288.1 | 5.5 |
| 080101 | 111 | 107.4 | -9.000 | -9.000 | -9.000 | 375. | -999. | -99999.0 | 0.23 | 1.00 | 0.23 | 999.00 | 999. | -9.0 | 289.9 | 5.5 |
| 080101 | 112 | 122.7 | -9.000 | -9.000 | -9.000 | 578. | -999. | -99999.0 | 0.23 | 1.00 | 0.22 | 999.00 | 999. | -9.0 | 289.9 | 5.5 |
| 080101 | 113 | 121.3 | -9.000 | -9.000 | -9.000 | 714. | -999. | -99999.0 | 0.23 | 1.00 | 0.22 | 999.00 | 999. | -9.0 | 291.4 | 5.5 |
| 080101 | 114 | 102.1 | -9.000 | -9.000 | -9.000 | 763. | -999. | -99999.0 | 0.23 | 1.00 | 0.23 | 999.00 | 999. | -9.0 | 292.0 | 5.5 |
| 080101 | 115 | 65.8 | -9.000 | -9.000 | -9.000 | 792. | -999. | -99999.0 | 0.23 | 1.00 | 0.27 | 999.00 | 999. | -9.0 | 291.4 | 5.5 |
| 080101 | 116 | 16.0 | -9.000 | -9.000 | -9.000 | 798. | -999. | -99999.0 | 0.23 | 1.00 | 0.36 | 999.00 | 999. | -9.0 | 290.4 | 5.5 |
| 080101 | 117 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 0.63 | 999.00 | 999. | -9.0 | 288.8 | 5.5 |
| 080101 | 118 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 287.5 | 5.5 |
| 080101 | 119 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 286.4 | 5.5 |
| 080101 | 120 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 285.4 | 5.5 |
| 080101 | 121 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 284.2 | 5.5 |
| 080101 | 122 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 283.1 | 5.5 |
| 080101 | 123 | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 283.1 | 5.5 |
| 080101 | 124 - | -999.0 | -9.000 | -9.000 | -9.000 | -999. | -999. | -99999.0 | 0.23 | 1.00 | 1.00 | 999.00 | 999. | -9.0 | 282.5 | 5.5 |

First hour of profile data
YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV $\begin{array}{lllllllllll}08 & 01 & 01 & 01 & 5.5 & 0 & -999 . & -99.00 & 284.3 & 99.0 & -99.00 \\ 08 & 01 & 01 & 01 & 9.1 & 1 & -999 . & -99.00 & -999.0 & 99.0 & -99.00 \\ -99.00\end{array}$

F indicates top of profile (=1) or below (=0)

## Model Output

Unit Emission Rates (1 g/s)

**MODELOPTs: RegDFAULT CONC
EV RURAL
*** THE SUMMARY OF MAXIMUM PERIOD ( 43848 HRS) RESULTS ***
** CONC OF OTHER IN MICROGRAMS/M**3
GROUP ID $\quad \ldots \ldots$ RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID

| 1A | 1ST | HIGHEST | VALUE IS | 6.87765 | AT ( | 491009.74, | 3720425.54, | 432.77, | 521.00, | 0.00) | DC |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2ND | HIGHEST | VALUE IS | 6.87042 | AT | 491064.52, | 3720504.66, | 430.04, | 575.00, | 0.00) | DC |
|  | 3RD | HIGHEST | VALUE IS | 6.50259 | AT | 491119.30, | 3720583.78, | 432.83, | 575.00, | 0.00) | DC |
|  | 4TH | HIGHEST | Value is | 6.32416 | AT | 491082.78, | 3720534.33, | 430.28, | 575.00, | 0.00) | DC |
|  | 5TH | HIGHEST | VALUE IS | 6.17968 | AT | 491028.00, | 3720455.21, | 432.49, | 521.00, | 0.00) | DC |
|  | 6TH | HIGHEST | VALUE IS | 5.81315 | AT | 491046.26, | 3720484.88, | 431.10, | 575.00, | 0.00) | DC |
|  | 7TH | HIGHEST | Value is | 5.70071 | AT | 491101.04, | 3720564.00, | 431.53, | 575.00, | 0.00) | DC |
|  | 8TH | HIGHEST | VALUE IS | 5.47366 | AT | 491064.52, | 3720514.55, | 430.02, | 575.00, | 0.00) | DC |
|  | 9TH | HIGHEST | VALUE IS | 5.36867 | AT | 491009.74, | 3720435.43, | 432.99, | 521.00, | 0.00) | DC |
|  | 10TH | HIGHEST | VALUE IS | 5.35858 | AT | 491101.04, | 3720554.11, | 430.93, | 575.00, | 0.00) | DC |
| 1B | 1ST | HIGHEST | VALUE IS | 10.41932 | AT | 491009.74, | 3720425.54, | 432.77, | 521.00, | $0.00)$ | DC |
|  | 2ND | HIGHEST | VALUE IS | 10.26300 | AT | 491064.52, | 3720504.66, | 430.04, | 575.00, | 0.00) | DC |
|  | 3RD | HIGHEST | VALUE IS | 9.84406 | AT | 491119.30, | 3720583.78, | 432.83, | 575.00, | 0.00) | DC |
|  | 4TH | HIGHEST | VALUE IS | 9.27278 | AT | 491028.00, | 3720455.21, | 432.49, | 521.00, | 0.00) | DC |
|  | 5TH | HIGHEST | VALUE IS | 9.24877 | AT | 491082.78, | 3720534.33, | 430.28, | 575.00, | 0.00) | DC |
|  | 6TH | HIGHEST | VALUE IS | 8.49858 | AT | 491046.26, | 3720484.88, | 431.10, | 575.00, | 0.00) | DC |
|  | 7TH | HIGHEST | VALUE IS | 8.34538 | AT | 491101.04, | 3720564.00, | 431.53, | 575.00, | 0.00) | DC |
|  | 8TH | HIGHEST | VALUE IS | 7.84630 | AT | 491064.52, | 3720514.55, | 430.02, | 575.00, | 0.00) | DC |
|  | 9TH | HIGHEST | VALUE IS | 7.81836 | AT | 491009.74, | 3720435.43, | 432.99, | 521.00, | 0.00) | DC |
|  | 10TH | HIGHEST | VALUE IS | 7.75598 | AT ( | 491101.04, | 3720554.11, | 430.93, | 575.00, | 0.00) | DC |

[^20]DC $=$ DISCCART
DP $=$ DISCPOLR

## Model Output



## Model Output



## Model Output



## Model Output

```
*** AERMOD - VERSION 15181 *** *** C:\Users\GraphicsBRK\Desktop\TVCS_HRA\TVCS_HRA.isc 08/26/16
*** AERMET - VERSION 14134 *** ***
**MODELOPTs: RegDFAULT CONC ELEV RURAL
*** Message Summary : AERMOD Model Execution ***
-------- Summary of Total Messages --------
A Total of 0 Fatal Error Message(s)
A Total of
A Total of
    0 Warning Message(s)
    1916 Informational Message(s)
A Total of 43848 Hours Were Processed
A Total of 10 Calm Hours Identified
A Total of 1906 Missing Hours Identified ( 4.35 Percent)
******** FATAL ERROR MESSAGES ********
    *** NONE ***
******** WARNING MESSAGES ********
        NONE
*** AERMOD Finishes Successfully ***
```


## Appendix

This page intentionally left blank.

## Appendix D. Risk Calculation Worksheets

## Appendix

This page intentionally left blank.

Table D1
MER Concentration Worksheet
Toxic Air Contaminants - Mobile Sources

| Source <br> No. <br> (a) | Source <br> (b) | Contaminant <br> (c) | Weight <br> Fraction <br> (d) | Emission Rates ${ }^{1}$ Annual Avg $\qquad$ <br> (e) | AERMOD Output ${ }^{2}$ Annual Avg <br> $\left(\mu \mathrm{g} / \mathrm{m}^{3}\right)$ <br> (f) | Annual Average MER Concentration $\left(\mu \mathrm{g} / \mathrm{m}^{3}\right)$ $(\mathrm{g})$ | Emission Rates ${ }^{1}$ <br> 1-Hour <br>  <br> $(\mathrm{g} / \mathrm{s})$ <br> $(\mathrm{h})$ | AERMOD Output ${ }^{2}$ <br> 1-Hour <br> $\left(\mu \mathrm{g} / \mathrm{m}^{3}\right)$ <br> (i) | Acute (1-Hour) <br> MER <br> Concentration <br> ( $\mu \mathrm{g} / \mathrm{m}^{3}$ ) $\qquad$ (i) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Staff Scenario |  |  |  |  |  |  |  |  |  |
| 1 | $\begin{aligned} & \hline \text { SR-79 Trucks (DPM) } \\ & \text { SR-79 Cars (TOG) } \end{aligned}$ | Diesel Particulate <br> Acetaldehyde <br> Acrolein <br> Benzene <br> 1,3-Butadiene <br> Ethyl benzene <br> Formaldehyde <br> Hexane <br> Methanol <br> Methyl Ethyl Ketone <br> Naphthalene <br> Propylene <br> Styrene <br> Toluene <br> Xylenes | $\begin{aligned} & 1.00 \mathrm{E}+00 \\ & 2.80 \mathrm{E}-03 \\ & 1.30 \mathrm{E}-03 \\ & 2.83 \mathrm{E}-02 \\ & 5.50 \mathrm{E}-03 \\ & 1.17 \mathrm{E}-02 \\ & 1.58 \mathrm{E}-02 \\ & 3.14 \mathrm{E}-02 \\ & 1.20 \mathrm{E}-03 \\ & 2.00 \mathrm{E}-04 \\ & 5.00 \mathrm{E}-04 \\ & 3.06 \mathrm{E}-02 \\ & 1.20 \mathrm{E}-03 \\ & 7.46 \mathrm{E}-02 \\ & 5.38 \mathrm{E}-02 \end{aligned}$ | $\begin{gathered} \hline 1.01 \mathrm{E}-03 \\ 1.53 \mathrm{E}-02 \end{gathered}$ | $\begin{aligned} & \hline 6.88 \\ & 10.4 \end{aligned}$ | 0.00697 0.00045 0.00021 0.00450 0.00087 0.00186 0.00251 0.00499 0.00019 0.00003 0.00008 0.00487 0.00019 0.01186 0.00856 | $\begin{gathered} \hline \mathrm{n} / \mathrm{a} \\ 1.44 \mathrm{E}-02 \end{gathered}$ | 763.2 | $\begin{aligned} & 0.0308 \\ & 0.0143 \\ & 0.3110 \\ & 0.0604 \\ & 0.1286 \\ & 0.1736 \\ & 0.3450 \\ & 0.0132 \\ & 0.0022 \\ & 0.0055 \\ & 0.3362 \\ & 0.0132 \\ & 0.8197 \\ & 0.5912 \\ & \hline \end{aligned}$ |
| Student Scenario |  |  |  |  |  |  |  |  |  |
| 1 | $\begin{aligned} & \hline \text { SR-79 Trucks (DPM) } \\ & \text { SR-79 Cars (TOG) } \end{aligned}$ | Diesel Particulate Acetaldehyde Acrolein Benzene 1,3-Butadiene Ethylbenzene Formaldehyde Hexane Methanol Methyl Ethyl Ketone Naphthalene Propylene Styrene Toluene Xylenes | $\begin{array}{\|l\|} \hline 1.00 \mathrm{E}+00 \\ 2.80 \mathrm{E}-03 \\ 1.30 \mathrm{E}-03 \\ 2.83 \mathrm{E}-02 \\ 5.50 \mathrm{E}-03 \\ 1.17 \mathrm{E}-02 \\ 1.58 \mathrm{E}-02 \\ 3.14 \mathrm{E}-02 \\ 1.20 \mathrm{E}-03 \\ 2.00 \mathrm{E}-04 \\ 5.00 \mathrm{E}-04 \\ 3.06 \mathrm{E}-02 \\ 1.20 \mathrm{E}-03 \\ 7.46 \mathrm{E}-02 \\ 5.38 \mathrm{E}-02 \\ \hline \end{array}$ | $\begin{aligned} & \hline 1.39 \mathrm{E}-03 \\ & 1.33 \mathrm{E}-02 \end{aligned}$ | $\begin{aligned} & \hline 6.88 \\ & 10.4 \end{aligned}$ | 0.00957 0.00039 0.00018 0.00393 0.00076 0.00162 0.00219 0.00436 0.00017 0.00003 0.00007 0.00425 0.00017 0.01035 0.00747 | $\begin{gathered} \hline \mathrm{n} / \mathrm{a} \\ 1.44 \mathrm{E}-02 \end{gathered}$ | 763.2 | $\begin{aligned} & 0.0308 \\ & 0.0143 \\ & 0.3110 \\ & 0.0604 \\ & 0.1286 \\ & 0.1736 \\ & 0.3450 \\ & 0.0132 \\ & 0.0022 \\ & 0.0055 \\ & 0.3362 \\ & 0.0132 \\ & 0.8197 \\ & 0.5912 \\ & \hline \end{aligned}$ |
| Note: Maximum Exposed Receptor (MER) |  |  |  |  |  | For Cancer/Chronic Calculation |  |  | For Acute Calculation |

[^21]Table D2
HARP2 Results for Cancer Risk and Chronic Hazards
School Scenario


Table D3
HARP2 Results for Acute Hazards

| Source <br> No. <br> (a) | Source | Contaminant | Acute Non-Cancer Risks - Toxicological Endpoints* |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | CV | CNS | IMMUN | KIDNEY | GILV | REPRO | RESP | SKIN | EYE | BONE | ENDO | BLOOD |
|  | (b) | (c) | (f) | (g) | (h) | (i) | (i) | (k) | (1) | (m) | ( n ) | ( 0 ) | (p) | (g) |
| 1 | $\begin{aligned} & \hline \text { SR-79 Trucks (DPM) } \\ & \text { SR-79 Cars (TOG) } \end{aligned}$ | Diesel Particulate |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Acetaldehyde |  |  |  |  |  |  | 6.55E-05 |  | 6.55E-05 |  |  |  |
|  |  | Acrolein |  |  |  |  |  |  | 5.71E-03 |  | 5.71E-03 |  |  |  |
|  |  | Benzene |  |  | 1.15E-02 |  |  | 1.15E-02 |  |  |  |  |  | 1.15E-02 |
|  |  | 1,3-Butadiene |  |  |  |  |  | 9.16E-05 |  |  |  |  |  |  |
|  |  | Ethylbenzene |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Formaldehyde |  |  |  |  |  |  |  |  | 3.16E-03 |  |  |  |
|  |  | Hexane |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Methanol |  | $4.71 \mathrm{E}-07$ |  |  |  |  |  |  |  |  |  |  |
|  |  | Methyl Ethyl Ketone |  |  |  |  |  |  | 1.69E-07 |  | 1.69E-07 |  |  |  |
|  |  | Naphthalene |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Propylene |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Styrene | 6.28E-07 |  |  |  |  | 6.28E-07 | 6.28E-07 |  | 6.28E-07 |  |  |  |
|  |  | Toluene |  | $2.22 \mathrm{E}-05$ |  |  |  | $2.22 \mathrm{E}-05$ | 2.22E-05 |  | 2.22E-05 |  |  |  |
|  |  | Xylenes |  | $2.69 \mathrm{E}-05$ |  |  |  |  | $2.69 \mathrm{E}-05$ |  | $2.69 \mathrm{E}-05$ |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Total - All Sources | 6.28E-07 | $4.95 \mathrm{E}-05$ | $1.15 \mathrm{E}-02$ | $0.00 \mathrm{E}+00$ | .00E+00 | 1.16E-02 | 5.83E-03 | $0.00 \mathrm{E}+00$ | 8.99E-03 | $0.00 \mathrm{E}+00$ | $0.00 \mathrm{E}+00$ | $1.15 \mathrm{E}-02$ |

Note: Student Scenario emission rates produced higher acute (1-hour) hazard indices, compared to Staff Scenario emission rates.

Note: Health risks calculated using HARP2, Risk Assessment Standalone Tool, version 16057 (CARB, 2016).

## Maximum Acute Hazard Index 1.16E-02 Repro

* Key to Toxicological Endpoints

| CV | Cardiovascular System | RESP | Respiratory System |
| :--- | :--- | :--- | :--- |
| CNS | Central Nervous System | SKIN | Skin irritation and/or other effects |
| IMMUN | Immune System | EYE | Eye irritation and/or other effects |
| KIDN | Kidneys | BONE | Bones and Teeth |
| GILV | Gastrointestinal Tract and Liver/Alimentary Tract | ENDO | Endocrine System |
| REPRO | Reproductive System | BLOOD | Hematological System |

Table D4
HARP2 Results for 8-Hour Hazards

| Source <br> No. <br> ( a ) | Source | Contaminant | 8-Hour Non-Cancer Risks - Toxicological Endpoints* |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | CV |  | IMMUN | KIDNEY | GILV | REPRO | RESP | SKIN | EYE | BONE |  | BLOOD |
|  | (b) | ( c) |  |  |  | (i) |  | (k) | (1) |  |  | (0) | (p) | (q) |
| 1 | $\begin{aligned} & \text { SR-79 Trucks (DPM) } \\ & \text { SR-79 Cars (TOG) } \end{aligned}$ | Diesel Particulate |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Acetaldehyde |  |  |  |  |  |  | 1.48E-06 |  |  |  |  |  |
|  |  | Acrolein |  |  |  |  |  |  | 2.96E-04 |  |  |  |  |  |
|  |  | Benzene |  |  |  |  |  |  |  |  |  |  |  | 1.50E-03 |
|  |  | 1,3-Butadiene |  |  |  |  |  | $9.72 \mathrm{E}-05$ |  |  |  |  |  |  |
|  |  | Ethylbenzene |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Formaldehyde |  |  |  |  |  |  | 2.79E-04 |  |  |  |  |  |
|  |  | Hexane |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Methanol |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Methyl Ethyl Ketone |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Naphthalene |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Propylene |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Styrene |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Toluene |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Xylenes |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Total - All Sources | $0.00 \mathrm{~F}+00$ | $0.00 \mathrm{~F}+00$ | $0.00 \mathrm{E}+00$ | $0.00 \mathrm{E}+00$ | . $00 \mathrm{E}+00$ | $972 \mathrm{E}-05$ | $5.76 \mathrm{E}-04$ | $0.00 \mathrm{E}+00$ | $0.00 \mathrm{~F}+00$ | $0.00 \mathrm{~F}+00$ | $0.00 \mathrm{E}+00$ | 150F-03 |
|  |  | Total - All Sources | E | 0.00 E | 0.00E 0 | 0.00E 00 | .00E+00 | 9.72E-05 | -04 | 迷 | 迷 | , | , | 50E-03 |

Note: Staff Scenario emission rates produced higher 8-hour chronic hazard indices, compared to Student Scenario emission rates.

Note: Health risks calculated using HARP2, Risk Assessment Standalone Tool, version 16057 (CARB, 2016).

## Maximum 8-Hour Hazard Index 1.50E-03 Blood

* Key to Toxicological Endpoints

| CV | Cardiovascular System | RESP | Respiratory System |
| :--- | :--- | :--- | :--- |
| CNS | Central Nervous System | SKIN | Skin irritation and/or other effects |
| IMMUN | Immune System | EYE | Eye irritation and/or other effects |
| KIDN | Kidneys | BONE | Bones and Teeth |
| GILV | Gastrointestinal Tract and Liver/Alimentary Tract | ENDO | Endocrine System |
| REPRO | Reproductive System | BLOOD | Hematological System |

Table D5
Mobile Source Pollutant Concentration Worksheet Criteria Air Pollutants

${ }^{1}$ Emission Rates from Source Emissions Inventory (Appendix A).
${ }^{2}$ AERMOD Output based on unit emission rates for roadway segments ( $1 \mathrm{~g} / \mathrm{s}$ ).
${ }^{3} \mathrm{CO}$ conversion factor of $8.733 \mathrm{E}-04 \mathrm{ppm}$ per $\mu \mathrm{g} / \mathrm{m}^{3}$ was used to convert concentrations.
${ }^{4}$ NOx conversion factor of $5.3157 \mathrm{E}-04 \mathrm{ppm}$ per $\mu \mathrm{g} / \mathrm{m}^{3}$ was used to convert concentrations.
5 NOx to $\mathrm{NO}_{2}$ conversion rate was derived from a report entitled Final Localized Significance Threshold Methodology (SCAQMD, 2008)
Distance from
Roadway to Project $\quad \mathrm{NO}_{\mathrm{X}}$ to $\mathrm{NO}_{2}$

| Mobile Source | Site (m) | Conversion Factor |
| :---: | :---: | :---: |
| SR-79 | 18.5 | 0.053 |

## Appendix

This page intentionally left blank.

## Appendix B Air Quality and Greenhouse Gas Background and Modeling Data

# Air Quality and Greenhouse Gas Background and Modeling Data 

## AIR QUALITY

## Climate/Meteorology

## SOUTH COAST AIR BASIN

The project site lies within the South Coast Air Basin (SoCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

## Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB , ranging from the low to middle 60s, measured in degrees Fahrenheit $\left({ }^{\circ} \mathrm{F}\right)$. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the project site is the Elsinore, California Monitoring Station (ID No. 042805). The average low is reported at $36.4^{\circ} \mathrm{F}$ in January, and the average high is $98.1^{\circ} \mathrm{F}$ in July and August (WRCC 2016).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. The historical rainfall average for the project area is 12.01 inches per year (WRCC 2016).

## Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 2005).

## Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

## Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (SCAQMD 2005).

## Air Quality Regulations

The Proposed Project has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards promulgated at the local, state, and federal levels. The project site is in the SoCAB and is subject to the rules and regulations imposed by the South Coast Air Quality Management District (SCAQMD). However, SCAQMD reports to California Air Resources board (CARB), and all criteria emissions are also governed by the California and national Ambient Air Quality Standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the Proposed Project are summarized below.

## AMBIENT AIR QUALITY STANDARDS

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state
to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, Ambient Air Quality Standards for Criteria Pollutants, these pollutants include ozone $\left(\mathrm{O}_{3}\right)$, nitrogen dioxide $\left(\mathrm{NO}_{2}\right)$, carbon monoxide (CO), sulfur dioxide $\left(\mathrm{SO}_{2}\right)$, coarse inhalable particulate matter $\left(\mathrm{PM}_{10}\right)$, fine inhalable particulate matter $\left(\mathrm{PM}_{2.5}\right)$, and lead ( Pb ). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

| Pollutant | Averaging Time | California Standard | $\begin{gathered} \hline \text { Federal Primary } \\ \text { Standard }^{2} \\ \hline \end{gathered}$ | Major Pollutant Sources |
| :---: | :---: | :---: | :---: | :---: |
| Ozone ( $\left.\mathrm{O}_{3}\right)^{3}$ | 1 hour | 0.09 ppm | * | Motor vehicles, paints, coatings, and solvents. |
|  | 8 hours | 0.070 ppm | 0.070 ppm |  |
| Carbon Monoxide (CO) | 1 hour | 20 ppm | 35 ppm | Internal combustion engines, primarily gasoline-powered motor vehicles. |
|  | 8 hours | 9.0 ppm | 9 ppm |  |
| Nitrogen Dioxide ( $\mathrm{NO}_{2}$ ) | Annual Arithmetic Mean | 0.030 ppm | 0.053 ppm | Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads. |
|  | 1 hour | 0.18 ppm | 0.100 ppm |  |
| Sulfur Dioxide ( $\mathrm{SO}_{2}$ ) | Annual Arithmetic Mean | * | 0.030 ppm | Fuel combustion, chemical plants, sulfur recovery plants, and metal processing. |
|  | 1 hour | 0.25 ppm | 0.075 ppm |  |
|  | 24 hours | 0.04 ppm | 0.14 ppm |  |
| Respirable Coarse Particulate Matter (PM10) | Annual Arithmetic Mean | $20 \mu \mathrm{~g} / \mathrm{m}^{3}$ | * | Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., windraised dust and ocean sprays). |
|  | 24 hours | $50 \mu \mathrm{~g} / \mathrm{m}^{3}$ | $150 \mu \mathrm{~g} / \mathrm{m}^{3}$ |  |
| Respirable Fine Particulate Matter $\left(\mathrm{PM}_{2.5}\right)^{4}$ | Annual Arithmetic Mean | $12 \mu \mathrm{~g} / \mathrm{m}^{3}$ | $12 \mu \mathrm{~g} / \mathrm{m}^{3}$ | Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., windraised dust and ocean sprays). |
|  | 24 hours | * | $35 \mu \mathrm{~g} / \mathrm{m}^{3}$ |  |

Table 1 Ambient Air Quality Standards for Criteria Pollutants

| Pollutant | Averaging Time | California Standard ${ }^{1}$ | $\begin{aligned} & \hline \text { Federal Primary } \\ & \text { Standard }^{2} \end{aligned}$ | Major Pollutant Sources |
| :---: | :---: | :---: | :---: | :---: |
| Lead (Pb) | 30-Day Average | $1.5 \mu \mathrm{~g} / \mathrm{m}^{3}$ | * | Present source: lead smelters, battery manufacturing \& recycling facilities. Past source: combustion of leaded gasoline. |
|  | Calendar Quarter | * | $1.5 \mu \mathrm{~g} / \mathrm{m}^{3}$ |  |
|  | Rolling 3-Month Average | * | $0.15 \mu \mathrm{~g} / \mathrm{m}^{3}$ |  |
| Sulfates $\left(\mathrm{SO}_{4}\right)^{5}$ | 24 hours | $25 \mu \mathrm{~g} / \mathrm{m}^{3}$ | * | Industrial processes. |
| Visibility Reducing Particles | 8 hours | $\mathrm{ExCo}=0.23 / \mathrm{km}$ visibility of $10 \geq$ miles | No Federal Standard | Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. |
| Hydrogen Sulfide | 1 hour | 0.03 ppm | No Federal Standard | Hydrogen sulfide $\left(\mathrm{H}_{2} \mathrm{~S}\right)$ is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. |
| Vinyl Chloride | 24 hour | 0.01 ppm | No Federal Standard | Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents. |

Source: CARB 2016a.
Notes: ppm: parts per million; $\mu \mathrm{g} / \mathrm{m}^{3}$ : micrograms per cubic meter

* Standard has not been established for this pollutant/duration by this entity.

1 California standards for $\mathrm{O}_{3}, \mathrm{CO}$ (except 8-hour Lake Tahoe), $\mathrm{SO}_{2}$ (1 and 24 hour), $\mathrm{NO}_{2}$, and particulate matter ( $\mathrm{PM}_{10}, \mathrm{PM}_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than $\mathrm{O}_{3}, \mathrm{PM}$, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The $\mathrm{O}_{3}$ standard is attained when the fourth highest 8 -hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM 10 , the 24 -hour standard is attained when the expected number of days per calendar year with a 24 -hour average concentration above $150 \mu \mathrm{~g} / \mathrm{m}^{3}$ is equal to or less than one. For $\mathrm{PM}_{2.5}$, the 24 -hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm .
4 On December 14, 2012, the national annual $\mathrm{PM}_{2.5}$ primary standard was lowered from $15 \mu \mathrm{~g} / \mathrm{m}^{3}$ to $12.0 \mu \mathrm{~g} / \mathrm{m}^{3}$. The existing national 24-hour $P \mathrm{PM}_{2.5}$ standards (primary and secondary) were retained at $35 \mu \mathrm{~g} / \mathrm{m}^{3}$, as was the annual secondary standard of $15 \mu \mathrm{~g} / \mathrm{m}^{3}$. The existing 24 -hour $\mathrm{PM}_{10}$ standards (primary and secondary) of $150 \mu \mathrm{~g} / \mathrm{m}^{3}$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour $\mathrm{SO}_{2}$ standard was established and the existing 24-hour and annual primary standards were revoked. The 1 -hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million ( ppm ). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm . In this case, the national standard of 75 ppb is identical to 0.075 ppm .

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code


## CRITERIA AIR POLLUTANTS

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen dioxide $\left(\mathrm{NO}_{2}\right)$, sulfur dioxide $\left(\mathrm{SO}_{2}\right)$, coarse inhalable particulate matter $\left(\mathrm{PM}_{10}\right)$, fine inhalable particulate matter $\left(\mathrm{PM}_{2.5}\right)$, and lead $(\mathrm{Pb})$ are primary air pollutants. Of these, $\mathrm{CO}, \mathrm{SO}_{2}, \mathrm{NO}_{2}, \mathrm{PM}_{10}$, and $\mathrm{PM}_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen $\left(\mathrm{NO}_{\mathrm{x}}\right)$ are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone $\left(\mathrm{O}_{3}\right)$ and $\mathrm{NO}_{2}$ are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; USEPA 2015a). The SoCAB is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2015a).

Volatile Organic Compounds (VOC) are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of ozone $\left(\mathrm{O}_{3}\right)$, SCAQMD has established a significance threshold for this pollutant (SCAQMD 2005).

Nitrogen Oxides ( $\mathbf{N O}_{\mathbf{x}}$ ) are a byproduct of fuel combustion and contribute to the formation of $\mathrm{O}_{3}, \mathrm{PM}_{10}$, and $\mathrm{PM}_{2.5}$. The two major forms of $\mathrm{NO}_{\mathrm{x}}$ are nitric oxide $(\mathrm{NO})$ and nitrogen dioxide $\left(\mathrm{NO}_{2}\right)$. The principal form of $\mathrm{NO}_{2}$ produced by combustion is NO , but NO reacts with oxygen to form $\mathrm{NO}_{2}$, creating the mixture of NO and $\mathrm{NO}_{2}$ commonly called $\mathrm{NO}_{x} . \mathrm{NO}_{2}$ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, $\mathrm{NO}_{2}$ is only potentially irritating. There is some indication of a relationship between $\mathrm{NO}_{2}$ and chronic pulmonary fibrosis. Some increase in bronchitis in
children (two and three years old) has also been observed at concentrations below 0.3 part per million (ppm). $\mathrm{NO}_{2}$ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure (SCAQMD 2005; USEPA 2015a). The SoCAB is designated as an attainment area for $\mathrm{NO}_{2}$ under the National AAQS California AAQS (CARB 2015a).

Sulfur Dioxide ( $\mathbf{S O}_{2}$ ) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of $\mathrm{SO}_{2}$ (SCAQMD 2005; USEPA 2015a). When sulfur dioxide forms sulfates $\left(\mathrm{SO}_{4}\right)$ in the atmosphere, together these pollutants are referred to as sulfur oxides $\left(\mathrm{SO}_{\mathrm{x}}\right)$. Thus, $\mathrm{SO}_{2}$ is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, $\mathrm{SO}_{2}$ may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, $\mathrm{SO}_{2}$ may do greater harm by injuring lung tissue. The SoCAB is designated as attainment under the California and National AAQS (CARB 2015a).

Suspended Particulate Matter ( $\mathbf{P M}_{10}$ and $\mathbf{P M}_{2.5}$ ) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or $\mathrm{PM}_{10}$, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $\mathrm{PM}_{2.5}$, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading (i.e., fugitive dust). Both $\mathrm{PM}_{10}$ and $\mathrm{PM}_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005).

The US Environmental Protection Agency's (EPA) scientific review concluded that $\mathrm{PM}_{2.5}$, which penetrates deeply into the lungs, is more likely than $\mathrm{PM}_{10}$ to contribute to health effects and at concentrations that extend well below those allowed by the current $\mathrm{PM}_{10}$ standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms (SCAQMD 2005). There has been emerging evidence that even smaller particulates with an aerodynamic diameter of $<0.1$ microns or less (i.e., $\leq 0.1$ millionths of a meter or $<0.000004$ inch), known as ultrafine particulates (UFPs), have human health implications, because UFPs toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (SCAQMD 2013). However, the EPA or CARB have yet to adopt AAQS to regulate these particulates. Diesel particulate matter (DPM) is classified by the CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment, ${ }^{1}$ environmental damage, ${ }^{2}$ and aesthetic damage ${ }^{3}$

[^22](SCAQMD 2005; USEPA 2015a). The SoCAB is a nonattainment area for $\mathrm{PM}_{2.5}$ under California and National AAQS and a nonattainment area for $\mathrm{PM}_{10}$ under the California AAQS (CARB 2015a). ${ }^{4}$

Ozone ( $\mathbf{O}_{3}$ ) is commonly referred to as "smog" and is a gas that is formed when VOCs and NO ${ }_{x}$, both byproducts of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. $\mathrm{O}_{3}$ is a secondary criteria air pollutant. $\mathrm{O}_{3}$ concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for the formation of this pollutant. $\mathrm{O}_{3}$ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing $\mathrm{O}_{3}$ can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level $\mathrm{O}_{3}$ also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. $\mathrm{O}_{3}$ also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, $\mathrm{O}_{3}$ harms sensitive vegetation during the growing season (SCAQMD 2005; USEPA 2015a). The SoCAB is designated as extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2015a).

Lead ( $\mathbf{P b}$ ) concentrations decades ago exceeded the state and federal AAQS by a wide margin, but have not exceeded state or federal air quality standards at any regular monitoring station since 1982 (SCAQMD 2005). However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources ${ }^{5}$ recorded every localized violations of the new state and federal standards. As a result of these localized violations, the Los Angeles County portion of the SoCAB was designated in 2010 as nonattainment under the National AAQS for lead (SCAQMD 2012; CARB 2015a). The project is not characteristic of industrial-type projects that have the potential to emit lead. Therefore, lead is not a pollutant of concern for the project.

## TOXIC AIR CONTAMINANTS

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean

[^23]Air Act (42 United States Code $\int 7412[\mathrm{~b}]$ ) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

CARB has promulgated the following specific rules to limit TAC emissions:

- CARB Rule 2485 (13 CCR Chapter 10, Section 2485), Airborne Toxic Control Measure to Limit DieselFueled Commercial Motor Vehicle Idling
- CARB Rule 2480 (13 CCR Chapter 10, Section 2480), Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- CARB Rule 2477 (13 CCR Section 2477 and Article 8), Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

In addition, to reduce exposure to TACs, CARB developed and approved the Air Quality and Land Use Handbook: A Community Health Perspective (2005) to provide guidance regarding the siting of sensitive land uses
in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3 butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

## Multiple Airborne Toxics Exposure Study (MATES)

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on ambient concentrations of TACs and estimated the potential health risks from air toxics in the SoCAB. In 2008, SCAQMD conducted its third update to the MATES study (MATES III). The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, accounting for 84 percent of the cancer risk (SCAQMD 2008a).

SCAQMD recently released the fourth update (MATES IV). The results showed that the overall monitored risk for excess cancer from a lifetime exposure to ambient levels of air toxics decreased to approximately 418 in one million. Compared to the 2008 MATES III, monitored excess cancer risks decreased by approximately 65 percent. Approximately 90 percent of the risk is attributed to mobile sources while 10 percent is attributed to TACs from stationary sources, such as refineries, metal processing facilities, gas stations, and chrome plating facilities. The largest contributor to this risk was diesel exhaust, accounting for approximately 68 percent of the air toxics risk. Compared to MATES III, MATES IV found substantial improvement in air quality and associated decrease in air toxics exposure. As a result, the estimated basin-wide populationweighted risk decreased by approximately 57 percent compared to the analysis done for the MATES III time period (SCAQMD 2015a).

The Office of Environmental Health Hazard Assessment (OEHHA) updated the guidelines for estimating cancer risks on March 6, 2015. The new method utilizes higher estimates of cancer potency during early life exposures, which result in a higher calculation of risk. There are also differences in the assumptions on breathing rates and length of residential exposures. When combined together, SCAQMD estimates that risks for a given inhalation exposure level will be about 2.7 times higher using the proposed updated methods identified in MATES IV (e.g., 2.7 times higher than 418 in one million overall excess cancer risk) (SCAQMD 2015a).

## Air Quality Management Planning

SCAQMD is the agency responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

## 2012 AQMP

On December 7, 2012 SCAQMD adopted the 2012 AQMP (Plan), which employs the most up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. The Plan also addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. The Plan builds upon the approach identified in the 2007 AQMP for attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the urgent need to engage in interagency coordinated planning to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria air pollutant standards within the timeframes allowed under the Federal CAA. The Plan demonstrates attainment of federal 24-hour $\mathrm{PM}_{2.5}$ standard by 2014 and the federal 8 -hour ozone standard by 2023. Preliminary ambient air quality data suggests that meeting the 2016 federal 24 -hour $\mathrm{PM}_{2.5}$ standards by the end of 2014 is not likely, largely due to the usually extreme drought conditions in the SoCAB (SCAQMD 2015b). The Plan includes an update to the revised EPA 8-hour ozone control plan with new commitments for short-term $\mathrm{NO}_{\mathrm{x}}$ and VOC reductions. In addition, it also identifies emerging issues of ultrafine $\left(\mathrm{PM}_{1.0}\right)$ particulate matter and near-roadway exposure, and an analysis of energy supply and demand.

## 2016 Draft AQMP

The SCAQMD is in the process of updating the AQMP and released a draft of the 2016 AQMP on June 30, 2016. The 2016 AQMP addresses strategies and measures to attain the 2008 federal 8 -hour ozone standard by 2031, the 2012 federal annual $\mathrm{PM}_{2.5}$ standard by 2025, the 2006 federal 24 -hour $\mathrm{PM}_{2.5}$ standard by 2019 , the 1997 federal 8 -hour ozone standard by 2023, and the 1979 federal 1-hour ozone standard by year 2022. It is projected that total $\mathrm{NOx}_{\mathrm{x}}$ emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8 -hour ozone standard would also lead to attaining the 1979 federal 1 -hour ozone standard by year 2022 (SCAQMD 2016a), which requires reducing NOx emissions in the SoCAB to 250 tpd. Reducing $\mathrm{NO}_{\mathrm{x}}$ emissions would also reduce $\mathrm{PM}_{2.5}$ concentrations within the SoCAB. However, as the goal is to meet the 2012 federal annual $\mathrm{PM}_{2.5}$ standard no later than year 2025, SCAQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under this federal standard. A "moderate" nonattainment would require meeting the 2012 federal standard by no later than 2021. Overall, the 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. Strategies outlined in the 2016 AQMP would be implemented in collaboration between CARB and the EPA (SCAQMD 2016a).

## LEAD STATE IMPLEMENTATION PLAN

In 2008 EPA designated the Los Angeles County portion of the SoCAB nonattainment under the federal lead $(\mathrm{Pb})$ classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard. The rest of the SoCAB, outside the Los Angeles County nonattainment area remains in attainment of the new standard. On May 24, 2012, CARB approved the SIP revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to EPA for approval.

## AREA DESIGNATIONS

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the State Implementation Plan (SIP). Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- Unclassified: a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- Attainment: a pollutant is in attainment if the CAAQS for that pollutant was not violated at any site in the area during a three-year period.
- Nonattainment: a pollutant is in nonattainment if there was at least one violation of a state AAQS for that pollutant in the area.
- Nonattainment/Transitional: a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 2, Attainment Status of Criteria Pollutants in the South Coast Air Basin. The SoCAB is designated in attainment of the California AAQS for sulfates. The SoCAB is designated as nonattainment for lead (Los Angeles County only) under the National AAQS.

Table 2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

| Pollutant | State | Federal |
| :---: | :---: | :---: |
| Ozone - 1-hour | Extreme Nonattainment | No Federal Standard |
| Ozone - 8-hour | Extreme Nonattainment | Extreme Nonattainment |
| $\mathrm{PM}_{10}$ | Serious Nonattainment | Attainment/Maintenance |
| $\mathrm{PM}_{2.5}$ | Nonattainment | Nonattainment |
| CO | Attainment | Attainment |
| $\mathrm{NO}_{2}$ | Attainment | Attainment/Maintenance |
| $\mathrm{SO}_{2}$ | Attainment | Attainment |
| Lead | Attainment | Nonattainment (Los Angeles County only ${ }^{1}$ |
| All others | Attainment/Unclassified | Attainment/Unclassified |
| Source: CARB |  |  |
| ${ }^{1}$ In 2010. the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new federal and existing state AAQS as a result of large industrial <br> emitters. Remaining areas within the SoCAB are unclassified. |  |  |

## Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements taken by the SCAQMD. The project site is located within Source Receptor Area (SRA) 26 - Temecula Valley. The air quality monitoring station closest to the project site is the Winchester-33700 Borel Road Monitoring Station. This station monitors $\mathrm{O}_{3}$. Data for $\mathrm{CO}, \mathrm{NO}_{2}$, and $\mathrm{PM}_{10}$ is supplemented by Lake Elsinore-W Flint Street Monitoring Station. Data for $\mathrm{PM}_{2.5}$ is supplemented by Riverside-Magnolia Monitoring Station. Data for $\mathrm{SO}_{2}$ is supplemented by Riverside-Rubidoux Monitoring Station. The most current five years of data monitored at these monitoring stations are included in Table 3, Ambient Air Quality Monitoring Summary. The data show recurring violations of both the state and federal $\mathrm{O}_{3}$ standards and occasional violations of the federal $\mathrm{PM}_{2.5}$ standard. The $\mathrm{CO}, \mathrm{SO}_{2}, \mathrm{NO}_{2}$, and $\mathrm{PM}_{10}$ standards have not been violated in the last five years.

Table 3 Ambient Air Quality Monitoring Summary

| Pollutant/Standard | Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2011 | 2012 | 2013 | 2014 | 2015 |
| Ozone ( $\left.\mathrm{O}_{3}\right)^{1}$ |  |  |  |  |  |
| State 1-Hour $\geq 0.09 \mathrm{ppm}$ (days exceed threshold) <br> State 8 -hour $\geq 0.07 \mathrm{ppm}$ (days exceed threshold) <br> Federal 8 -Hour $>0.075 \mathrm{ppm}$ (days exceed threshold) <br> Max. 1-Hour Conc. (ppm) <br> Max. 8-Hour Conc. (ppm) | $\begin{gathered} 1 \\ 27 \\ 14 \\ 0.105 \\ 0.089 \end{gathered}$ | $\begin{gathered} 1 \\ 21 \\ 4 \\ 0.104 \\ 0.083 \end{gathered}$ | $\begin{gathered} 0 \\ 12 \\ 3 \\ 0.093 \\ 0.079 \end{gathered}$ | $\begin{gathered} 1 \\ 14 \\ 4 \\ 0.119 \\ 0.100 \end{gathered}$ | $\begin{gathered} \hline 1 \\ 23 \\ 6 \\ 0.100 \\ 0.087 \end{gathered}$ |
| Carbon Monoxide (CO) ${ }^{2}$ |  |  |  |  |  |
| State 8 -Hour > 9.0 ppm (days exceed threshold) Federal 8 -Hour $\geq 9.0 \mathrm{ppm}$ (days exceed threshold) Max. 8-Hour Conc. (ppm) | $\begin{gathered} 0 \\ 0 \\ 0.67 \end{gathered}$ | $\begin{gathered} 0 \\ 0 \\ 0.52 \end{gathered}$ | 0 | * | * |
| Nitrogen Dioxide ( $\left.\mathrm{NO}_{2}\right)^{2}$ |  |  |  |  |  |
| State 1 -Hour $\geq 0.18 \mathrm{ppm}$ (days exceed threshold) <br> Federal 1-Hour $\geq 0.100 \mathrm{ppm}$ (days exceed threshold) Max. 1-Hour Conc. (ppb) | $\begin{gathered} 0 \\ 0 \\ 50 \end{gathered}$ | $\begin{gathered} 0 \\ 0 \\ 48 \end{gathered}$ | $\begin{gathered} 0 \\ 0 \\ 46 \end{gathered}$ | $\begin{gathered} 0 \\ 0 \\ 45 \end{gathered}$ | $\begin{gathered} 0 \\ 0 \\ 47 \end{gathered}$ |
| Sulfur Dioxide ( $\left.\mathrm{SO}_{2}\right)^{4}$ |  |  |  |  |  |
| State 24 -Hour $\geq 0.04 \mathrm{ppm}$ (days exceed threshold) <br> Federal 24 -Hour $\geq 0.14 \mathrm{ppm}$ (days exceed threshold) Max 24-Hour Conc. (ppm) | $\begin{gathered} 0 \\ 0 \\ 0.001 \end{gathered}$ | $\begin{gathered} 0 \\ 0 \\ 0.001 \end{gathered}$ | * | * | * |
| Coarse Particulates ( $\left.\mathrm{PM}_{10}\right)^{2}$ |  |  |  |  |  |
| State 24-Hour $>50 \mu \mathrm{~g} / \mathrm{m}^{3}$ (days exceed threshold) Federal 24-Hour > $150 \mu \mathrm{~g} / \mathrm{m}^{3}$ (days exceed threshold) Max. 24-Hour Conc. ( $\mu \mathrm{g} / \mathrm{m}^{3}$ ) | $\begin{gathered} 0 \\ * \\ 99.8 \end{gathered}$ | $\begin{gathered} 0 \\ * \\ 65.5 \\ \hline \end{gathered}$ | $\begin{gathered} 0 \\ * \\ 112.3 \end{gathered}$ | $\begin{gathered} \hline 0 \\ * \\ 86.8 \end{gathered}$ | $\begin{gathered} 0 \\ * \\ \text { * } \\ 90.7 \end{gathered}$ |
| Fine Particulates ( $\left.\mathrm{PM}_{2.5}\right)^{3}$ |  |  |  |  |  |
| Federal 24-Hour > $35 \mu \mathrm{~g} / \mathrm{m}^{3}$ (days exceed threshold) Max. 24-Hour Conc. $\left(\mu \mathrm{g} / \mathrm{m}^{3}\right)$ | $\begin{gathered} 2 \\ 51.6 \end{gathered}$ | $\begin{gathered} 0 \\ 30.2 \end{gathered}$ | $\begin{gathered} 1 \\ 53.7 \end{gathered}$ | $\begin{gathered} 0 \\ 30.9 \end{gathered}$ |  |

Source: CARB 2016b.
ppm: parts per million; parts per billion, $\mu \mathrm{g} / \mathrm{m}^{3}$ : micrograms per cubic meter
Notes: * Data not available.
${ }^{1}$ Data obtained from the Winchester-33700 Borel Road Monitoring Station.
${ }^{2}$ Data obtained from the Lake Elsinore-W Flint Street Monitoring Station.
${ }^{3}$ Data obtained from the Riverside-Magnolia Monitoring Station.
${ }^{4}$ Data obtained from the Riverside-Rubidoux Monitoring Station.

## Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory
functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

## Methodology

Projected construction-related air pollutant emissions are calculated using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2, distributed by the California Air Pollutant Control Officers Association (CAPCOA). CalEEMod compiles an emissions inventory of construction(fugitive dust, off-gas emissions, onroad emissions, and offroad emissions), area sources, indirect emissions from energy use, mobile sources, indirect emissions from waste disposal (annual only), and indirect emissions from water/wastewater (annual only) use. The calculated emissions of the project are compared to thresholds of significance for individual projects using the SCAQMD's CEQA Air Quality Analysis Guidance Handbook.

## Thresholds of Significance

The analysis of the Proposed Project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's CEQA Air Quality Handbook and the significance thresholds on SCAQMD's website. ${ }^{6}$ CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation. In addition to the daily thresholds listed above, projects are also subject to the AAQS. These are addressed though an analysis of localized CO impacts and localized significance thresholds (LSTs).

## REGIONAL SIGNIFICANCE THRESHOLDS

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 4, SCAQMD Significance Thresholds, lists SCAQMD's regional significance thresholds that are applicable for all projects uniformly regardless of size or scope. There is growing evidence that although ultrafine particulates contribute a very small portion of the overall atmospheric mass concentration, they represent a greater proportion of the health risk from PM. However, the EPA or CARB have not yet adopted AAQS to regulate ultrafine particulates; therefore, SCAQMD has not developed thresholds for them.

[^24]Table $4 \quad$ SCAQMD Significance Thresholds

| Air Pollutant | Construction Phase | Operational Phase |
| :--- | :---: | :---: |
| Reactive Organic Gases (ROGs)/ Volatile <br> Organic Compounds (VOCs) | $75 \mathrm{lbs} / \mathrm{day}$ | $55 \mathrm{lbs} / \mathrm{day}$ |
| Nitrogen Oxides (NOx) | $100 \mathrm{lbs} / \mathrm{day}$ | $55 \mathrm{lbs} / \mathrm{day}$ |
| Carbon Monoxide (CO) | $550 \mathrm{lbs} / \mathrm{day}$ | $550 \mathrm{lbs} / \mathrm{day}$ |
| Sulfur Oxides (SOx) | $150 \mathrm{lbs} / \mathrm{day}$ | $150 \mathrm{lbs} / \mathrm{day}$ |
| Particulates (PM 10 ) | $150 \mathrm{lbs} / \mathrm{day}$ | $150 \mathrm{lbs} / \mathrm{day}$ |
| Particulates (PM 2.5 ) | $55 \mathrm{lbs} / \mathrm{day}$ | $55 \mathrm{lbs} / \mathrm{day}$ |
| Source: SCAQMD 2015c. |  |  |

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems:

- Linked to increased cancer risk $\left(\mathrm{PM}_{2.5}, \mathrm{TACs}\right)$
- Aggravates respiratory disease $\left(\mathrm{O}_{3}, \mathrm{PM}_{2.5}\right)$
- Increases bronchitis $\left(\mathrm{O}_{3}, \mathrm{PM}_{2.5}\right)$
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath $\left(\mathrm{O}_{3}\right)$
- Reduces resistance to infections and increases fatigue $\left(\mathrm{O}_{3}\right)$
- Reduces lung growth in children $\left(\mathrm{PM}_{2.5}\right)$
- Contributes to heart disease and heart attacks $\left(\mathrm{PM}_{2.5}\right)$
- Contributes to premature death $\left(\mathrm{O}_{3}, \mathrm{PM}_{2.5}\right)$
- Linked to lower birth weight in newborns ( $\mathrm{PM}_{2.5}$ ) (SCAQMD 2015d)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of $\mathrm{PM}_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists responsible for a landmark children's health study found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (SCAQMD 2015e).

Mass emissions in Table 4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. Therefore, regional emissions from a single project do not single-handedly trigger a regional health impact. SCAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SoCAB. To achieve the health-based standards established by the EPA, SCAQMD prepares an AQMP that details regional programs to attain the AAQS.

## CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm . Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. Typically, for an intersection to exhibit a significant CO concentration, it would operate at level of service (LOS) E or worse without improvements (Caltrans 1997). However, at the time of the 1993 Handbook, the SoCAB was designated nonattainment under the California AAQS and National AAQS for CO.

With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined. In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hot spot analysis conducted for the attainment by SCAQMD for busiest intersections in Los Angeles during the peak morning and afternoon periods plan did not predict a violation of CO standards. ${ }^{7}$ As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour-or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2011).

## LOCALIZED SIGNIFICANCE THRESHOLDS

SCAQMD developed LSTs for emissions of $\mathrm{NO}_{2}, \mathrm{CO}, \mathrm{PM}_{10}$, and $\mathrm{PM}_{2.5}$ generated at the project site (offsite mobile-source emissions are not included in the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS and are shown in Table 5, SCAQMD Localized Significance Thresholds.

[^25]Table 5 SCAQMD Localized Significance Thresholds

| Air Pollutant (Relevant AAQS) | Concentration |
| :--- | :---: |
| 1-Hour CO Standard (CAAQS) | 20 ppm |
| 8-Hour CO Standard (CAAQS) | 9.0 ppm |
| 1-Hour $\mathrm{NO}_{2}$ Standard (CAAQS) | 0.18 ppm |
| Annual $\mathrm{NO}_{2}$ Standard (CAAQS) | 0.03 ppm |
| 24-Hour $\mathrm{PM}_{10}$ Standard - Construction (SCAQMD) | $10.4 \mu \mathrm{~g} / \mathrm{m}^{3}$ |
| 24-Hour $\mathrm{PM}_{2.5}$ Standard - Construction (SCAQMD) |  |
| 24-Hour $\mathrm{PM}_{10}$ Standard - Operation (SCAQMD) | $10.4 \mu \mathrm{~g} / \mathrm{m}^{3}$ |
| 24-Hour $\mathrm{PM}_{2.5}$ Standard - Operation (SCAQMD) |  |

Source: SCAQMD 2015 c.
ppm - parts per million; $\mu \mathrm{g} / \mathrm{m}^{3}$ - micrograms per cubic meter
1 Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for $\mathrm{PM}_{10}$ and $\mathrm{PM}_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, SCAQMD developed screening-level LSTs to back-calculate the mass amount (lbs. per day) of emissions generated onsite that would trigger the levels shown in Table 5 for projects under 5-acres. These "screening-level" LSTs tables are the localized significance thresholds for all projects of five acres and less; however, it can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required to compare concentrations of air pollutants generated by the project to the localized concentrations shown in Table 5.

LST analysis for construction is applicable to all projects of five acres and less; however, it can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required. In accordance with SCAQMD's LST methodology, construction LSTs are based on the acreage disturbed per day based on equipment use. The construction LSTs for the project site in SRA 26 are shown in Table 6, SCAQMD Screening-Level Construction Localized Significance Thresholds, for receptors within 150 feet (46 meters).

Table 6 SCAQMD Construction Localized Significance Thresholds

| Acreage Disturbed | Threshold (lbs/day) ${ }^{1}$ |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Nitrogen <br> Oxides $\left(\mathbf{N O}_{\mathrm{x}}\right)$ | Carbon <br> Monoxide <br> (CO) | Coarse <br> Particulates <br> $\left(\mathbf{P M}_{10}\right)$ | Fine <br> Particulates <br> $\left(\mathrm{PM}_{2.5}\right)$ |
| S1.00 Acre Disturbed Per Day | 196 | 1,044 | 10.63 | 3.83 |
| 1.31 Acres Disturbed Per Day | 218 | 1,184 | 12.86 | 4.40 |
| 1.81 Acres Disturbed Per Day | 254 | 1,407 | 16.43 | 5.31 |
| 3.50 Acres Disturbed Per Day | 338 | 2,038 | 26.58 | 7.66 |
| 4.00 Acres Disturbed Per Day | 362 | 2,221 | 29.51 | 8.32 |
| Source: SCAQMD 2008a, Based on receptors in SRA 26. <br> 1 LSTs are based on receptors within 150 feet (46 meters). |  |  |  |  |

Because the project is not an industrial project that has the potential to emit substantial sources of stationary emissions, operational LSTs are not an air quality impact of concern associated with the project. The operational LSTs in SRA 26 are shown in Table 7, SCAQMD Screening-Level Operational Localized Significance Thresholds.

Table 7 SCAQMD Screening-Level Operational Localized Significance Thresholds

| Air Pollutant | Threshold (lbs/day) |
| :--- | :---: |
|  | Operational ${ }^{1}$ |
| Nitrogen Oxides (NOx) | 408 |
| Carbon Monoxide (CO) | 2,586 |
| Coarse Particulates (PM10) | 8.97 |
| Fine Particulates (PM 2.5 ) | 2.83 |

Source: SCAQMD 2008a, Based on receptors in SRA 26.
1 LSTs are based on receptors within 150 feet ( 46 meters) for a project site size of five acre.

## HEALTH RISK THRESHOLDS

Whenever a project would require use of chemical compounds that have been identified in SCAQMD Rule 1401, placed on CARB's air toxics list pursuant to AB 1807, or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the SCAQMD. Table 8, Toxic Air Contaminants Incremental Risk Thresholds, lists the TAC incremental risk thresholds for operation of a project. The purpose of this environmental evaluation is to identify the significant effects of the Proposed Project on the environment, not the significant effects of the environment on the Proposed Project. (California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.4th 369 (Case No. S213478)). CEQA does not require CEQA-level environmental document to analyze the environmental effects of attracting development and people to an area. However, the environmental document must analyze the impacts of environmental hazards on future users, when a proposed project exacerbates an existing environmental hazard or condition. Residential, commercial, and office uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards, so these thresholds are typically applied to new industrial projects.

Table 8 SCAQMD Toxic Air Contaminants Incremental Risk Thresholds

| Maximum Incremental Cancer Risk | $\geq 10$ in 1 million |
| :--- | :---: |
| Hazard Index (project increment) | $\geq 1.0$ |
| Cancer Burden in areas $\geq 1$ in 1 million | $>0.5$ excess cancer cases |
| Source: SCAQMD 2015c. |  |

## GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG-water vapor, ${ }^{8}$ carbon $\left(\mathrm{CO}_{2}\right)$, methane $\left(\mathrm{CH}_{4}\right)$, and ozone $\left(\mathrm{O}_{3}\right)$-that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide $\left(\mathrm{N}_{2} \mathrm{O}\right)$, sulfur hexafluoride $\left(\mathrm{SF}_{6}\right)$, hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001). ${ }^{9}$ The major GHG are briefly described below.

- Carbon dioxide ( $\mathbf{C O}_{2}$ ) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- Methane $\left(\mathbf{C H}_{4}\right)$ is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- Nitrous oxide $\left(\mathbf{N}_{2} \mathbf{O}\right)$ is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- Fluorinated gases are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.
- Chlorofluorocarbons (CFCs) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-

[^26]depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

- Perfluorocarbons (PFCs) are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane $\left[\mathrm{CF}_{4}\right]$ and perfluoroethane $\left[\mathrm{C}_{2} \mathrm{~F}_{6}\right]$ ) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.
- Sulfur Hexafluoride (SF6) is a colorless gas soluble in alcohol and ether, slightly soluble in water. $\mathrm{SF}_{6}$ is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.
- Hydrochlorofluorocarbons (HCFCs) contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
- Hydrofluorocarbons (HFCs) contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (IPCC 2001; USEPA 2015b).

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 9, GHG Emissions and Their Relative Global Warming Potential Compared to CO ${ }_{2}$. The GWP is used to convert GHGs to $\mathrm{CO}_{2}$-equivalence $\left(\mathrm{CO}_{2} \mathrm{e}\right)$ to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Second Assessment Report GWP values for $\mathrm{CH}_{4}$, a project that generates 10 metric tons (MT) of $\mathrm{CH}_{4}$ would be equivalent to 210 MT of $\mathrm{CO}_{2} \cdot{ }^{10}$

[^27]Table 9 GHG Emissions and Their Relative Global Warming Potential Compared to $\mathrm{CO}_{2}$

| GHGs | Second Assessment Report Atmospheric Lifetime (Years) | Fourth Assessment Report Atmospheric Lifetime (Years) | Second Assessment Report Global Warming Potential Relative to $\mathrm{CO}_{2}{ }^{1}$ | Fourth Assessment Report Global Warming Potential Relative to $\mathrm{CO}_{2}{ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: |
| Carbon Dioxide ( $\mathrm{CO}_{2}$ ) | 50 to 200 | 50 to 200 | 1 | 1 |
| Methane ${ }^{2}\left(\mathrm{CH}_{4}\right)$ | $12( \pm 3)$ | 12 | 21 | 25 |
| Nitrous Oxide ( $\mathrm{N}_{2} \mathrm{O}$ ) | 120 | 114 | 310 | 298 |
| Hydrofluorocarbons: |  |  |  |  |
| HFC-23 | 264 | 270 | 11,700 | 14,800 |
| HFC-32 | 5.6 | 4.9 | 650 | 675 |
| HFC-125 | 32.6 | 29 | 2,800 | 3,500 |
| HFC-134a | 14.6 | 14 | 1,300 | 1,430 |
| HFC-143a | 48.3 | 52 | 3,800 | 4,470 |
| HFC-152a | 1.5 | 1.4 | 140 | 124 |
| HFC-227ea | 36.5 | 34.2 | 2,900 | 3,220 |
| HFC-236fa | 209 | 240 | 6,300 | 9,810 |
| HFC-4310mee | 17.1 | 15.9 | 1,300 | 1,030 |
| Perfluoromethane: $\mathrm{CF}_{4}$ | 50,000 | 50,000 | 6,500 | 7,390 |
| Perfluoroethane: $\mathrm{C}_{2} \mathrm{~F}_{6}$ | 10,000 | 10,000 | 9,200 | 12,200 |
| Perfluorobutane: $\mathrm{C}_{4} \mathrm{~F}_{10}$ | 2,600 | NA | 7,000 | 8,860 |
| Perfluoro-2methylpentane: $\mathrm{C}_{6} \mathrm{~F}_{14}$ | 3,200 | NA | 7,400 | 9,300 |
| Sulfur Hexafluoride ( $\mathrm{SF}_{6}$ ) | 3,200 | NA | 23,900 | 22,800 |

Source: IPCC 1995; IPCC 2007.
Notes: The IPCC has published updated global warming potential (GWP) values in its Fifth Assessment Report (2013) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of $\mathrm{CO}_{2}$ (radiative forcing is the difference of energy from sunlight received by the earth and radiated back into space). However, GWP values identified in the Second Assessment Report are still used by SCAQMD to maintain consistency in GHG emissions modeling. In addition, the 2008 Scoping Plan was based on the GWP values in the Second Assessment Report.
1 Based on 100-year time horizon of the GWP of the air pollutant relative to $\mathrm{CO}_{2}$.
2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of $\mathrm{CO}_{2}$ is not included.

## Regulatory Settings

## REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

The EPA's endangerment finding covers emissions of six key $\mathrm{GHGs}-\mathrm{CO}_{2}, \mathrm{CH}_{4}, \mathrm{~N}_{2} \mathrm{O}$, hydro fluorocarbons, per fluorocarbons, and $\mathrm{SF}_{6}$ - that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world (the first three are applicable to the Proposed Project).

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MT) or more of $\mathrm{CO}_{2}$ per year are required to submit an annual report.

## US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit $25,000 \mathrm{MT}$ or more of $\mathrm{CO}_{2}$ per year are required to submit an annual report.

## Update to Corporate Average Fuel Economy Standards (2010/2012)

The current Corporate Average Fuel Economy (CAFE) standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon $[\mathrm{mpg}]$ by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with state requirements. The federal government issued new standards in 2012 for model years 2017-2025, which will require a fleet average of 54.5 mpg in 2025.

## EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the CAA, the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to the President's 2013 Climate Action Plan, the EPA will be directed to also develop regulations for existing stationary sources.

## REGULATION OF GHG EMISSIONS ON A STATE LEVEL

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-3-05, Executive Order B-30-15, Assembly Bill 32, Senate Bill 32, and Senate Bill 375.

## Executive Order S-3-05

Executive Order S-3-05, signed June 1, 2005. Executive Order S-3-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050


## Assembly Bill 32

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Assembly Bill 32 (AB 32), the Global Warming Solutions Act. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-3-05.

## CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. AB 32 directed CARB to adopt discrete early action measures to reduce GHG emissions and outline additional reduction measures to meet the 2020 target. In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than $25,000 \mathrm{MT}$ of $\mathrm{CO}_{2}$ e per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be approximately $596 \mathrm{MMTCO}_{2} \mathrm{e}$ in 2020. In December 2007, CARB approved a 2020 emissions limit of $427 \mathrm{MMTCO}_{2} \mathrm{e}$ ( 471 million tons) for the state. The 2020 target requires a total emissions reduction of $169 \mathrm{MMTCO}_{2} \mathrm{e}$, 28.5 percent from the projected emissions of the business-as-usual (BAU) scenario for the year 2020 (i.e., 28.5 percent of $596 \mathrm{MMTCO}_{2} \mathrm{e}$ ) (CARB 2008). ${ }^{11}$

Key elements of CARB's GHG reduction plan that may be applicable to the project include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards (adopted and cycle updates in progress).
- Achieving a mix of 33 percent for energy generation from renewable sources (anticipated by 2020).
- A California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system for large stationary sources (adopted 2011). The cap-and-trade program was expanded in 2013 to include the electricity sector, and then again in 2015 to include fuels (including natural gas and gasoline).
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted).

[^28]- Adopting and implementing measures pursuant to state laws and policies, including California's clean car standards (amendments to the Pavley Standards adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (LCFS) (adopted 2009).
- Creating target fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation (in progress).

Table 10, Scoping Plan Greenbouse Gas Reduction Measures and Reductions Toward 2020 Target, shows the proposed reductions from regulations and programs outlined in the 2008 Scoping Plan. In recognition of the critical role that local governments play in the successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today's levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. ${ }^{12}$ Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer VMT (CARB 2008).

[^29]Table 10 Scoping Plan Greenhouse Gas Reduction Measures and Reductions Toward 2020 Target

| Recommended Reduction Measures | Reductions Counted toward 2020 Target of 169 MMT CO 2 e | Percentage of Statewide 2020 Target |
| :---: | :---: | :---: |
| Cap and Trade Program and Associated Measures |  |  |
| California Light-Duty Vehicle GHG Standards | 31.7 | 19\% |
| Energy Efficiency | 26.3 | 16\% |
| Renewable Portfolio Standard (33 percent by 2020) | 21.3 | 13\% |
| Low Carbon Fuel Standard | 15 | 9\% |
| Regional Transportation-Related GHG Targets ${ }^{1}$ | 5 | 3\% |
| Vehicle Efficiency Measures | 4.5 | 3\% |
| Goods Movement | 3.7 | 2\% |
| Million Solar Roofs | 2.1 | 1\% |
| Medium/Heavy Duty Vehicles | 1.4 | 1\% |
| High Speed Rail | 1.0 | 1\% |
| Industrial Measures | 0.3 | 0\% |
| Additional Reduction Necessary to Achieve Cap | 34.4 | 20\% |
| Total Cap and Trade Program Reductions | 146.7 | 87\% |
| Uncapped Sources/Sectors Measures |  |  |
| High Global Warming Potential Gas Measures | 20.2 | 12\% |
| Sustainable Forests | 5 | 3\% |
| Industrial Measures (for sources not covered under cap and trade program) | 1.1 | 1\% |
| Recycling and Waste (landfill methane capture) | 1 | 1\% |
| Total Uncapped Sources/Sectors Reductions | 27.3 | 16\% |
| Total Reductions Counted toward 2020 Target | 174 | 100\% |
| Other Recommended Measures - Not Counted toward 2020 Target |  |  |
| State Government Operations | 1.0 to 2.0 | 1\% |
| Local Government Operations ${ }^{2}$ | To Be Determined ${ }^{2}$ | NA |
| Green Buildings | 26 | 15\% |
| Recycling and Waste | 9 | 5\% |
| Water Sector Measures | 4.8 | 3\% |
| Methane Capture at Large Dairies | 1 | 1\% |
| Total Other Recommended Measures - Not Counted toward 2020 Target | 42.8 | NA |
| Source: CARB 2008. Note: the percentages in the right-hand column add up to more than 100 percent because the emissions reduction goal is 169 MMTCO $_{2} e$ and the <br> Scoping Plan identifies $174 \mathrm{MMTCO}_{2}$ e of emissions reductions strategies. <br> $\mathrm{MMTCO}_{22}$ : million metric tons of $\mathrm{CO}_{2 \mathrm{e}}$ <br> ${ }^{1}$ Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target. A discussion of the regional targets for the Southern California Region and local land use changes recommended within the Southern California Association of Government's (SCAG) Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS) are included later in this section. <br> ${ }^{2}$ According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 million metric tons of $\mathrm{CO}_{2 \mathrm{e}}$ (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 target. |  |  |

## 2014 (First) Scoping Plan Update

CARB recently completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The final Update to the Scoping Plan was released in May, and CARB adopted it at the May 22, 2014, board hearing. The Update to the Scoping Plan defines CARB's climate change priorities for the next five years and lays the
groundwork to reach post-2020 goals in Executive Orders S-3-05 and B-16-2012. The update includes the latest scientific findings related to climate change and its impacts, including short-lived climate pollutants. The GHG target identified in the 2008 Scoping Plan is based on IPCC's GWPs identified in the Second and Third Assessment Reports (see Table 9). IPCC's Fourth and Fifth Assessment Reports identified more recent GWP values based on the latest available science. CARB recalculated the 1990 GHG emission levels with the updated GWPs in the Fourth Assessment Report, and the 427 MMTCO $_{2} 1990$ emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher, at 431 MMTCO $_{2}$ (CARB 2014).

The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the Update to the Scoping Plan also addresses the state's longer-term GHG goals within a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a mid-term target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with, or exceeds, the trajectory created by statewide goals (CARB 2014).

According to the Update to the Scoping Plan, reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit (CARB 2014).

## Executive Order B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the State and requires state agencies to implement measures to meet the interim 2030 goal of Executive Order B-30-15 as well as the long-term goal for 2050 in Executive Order S-3-05. It also requires the Natural Resources Agency to conduct triennial updates the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in State planning and investment decisions.

## Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

## 2030 Target Scoping Plan

The new Executive Order B-30-15 requires CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. The second Scoping Plan will address the new 2030 interim target to achieve a

40 percent reduction below 1990 levels by 2030. CARB released the 2030 Target Scoping Plan Update Concept Paper in June 2016 that identifies potential scenarios focusing on different emissions sectors with and without the Cap-and-Trade program, which is currently in litigation (CARB 2016c). Under AB 197, CARB is directed to prioritize direct emissions control strategies, which would emphasize implementing direct emissions reductions from large stationary source emitters such as power plants and refineries and also from mobile sources. Release of the second Scoping Plan Update that carries through the potential regulations and programs to achieve the 2040 target is anticipated in 2017.

## Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and $\mathrm{CH}_{4}$. Black carbon is the light-absorbing component of fine particulate matter (PM) produced during incomplete combustion of fuels. SB 1383 requires the state board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. The bill also establishes targets for reducing organic waste in landfill. In April 2016, CARB adopted the Proposed Short-Lived Climate Pollutant Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2016d). In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. SCAQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces particulate emissions from these charbroilers by over 80 percent (CARB 2016d). Additionally, SCAQMD Rule 445, wood-burning devices limits installation of new fireplaces in the SoCAB.

## SB 375 - Regional Transportation Plan (RTP) / Sustainable Communities Strategy (SCS)

In 2008, Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from lightduty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional longrange transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). SB 375 requires CARB to periodically
update the targets, no later than every 8 years. CARB plans to propose updated targets for consideration in 2016, with the intent to make them effective in 2018. Sustainable communities strategies (SCSs) adopted in 2018 would be subject to the updated targets (CARB 2015b).

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in $3 \mathrm{MMTCO}_{2}$ e of reductions by 2020 and $15 \mathrm{MMTCO}_{2} \mathrm{e}$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

CARB is currently in the process of updating the next round of targets and methodology to comply with the requirement for updates every eight years. Considerations for the next round of targets include whether to change the nature or magnitude of the emissions reduction targets for each of the MPOs, and whether the target-setting methodology should account for advances in technologies that reduce emissions. Such changes in methodology would permit cities to account for emissions reductions from advances in cleaner fuels and vehicles and not only from land use and transportation planning strategies.

## SCAG's 2016-2040 RTP/SCS

SB 375 requires the MPOs to prepare a sustainable communities strategy in their regional transportation plan. For the SCAG region, the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted on April 7, 2016 (SCAG 2016) and is an update to the 2012 RTP/SCS. In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

The 2016-2040 RTP/SCS projects that the SCAG region will meet or exceed the passenger per capita targets set in 2010 by CARB. It is projected that VMT per capita in the region for year 2040 would be reduced by 7.4 percent with implementation of the 2016-2040 RTP/SCS compared to a no-plan year 2040 scenario. Under the 2016-2040 RTP/SCS, SCAG anticipates lowering GHG emissions 8 percent below 2005 levels by 2020, 18 percent by 2035, and 21 percent by 2040 . The 18 percent reduction by 2035 over 2005 levels represents a 2 percent increase in reduction compared to the 2012 RTP/SCS projection. Overall, the SCS is meant to provide growth strategies that will achieve the aforementioned regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around High Quality Transit Areas and Livable Corridors, and creating Neighborhood Mobility Areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2016). However, the SCS does not require that local general plans, specific plans, or zoning be consistent with SCS; instead, it provides incentives to governments and developers for consistency.

## Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the CAFE standards under Federal Laws, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 , new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smogforming emissions.

## Executive Order S-1-07

On January 18, 2007, the state set a new low carbon fuel standard (LCFS) for transportation fuels sold within the state. Executive Order S-1-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

## Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directs the number of zero-emission vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020 . The executive order also establishes a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

## Senate Bills 1078, 107, and 350 and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewable portfolio standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. CARB has now approved an even higher goal of 33 percent by 2020. In 2011, the state legislature adopted this higher standard in SBX1-2. Executive Order S-14-08 was signed in November 2008, which expands the state's Renewable Energy Standard to

33 percent renewable power by 2020. Senate Bill 350 (de Leon), signed into law September 2015, establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by $2030 .{ }^{13}$ Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

## SENATE BILL 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

## California Building Standards Code - Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2013 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building Energy Efficiency Standards, which went into effect July 1, 2014. Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

Most recently, the CEC adopted the 2016 Building Energy Efficiency Standards. The 2016 Standards will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. These standards will go into effect on January 1, 2017. Under the 2016 Standards, residential buildings are 28 percent more energy efficient than the 2013 Standards while nonresidential buildings are 5 percent more energy efficient than the 2013 Standards (CEC 2015a).

The 2016 standards will not get us to zero net energy (ZNE). However, they do get us very close to the State's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve ZNE for newly constructed residential buildings throughout California (CEC 2015b).

## California Green Building Standards Code - CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code (Title 24, CCR). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. ${ }^{14}$ The

[^30]mandatory provisions of the California Green Building Code Standards became effective January 1, 2011 and were updated most recently in 2013. The building efficiency standards are enforced through the local building permit process.

## 2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. Though these regulations are now often viewed as "business-as-usual," they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

## Solid Waste Regulations

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, California Public Resources Code $\int$ S 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2013 California Green Building Standards Code also requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October of 2014 Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

## Water Efficiency Regulations

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009-2010 and
therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements ( $20 \times 2020$ Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

## REGULATION OF GHG EMISSIONS ON A COUNTY LEVEL

## County of Riverside Climate Action Plan

The County of Riverside adopted Climate Action Plan (CAP) in December of 2015. The CAP addresses the County's goal to reduce emissions attributable to Riverside County to levels consistent with the target reductions of $A B 32$. The purpose of the CAP is to: 1) create a GHG emissions baseline from which to benchmark GHG reductions; 2) provide a plan that is consistent with and complementary to: the GHG emissions reduction efforts being conducted by the State of California through AB 32 , federal government through the actions of the EPA, and the global community through the Kyoto Protocol; 3) guide the development, enhancement, and implementation of actions that reduce GHG emissions; and 4) provide a policy document with specific implementation measures meant to be considered as part of the planning process for future development projects. The CAP provides a list of specific actions that will reduce GHG emissions, giving the highest priority to actions that provide the greatest reduction in GHG emissions and benefits to the community at the least cost. The CAP also establishes a qualified reduction plan for which future development within Riverside County can tier and thereby streamline the environmental analysis necessary under CEQA.

The CAP's Appendix F indicates that the development review process procedures for evaluating GHG impacts and determining significance for CEQA purposes will be streamlined by: 1) applying an emissions level that is determined to be less than significant for small projects, and 2) utilizing the Screening Tables to mitigate project GHG emissions that exceed the threshold level. A threshold level above 3,000 MTCO ${ }_{2}$ e per year will be used to identify projects that require the use of Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions. Projects that garner at least 100 points from the Screening Tables will be consistent with the reduction quantities anticipated in the County's GHG Technical Report and would not require quantification of project specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions. Those projects that do not garnish 100 points using the Screening Table will need to provide additional analysis to determine the significance of GHG emissions (Riverside County 2015). Development projects are required to conduct a consistency evaluation with the CAP since the CAP represents the County's plan to reduce GHG emissions consistent with the statewide GHG emissions goals of AB 32 .

## Thresholds of Significance

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions. ${ }^{15}$

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency (SCAQMD 2010):

- Tier 1. If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- Tier 2. If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.
- Tier 3. If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD is proposing a screening-level threshold of $3,000 \mathrm{MTCO}_{2} \mathrm{e}$ annually for all land use types or the following land-use-specific thresholds: $1,400 \mathrm{MTCO}_{2} \mathrm{e}$ for commercial projects, $3,500 \mathrm{MTCO}_{2}$ e for residential projects, or $3,000 \mathrm{MTCO}_{2}$ e for mixed-use projects. These bright-line thresholds are based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-

[^31]line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

- Tier 4. If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

The SCAQMD Working Group has identified an efficiency target for projects that exceed the screening threshold of $4.8 \mathrm{MTCO}_{2}$ e per year per service population $\left(\mathrm{MTCO}_{2} \mathrm{e} /\right.$ year/SP) for project-level analyses and 6.6 $\mathrm{MTCO}_{2} \mathrm{e} /$ year/SP for plan level projects (e.g., program-level projects such as general plans) for the year 2020. ${ }^{16}$ The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan. ${ }^{17}$

For the purpose of this project, SCAQMD's project-level thresholds of 3,000 MTCO 2 M and 4.8 $\mathrm{MTCO}_{2} \mathrm{e} /$ year/SP are used. If projects exceed the bright line and per capita efficiency targets, GHG emissions would be considered potentially significant in the absence of mitigation measures.

Life cycle emissions are not included in this analysis because not enough information is available for the proposed project, and therefore life cycle GHG emissions would be speculative. ${ }^{18}$ Black carbon emissions are not included in the GHG analysis because CARB does not include this pollutant in the state's AB 32 inventory and treats this short-lived climate pollutant separately. ${ }^{19}$

[^32]
## BIBLIOGRAPHY

Bay Area Air Quality Management District (BAAQMD). 2011, Revised. California Environmental Quality Act Air Quality Guidelines.

California Air Pollution Control Officers Association (CAPCOA). 2013. California Emissions Estimator Model (CalEEMod). Version 2013.2.2. Prepared by: ENVIRON International Corporation and the California Air Districts.

California Air Resources Board (CARB). 1998, April 22. The Report on Diesel Exhaust. http://www.arb.ca.gov/toxics/dieseltac/de-fnds.htm.
—_ 1999. California Air Resources Board (CARB). Final Staff Report: Update to the Toxic Air Contaminant List.
—__ 2008, October. Climate Change Proposed Scoping Plan, a Framework for Change.
—__. 2010, August. Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.
—_. 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006, http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.
—_. 2015a, December. Area Designations Maps: State and National. http://www.arb.ca.gov/desig/adm/adm.htm.
——_ 2015b, September 15. ARB Process and Schedule for SB 375 Target Update. http://www.arb.ca.gov/cc/sb375/sb375.htm.
—_. 2016a, October 1. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.
———. 2016b. Air Pollution Data Monitoring Cards (2011, 2012, 2013, 2014 and 2015). Accessed August 8, 2016, http://www.arb.ca.gov/adam/topfour/topfour1.php.
——_. 2016c, June 17. State of California, 2030 Target Scoping Plan Update Concept Paper. http://www.arb.ca.gov/cc/scopingplan/document/2030_sp_concept_paper2016.pdf.
—__. 2016d, April. Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/meetings/04112016/proposedstrategy.pdf

California Department of Transportation (Caltrans). 1997, December. Transportation Project-Level Carbon Monoxide Protocol. UCD-ITS-RR-97-21. Prepared by Institute of Transportation Studies, University of California, Davis.

California Energy Commission (CEC). 2015a, June 10. 2016 Building Energy Efficiency Standards, Adoption Hearing Presentation. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents.
___.2015b. 2016 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_ Efficiency_Standards_FAQ.pdf.

Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995.
__. 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press.
__. 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.
Riverside County. 2015, December. County of Riverside Climate Action Plan. http://planning.rctlma.org/Portals/0/genplan/general_plan_2016/climate_action_plan/CAP_1208 15.pdf?ver=2016-04-01-101221-240.

South Coast Air Quality Management District (SCAQMD). 1993. California Environmental Quality Act Air Quality Handbook.
——. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. http://www.aqmd.gov/home/library/documents-support-material/planning-guidance/guidance-document.
——. 2008a, September. Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III). http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iii.
__. 2008a, July. Final Localized Significance Threshold Methodology. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf.
——. 2010, September 28. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting 15. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-mainpresentation.pdf.
__. 2012, May 4. Final 2012 Lead State Implementation Plan: Los Angeles County. http://www3.aqmd.gov/hb/attachments/2011-2015/2012May/2012-May4-030.pdf.
——. 2013, February. Final 2012 Air Quality Management Plan. http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan.
—_ 2015a, October 3. Final Report Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES IV). http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iv.
__. 2015b, February 6. Supplement to 24-hour PM2.5 State Implementation Plan for South Coast Air Basin. http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2015/2015-feb6022.pdf?sfvrsn=2.
—_. 2015c, March (revised). SCAQMD Air Quality Significance Thresholds. http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significancethresholds.pdf?sfvrsn=2.
__. 2015d. Health Effects of Air Pollution. http://www.aqmd.gov/home/library/publicinformation/publications.

2015e, October. "Blueprint for Clean Air: 2016 AQMP White Paper." 2016 AQMP White Papers Web Page. http://www.aqmd.gov/home/about/groups-committees/aqmp-advisory-group/2016-aqmp-white-papers.
—_. 2016a, June. Draft 2016 Air Quality Management Plan. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/DRAFT2016AQMP/draft2016aqmp-full.pdf?sfvrsn=2.

Southern California Association of Governments (SCAG). 2016, April. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

US Environmental Protection Agency (USEPA). 2009, December. EPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity.
http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252.
__ 2015a. Six Common Air Pollutants. http://www3.epa.gov/airquality/urbanair/.
——_. 2015b. Overview of Greenhouse Gases.
http://www3.epa.gov/climatechange/ghgemissions/gases.html.

Western Regional Climate Center (WRCC). 2016. Western U.S. Historical Summaries - Elsinore, California Monitoring Station (Station ID No. 042805). Accessed August 8, 2016.
http://www.wrcc.dri.edu/ summary/Climsmsca.html.

## Appendix

This page intentionally left blank.

## Appendix C1 Habitat Assessment



## Table of Contents

Section Page

1. Introduction ..... 1
2. Methods ..... 1
3. Environmental Setting ..... 3
4. Special Status Species and Habitats ..... 7
5.Burrowing Owl Survey ..... 21
5. MSHCP Consistency Analysis ..... 24
6. Impacts ..... 28
7. References ..... 36

## List of Figures

Figure ..... Page
Figure 1. Topographic map ..... 3
Figure 2. Aerial Photo ..... 4
Figure 3. Soils Map ..... 5
Figure 4. Plant Communities ..... 8
Figure 5.Biological features ..... 18
Figure 6.Burrowing owl survey information. ..... 22
Figure 7.Project Site in relation to MSHCP Criteria Cells and Constrained Linkage 18. ..... 28
Figure 8. Project impact area ..... 29
List of Tables
Table Page
Table 1. Plant Community Areas ..... 7
Table 2. Special Status Plant Species Potentially Occurring on the Project Site ..... 9
Table 3.Plant Species of Special Interest Known to Occurin the Region, but not Anticipated in the Vicinity of the Project Site ..... 14
Table 4. Special Status Animal Species Known From Project Region. ..... 15
Table 5. Weather data for the burrowing owl survey ..... 22
Table 6. MSHCP Review Summary ..... 24
Table 7. Plant Community Impacts ..... 28
Appendices
A. Site photographsB. Plant species observedC. Wildlife species observed

## 1. Introduction

This report describes the biological resources of the proposed Temecula Valley Charter School site and examines the proposed project's consistency with the Riverside County Multi-Species Habitat Conservation Plan. The proposed school site examined consists of two parcels (APNs 476-010-059 and 476-010-013) and a new access road (the Flossie Way Right-Of-Way, ROW) in the Winchester area of unincorporated Riverside County. The areas of the two parcels are 7.40 and 7.10 acres; the Row of the Flossie Way access road covers 1.78 acres, for a total project area of 16.27 acres. These acreages are based on GIS analysis of the parcels, and differ somewhat from parcel acreages in the County website. The street address of the site is 34155 Winchester Road (Highway 79), approximately 630 ft . south of Keller Road. The project site includes an access road along an existing easement for the future development of Flossie Way. This easement is located in the northern area of APN 476-$010-054$ and would comprise approximately 1.78 acres.

Figure 1, Topographic Map, shows the project site location on the Bachelor Mtn. and Winchester 7.5' USGS topographic maps (T6S R2W Section 28). The UTM coordinates for the approximate center of the site are 11S $0491121 \mathrm{mE} \times 3720624 \mathrm{mN}$. Figure 2, Aerial Photo, shows the project site on an aerial photo. The elevation of the site ranges from 1,419 to 1,473 ft. above mean sea level. Site photos are found in Appendix A.

The parcel is within criteria cell 5275 (Southwest Area Plan, French Valley-Lower Sedco Hills subunit) of the western Riverside Multi-Species Habitat Conservation Plan (MSHCP; County of Riverside 2016b). Because the project site is found within a criteria cell, this report includes a habitat assessment for species and sensitive habitats identified by the MSHCP and an MSHCP Consistency Analysis (RCA 2007a, 2007b).

## 2. Methods

## Literature Review

A literature review was used to determine the potential special status species and communities found on the project site and proposed road easement. The review included previous biological surveys conducted in the project vicinity (Caltrans 2007, 2010; Dodson 2015; The Planning Center 2012; and SCE and AECOM 2014).The distribution of special status plant species that may occur on the project site was obtained from the California Natural Diversity Database (CNDDB; CDFW 2016a) RareFind Data Base for the Bachelor Mtn., Winchester, Murrieta, and Romoland Quadrangles and the CNPS online rare plant inventory (CNPS 2016).Collection records of the special status species known from the project region were reviewed (Consortium 2016).Details on phenology and habitats preferences was derived from the MSHCP species accounts (Dudek 2003), published floras and checklists (Baldwin et al. 2012, Munz 1974, Roberts et al. 2004, Roberts et al. 2007), RCA monitoring reports (RCA 2011b), and critical habitat designations (USFWS 2010a, 2010b, 2012) for the federally listed species. The presence of the special status plant species was documented by a voucher collection, photo documentation, and GPS waypoints using a Garmin 60CSX GPS receiver).

Information on the special status wildlife species consisted of a review of the CNDDB Rarefind Database (CDFW 2016a), MSHCP species accounts (Dudek 2003), biological studies in the project region (AMEC 2001a, 2001b; 2007; LSA 2003; PCR 2012b, Principe 2010b), and RCA monitoring reports (RCA 2009, 2012b; RCHCA 1995).

The soils on the site were determined using the Websoils website (NCRS 2016) with further detail obtained from the soil survey for western Riverside County (Knecht 1971).

The MCHCP requirements for the parcels were obtained from the county conservation summary report (County of Riverside 2016b) and from the County GIS website (County of Riverside 2016a). The information from these websites noted that the parcel is located in Criteria Cell \#5275, and information on the County survey and reporting procedures was obtained. This included a review of the requirements for a Habitat Assessment (County of Riverside 2009), MSHCP Consistency Analysis (RCA 2007a and 2007b),HANS reporting procedures (County of Riverside 2006b), and burrowing owl survey protocols (County of Riverside 2005a, 2006a).

## Field Surveys

The initial botanical and sensitive plant community assessments were performed by David Bramlet on August 19, 2016. The agricultural field along SR-79 in the lower elevations of the site had been disked prior to the survey, and little vegetation was present in this area. For the rest of the site, many plants were identified from dried remains and some annual plants may have been overlooked due to the late season conditions. Focused plant surveys were not conducted because it was too late in the season to locate any of the criteria area or narrowendemic plant species required for the review of the proposed Flossie Way access road. Under the MSHCP, focused plant surveys are not required for the two parcels that comprise the main project site.

An updated habitat assessment for Narrow Endemic and Criteria Area Plant Species was conducted in March 2017 at the western end of the Flossie Road ROW. The survey in August of 2016 found this area had been disked and it was not fully possible to determine the potential of the habitat at this locality to support NEP or CAS species at this site. A survey was conducted on March 2, 2017 for approximately five hours on a clear, calm day with temperatures ranging from 59 oF to 71 oF . The site examination was conducted when most plants would be identifiable; the entire area was walked and all plant species observed were recorded in field notes. A general review of the entire project site was also conducted on this date, to determine the changes in floristic composition from the August 2016 site examination.

The second survey was performed on March 10, 2017 for a period of 2.5 hours on a calm, cool day with scattered clouds. The purposed of the site visit was to document the condition of the ponded road ruts within the Flossie Way ROW. The survey area for the NEP and CAS species was also examined on foot to determine if there were any changes in floristic diversity or phenology at this locality.

To document the condition of NEP and CAS species, five reference areas were examined in the western Riverside region during March 2017.These site visits documented the existing condition of various spineflower species, the smooth tarplant, Munz's onion, Coulter's goldfields, the San Jacinto Valley saltbush, and the San Diego ambrosia.

Plant communities were mapped by recording field observations on an aerial photograph. The nomenclature for the communities generally follow Holland (1986, CDFW 2010) with the exception of annual grassland, which was named "non-native grassland" and the addition of the non-vegetative mapping units (e.g. developed). Scientific and common names generally follow the Vascular Plants of western Riverside County: An annotated checklist (Roberts et al. 2004, 2007), although some nomenclature from the Jepson Manual (Baldwin et al. 2012) and other botanical publications (Allen and Roberts 2013) is followed. The names for the special status plant species (narrow endemic, and criteria area species) follow the CNPS online Rare Plant Inventory (CNPS 2016).

The evaluation of the potential presence of vernal pools and other ephemeral wetlands was conducted using aerial photos to supplement the field observations. The historical aerial photos used were dated $6 / 1 / 2002$, 10/20/2003, 1/11/2007, 5/24/2009, and 4/26/2011.

The wildlife survey and burrowing owl habitat assessment study was carried out on November 5, 2016 by Phil Brylski, Ph.D. The project site and surrounding area was surveyed for wildlife generally and for sensitive species such as the burrowing owls and their sign (burrows, pellets, feathers, scat, and litter). The weather during the
survey was mild temperatures ( 78 F to 82 F ), clear skies, and low winds ( $0-3 \mathrm{mph}$ ). Due to the presence of burrows on the site that could potentially be used by burrowing owls, a protocol survey was carried out in accordance with the survey guidelines for the species (County of Riverside 2006a; CDFW 2012, Burrowing Owl Consortium 1993). The methods of the burrowing owl survey are included in Section 5 of this report.

## 3. Environmental Setting

The proposed school site contains agricultural and other vacant lands, as well as two residences. The surrounding areas are rural residential, agricultural, or open land, with off-site rural residences to the north and west of the site. High density suburban residential developments are located approximately $1,500 \mathrm{ft}$. south of the project site.


Figure 1. Topographic map


Figure 2. Aerial Photo

## Topography and Hydrology

The project site contains a knoll in the western part where the residences are located, which slopes gently to the east to a flat area along SR-79 and to the west to the parcel boundary. The level lands on both sides are in agricultural use. There are no channels, erosion rills, or seasonal wetlands on the project site. There are two culverts on Highway 79 that drain storm flows from the property but there are no channels associated with these culverts. Ponding was observed in two road rut features within the Flossie Road ROW (Photo 13) on March 2, 2017, but the ruts were dry by March 8.

The precipitation in the French Valley area in 2015-2016 was approximately 9.3 inches. Although rainfall in 2015-2016 was above the average of 7.21 inches for the region, it was not a good year for many annual plant species. The rainfall for the 2016-2017 water year was approximately 15.9 inches on March 7, 2017. The temperatures during the rainy 2016-2017 season have been cooler, with some unusually high rainfall events (e.g., 1.92 inches of rain fell on February 27, 2017; Weather Currents 2017).

## Soils

The soils on the project site consist of gravelly and sandy loams and one clay soil type. None of the soils are listed on the National Hydric Soils List as hydric. The soils units from the soils report (NRCS 2016) are as follows:

- Lodo gravelly loam (LoF2);
- Garretson very fine sandy loam (GaC);
- Friant fine sandy loam (FwE2); and
- Escondido fine sandy loam (EcC2).

The soils on the Flossie Way access road are as follows:

- Altmont clay (AaF),
- Escondido fine loamy sand (EcD2),
- Friant fine sandy loam (FwE2); and
- Lodo gravelly loam (LoF2).

The distribution of the soil types on the project site are shown in Figure 3, Soils Map.


Figure 3. Soils Map

## Plant Communities

The plant communities found on the parcel include agricultural, disturbed annual grassland, Riversidian sage scrub/grassland ecotone, graded, and developed. Figure 4, Plant Communities shows the distribution of plant communities on the site. Appendix B lists the plant species observed. The following section describes the mapping units.

## Agricultural

The eastern part of the project site is agricultural, which had been disked at the time of the initial survey and later was planted in wheat (Triticum aestivum). The margins of the field contain pockets of a disturbed annual grassland with ripgut brome (Bromus diandrus), wild oat (Avena fatua), red brome (Bromus madritensis ssp . rubens), schismus (Schismus barbatus), and foxtail barley (Hordeum murinum ssp. leporinum).Common forbs included cheeseweed (Malva parviflora), Russian thistle (Salsola tragus), common fiddleneck (Amsinckia intermedia), London rocket (Sisymbrium irio), red maids (Calandrinia menziesii), hare's ear cabbage (Sisymbrium orientale), rattlesnake weed (Euphorbia albomarginata), tocalote (Centaurea melitensis), pygmy sand weed (Crassula connata), white-stemmed filaree (Erodium moschatum), Shepherd's purse (Capsella bursa-pastoris), Persian knotweed (Polygonum argyrocoleon), hairy vetch (Vicia villosa), curly dock (Rumex crispus), and jimson weed (Datura wrightii).

## Disturbed Annual Grassland

A disturbed annual grassland is the dominant plant community in the remaining parts of the project site. Grasses in this community include ripgut brome, foxtail barley, red brome, wild oat, rattail fescue (Festuca myuros), and schismus. Forbs consisted of red maids, white-stemmed filaree, common fiddleneck, miniature lupine (Lupinus bicolor), shiny peppergrass (Lepidium nitidum), bur clover (Medicago polymorpha), longbeaked filaree (Erodium botrys), summer mustard (Hirschfeldia incana), tocalote, London rocket, rattlesnake weed, red-stemmed filaree (Erodium cicutarium), dove weed (Croton setiger), vinegar weed (Trichostema lanceolatum), Russian thistle, paniculate tarplant (Deinandra paniculata), and jimson weed. A few shrubs including common sand aster (Corethrogyne filaginifolia), coastal isocoma (Isocoma menziesii), and interior California buckwheat (Eriogonum fasciculatum var. foliolosum) were uncommonly found in these grasslands.

Several small rocky sites on the project site had open patches dominated by Russian thistle. Other disturbed areas along Highway 79 had a grassland with patches of tocalote, telegraph weed (Heterotheca grandiflora), annual sunflower (Helianthus annuus), schismus, bur clover, Persian knotweed, grab lotus (Acmispon micranthus), common horseweed (Conyza canadensis), long-beaked filaree, summer cypress (Kochia scoparia), prickly lettuce (Lactuca serriola), dove weed, serrate-leaved saltbush (Atriplex suberecta), London rocket, and summer mustard.

The Flossie Road Right of Way (ROW) is a disturbed annual grassland that borders a field of planted cultivated oat (Avena sativa). Much of the ROW is a disturbed annual grassland where annual grasses such as foxtail barley, ripgut brome, red brome and shismus were more common than cultivated oat. Other annual plants found on the ROW include redmaids, black mustard (Brassica nigra), shiny pepper grass, red brome, foxtail barley, Sahara mustard (Brassica tournefortii), stink net (Oncosiphon piluliferum), Shepherd's purse, common fiddleneck, cheeseweed, bur clover, Russian thistle, scarlet pimpernel (Anagallis arvensis), miniature lupine, and pygmy sand weed.

## Riversidian sage scrub-grassland ecotone

A few of the larger patches of interior California buckwheat on the project site were mapped as a Riversidian sage scrub/grassland ecotone. These sites had scattered shrub cover and were generally dominated by annual
grasses and forbs. Other shrub species occasionally found in these ecotonal areas consisted of common sand aster, coastal isocoma, and California sagebrush (Artemisia californica). The sites were characterized by a cover of ripgut brome, wild oat, red brome, common fiddleneck, Russian thistle, tocalote, finger-leaved morning glory (Calystegia macrostegia), summer mustard, and dove weed.

## Graded

The existing access road to the residences was mapped as graded. This unit consists of a hard packed earthen road and other disturbed areas that lack vegetation.

## Developed

The area around the existing residences and garage was mapped as developed, which includes graded areas around the structures, a concrete basketball court, and driveways. This area includes a number of planted ornamental species including Aleppo pines (Pinus halepensis), Shamel ash (Fraxinus uhdei), olive (Olea europea), Silver dollar gum (Eucalyptus polyanthemos), pecan (Carya illinoinensis), and queen palms (Syagrus romanzoffiana).

Table 1 lists the acreages of the plant communities on the project site.

| Table 1. Plant Community Areas |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Plant Community | Area (acres) |  |  |  |
| Agricultural | 7.33 |  |  |  |
| Disturbed annual grassland | 7.23 |  |  |  |
| Riversidian sage scrub/annual grassland ecotone | 0.10 |  |  |  |
| Graded | 0.36 |  |  |  |
| Developed | 1.24 |  |  |  |
|  |  |  |  | $\mathbf{1 6 . 2 7}$ |

## Wildlife

The wildlife observed on the project site is typical for its developed and agricultural land uses. The birds observed on the site include the western meadowlark (Sturnella neglecta), Say's phoebe (Sayornis saya), common raven (Corvus corax), white-crowned sparrow (Zonotrichia leucophrys), and mourning dove (Zenaida macroura). Two mammal species observed included the California ground squirrel (Otospermophilus beecheyi) and Botta pocket gopher (Thomomys bottae). Appendix C lists the wildlife species observed on the site.

## 4. Special Status Species and Habitats

Special status plant species include those plants listed by the state or federal governments as endangered, threatened or rare, species that are candidates for future listing, and species determined by the California Department of Fish and Wildlife (CDFW) to meet the CEQA (Section 15380) criteria as "rare and endangered" even if they have not been officially listed by any agency (CDFW 2016b, c). The list also considers those species noted by the California Native Plant Society (CNPS 2016), by the County of Riverside as "rare or endangered" or of limited distribution and requiring consideration in CEQA or planning studies in the region (e.g., the Western Riverside County MSHCP, County of Riverside 2003a, Dudek 2003), or as species of special concern by local botanists in the region (Roberts et al. 2004, 2007).


Figure 4. Plant Communities

Communities of special interest are considered to be "depleted" habitats of special interest to the CDFW (CDFW 2010), the County of Riverside (County of Riverside 2003a), or potentially regulated by the Corps of Engineers, CDFW, Regional Water Quality Control Board or other agencies.It would also include the criteria areas of the western Riverside MSHCP, which are the potential reserve areas for this habitat conservation plan (County of Riverside 2003a).

## Special Status Plant Species

Table 2 lists the Special Status plant species that have been recorded in the project area (CNDDB 2016a, Consortium 2016) and which potentially occur on the project site. Table 3 lists the plant species known from the project region but not expected to occur on the project site.




Chaparral sand verbena (Abronia villosa var. aurita) is a perennial herb found in areas of fine sand, often on benches of alluvial habitats, but also in openings of scrub or grassland communities. In the project region the chaparral sand verbena has been recorded from the sandy wash areas of Murrieta Creek, Pechanga Creek, and Temescal Canyon. It is also known from the sandy areas of the Domenigoni-Diamond Valleys and the Winchester area. There are no records in the French Valley-Bachelor Mountain area. The chaparral sand verbena is a CRPR 1B. 1 species that is not covered by the MSHCP. This species is not anticipated to occur on the project site due to the lack of fine sandy soils.

Munz's onion (Allium munzii) is found on clay soils from the Temescal Valley, Gavilan Plateau-Estelle Mtn., Santa Ana Mountains, and into the Perris Basin. In the study region this species is known from localities at Bachelor Mountain, the north Domenigoni Hills, near Skunk Hollow and a site on either side of Lindenberger road, and just north of Keller Road. Munz's onion is a federally threatened and a state endangered species and is covered under the MSHCP as a narrow endemic plant species. This onion occurs on deep clay soils and has been well documented in the Paloma Valley, Skunk Hollow, Bachelor Mountain, and the Domenigoni Hills.Other known localities include the Gavilan Hills, Temescal Valley, and Alberhill region. The Munz's onion is not anticipated to occur on the project site, due to the lack of deep, clay soils and the disturbed condition of the clay soil habitat.

San Diego ambrosia (Ambrosia pumila) is a federally listed perennial herb found in annual grasslands on floodplain terraces or the margin of ephemeral wetlands. This ambrosia is found in western Riverside and San Diego Counties, and in western Riverside the known localities are limited to the Skunk Hollow area, an area south of Skunk Hollow, the Nichols Road area, and Temecula Creek. The San Diego ambrosia is listed as federally endangered species, a California Rare Plant Rank 1B. 1 species, and a covered plant species within the MSHCP. The MSHCP includes this species on the additional survey needs and procedures list as a narrow
endemic plant species. In the French Valley region this species is only known from a locality south of Skunk Hollow. This species does not occur on the project site.

Large-leaved filaree (California macrophylla) is found on clay soils mostly in the Temescal Valley-Gavilan Hills region, Vail Lake area, and at scattered sites in the Perris Basin. In the general region this species has been documented from Bachelor Mountain, Skunk Hollow, Vail Lake, Nichols Road area, and the hills between Murrieta and Menifee Valley. The large-leaved filaree is a California Rare Plant Rank 1B. 1 species and a covered species under the MSHCP. The MSHCP includes this species on the additional survey needs and procedures list, as a criteria area plant species. This species is not anticipated to occur on the project site due to the lack of deep clay soils and the disturbed condition of the clay soil habitat.

Intermediate mariposa lily (Calochortus weedii var. intermedius) is a late blooming mariposa lily found in rocky areas of Riversidian sage scrub. In western Riverside County this species has been recorded from the northeastern area of the Santa Ana Mountains (Corona area), Crown Valley, Vail Lake, and in the vicinity of the intersection of Clinton Keith Road and the I-215.The mariposa lily is a California Rare Plant Rank 1B. 2 species and a conditionally covered species under the MSHCP. This mariposa lily is not anticipated to occur on the project site, due to the lack of rocky, Riversidian sage scrub at this locality.

Smooth tarplant (Centromadia pungens ssp. laevis) is broadly distributed in alkali grasslands, alkali wetlands and disturbed alkali soils within the Perris Basin, and Santa Ana River Basin. In the region this tarplant is known from Warm Springs Creek, Murrieta Creek, Lake Elsinore, Auld Valley, Menifee Valley, French-Paloma Valleys, and Temecula. This tarplant is a California Rare Plant Rank 1B. 2 species and a covered species under the MSHCP. The MSHCP includes this species on the additional survey needs list as a criteria area plant species and is on the riparian/riverine/vernal pool plant species list. This species is not anticipated to occur on the project site, due to the lack of moist alkali soils.

Parry's spineflower (Chorizanthe parryi var. parryi) is a small, white-flowered, spineflower found in the openings of chaparral, sage scrub, alluvial fan sage scrub and Juniper woodland. This species is known to occur in Los Angeles, San Bernardino and Riverside Counties, principally in the alluvial fan areas along the San Gabriel and San Bernardino Mountains. In the inland valley area, the species is found in openings of Riversidian sage scrub and chaparral, usually on sandy soils. In the Inland Riverside-San Bernardino area, the species is known to occur from the Gavilan Hills to Banning-Palm Springs and from the base of the San Bernardino Mountains to Vail Lake area. In the study region it has been recorded from Sedco Hills, Murrieta, Menifee, French-Paloma Valleys, west Hemet Hills, Lake Skinner-Crown Valley, N. Domenigoni Hills, the Lakeview Mountains and Gavilan Hills. Parry's spineflower is a California Rare Plant Rank List 1B. 1 species and is a conditionally covered species within the MSHCP. This spineflower is not anticipated to occur on the project site, due to the lack of open, sandy soils in Riversidian sage scrub.

Long-spined spineflower (Chorizanthe polygonoides var. longispina) generally occurs on clay substrate, along with other clay soil species, such as the Palmer's grappling hook. However, it also located on heavy loams in open, dry sage scrub. The long-spined spineflower ranges from the inland valleys of Riverside County to San Diego County and into Baja California. In western Riverside County this species is known to occur in concentrations of clay soils including French-Paloma Valley, Bachelor Mtn.-Lake Skinner region, Bundy Canyon, Murrieta-Temecula region, Santa Rosa Plateau, Temescal Valley-Gavilan Hills, Vail Lake and the Santa Rosa Plateau. The long-spined spineflower is a California Rare Plant Rank List 1B. 2 species and is a covered species under the MSHCP. The long-spined spineflower is not anticipated to occur on the project site, due to the disturbed condition of the clay soil area, lack of typical features of the preferred habitat, e.g. exposed red clay soils, and a lack of plant species typically associated with this spineflower.

Small-flowered morning glory (Convolvulus simulans) is restricted to clay soil areas from Central California and extending into Baja California. Currently most of the recent populations known from Inland Riverside County including Paloma Valley, Murrieta, Skunk Hollow, the Gavilan Hills (Temescal Valley), Temescal Valley, Lake Skinner County Park, Santa Rosa Plateau, and Vail Lake areas. The small-flowered morning glory is a California Rare Plant Rank 4.2 species, and is a covered species under the MSHCP. Eight individual plants were observed in the northwestern part of the Flossie Way ROW.

Paniculate tarplant (Deinandra paniculata) is found in cismontane Riverside, southern Orange and San Diego Counties. This species also extends into northern Baja California. The San Diego tarweed is found in grasslands and Riversidian sage scrub throughout the lower valleys of western Riverside County. In the project region this tarplant has been documented from French Valley, Paloma Valley, Domenigoni-Diamond Valley, Murrieta, Wildomar, Temecula, and other areas within the Perris basin. The paniculate tarplant is a California Rare Plant Rank 4.2 species, and is not a covered species under the MSHCP. This tarplant was documented from the southeastern edge of the property by Caltrans (2007) and was observed on the project site.

Palmer's grappling hook (Harpagonella palmeri) is a widely distributed, small annual species which occurs from Los Angeles County to Baja California. It generally occurs on clay slopes and burns at lower elevations. It is often associated with other clay soil species, especially the small-flowered microseris and the clay bindweed. Currently, populations are known to occur in the French Valley, Paloma Valley, Bachelor Mtn.-Lake Skinner area, Murrieta Hot Springs region, Santa Rosa Plateau, Temescal Valley-Gavilan Hills region, and the Vail Lake region. Palmer's grappling hook is a California Rare Plant Rank 4.2 species, and is a covered species within the MSHCP. This species is not anticipated to occur on the project site due to the disturbed conditions in the clay soil locality, lack of suitable conditions, e.g. open clayey habitat, and a lack of plant species typically associated with the Palmer's grappling hook.

Southern California black walnut (Juglans californica) is a shrub to small tree that occurs only in southern California.The center of distribution for this species appears to be in the Chino-La Puente Hills on the Los Angeles-Orange County border. Walnuts also extend along the base of the San Gabriel mountains in alluvial fan sage scrub in Los Angeles, San Bernardino and Riverside Counties. Since this species was used for disease resistance root stock for horticultural walnuts, it is often difficult to determine the origin of California walnut trees in rural and suburban areas. In western Riverside County this species is known to occur in Riverside, along the Santa Ana River, the Perris Basin, and Jurupa Hills-Reche Canyon area. It has also been documented from the San Gorgonio wash and in Millard Canyon in the Cabazon area. The California walnut is a California Rare Plant Rank 4.2 species, and is a covered species under the MSHCP. The species does not occur on the project site.

Robinson's peppergrass (Lepidium virginicum ssp. robinsonii) is an erect annual with white flowers. Dry openings in rocky coastal sage scrub are the preferred habitat for this peppergrass. This peppergrass species occurs in cismontane region of southern California, including the Channel Islands, south to northern Baja California.In western Riverside County this variety is known from: French Valley, Bachelor Mtn.-Lake Skinner region, Menifee Valley, West Hemet Hills, Domenigoni Hills, Menifee Valley, Temescal Valley-Gavilan Hills region, Box Springs Mtns., Corona, and Vail Lake region. Robinson's peppergrass is a California Rare Plant Rank 4.3 species and is not a covered species under the MSHCP. This species would not be anticipated to occur on the project site, due to the lack of sandy soils within Riversidian sage scrub.

Small-flowered microseris (Microseris douglasii ssp. platycarpha) is restricted to clay soils and has a limited distribution in southern California. In the region this species is known from French-Paloma Valley, Lake Skinner (Bachelor Mtn.), Gavilan Hills (Temescal Canyon), Lake Elsinore region (Alberhill), Santa Rosa Plateau, Big Oak Mountain, and Vail Lake. This microseris species is a California Rare Plant Rank 4.2 species and is a conditionally covered species under the MSHCP. This species is not anticipated to occur on the project site, due
to the disturbed conditions in the clay soil locality, lack of suitable conditions, e.g. open clayey habitat, and a lack of plant species typically associated with this microseris species.

Golden-rayed pentachaeta (Pentachaeta aurea) is a small yellow flowered annual that is restricted to southern California, extending into Baja California. This early blooming annual is found in openings of coastal sage scrub, or grasslands and extends into mid-elevational chaparral and lower montane coniferous forest.In Riverside County this species has been recorded from Temecula, 7 miles east of Temecula along DePortola Road, Idlyllwild, Tahquitz meadow, Thomas Mountain, Garner Valley and Whitewater. This pentachaeta is a California Rare Plant Rank 4.2 species and is not a covered species under the MSHCP. This species would not be anticipated to occur on the project site, due to the lack of suitable habitat, current levels of disturbance, and a lack of documentation of the occurrence of this species in the French Valley area.



## Rare Plant Survey Results

The initial survey found approximately 138 paniculate tarplant in the disturbed annual grasslands on the project site and in the Flossie Way access road. The locations of the paniculate tarplant on the project site are shown in Figure 5, Biological Features. The March 2017 field survey found eight small-flowered morning glory plants in the northwestern part of the Flossie Way ROW. No other special status plant species were observed or would be anticipated to occur on the project site and access road.

## Special Status Wildlife Species

Special status wildlife are species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes and those species recognized by local and regional resource agencies as sensitive. Table 4 lists the animal special status species that have the potential to occur in the project area.

| Table 4. Special Status Animal Species Known From Project Region |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Species Name | Status* $^{*}$ | Habitat Preference | MSHCP | Potential to Occur <br> on Project Site |
| Invertebrates | Riverside fairy shrimp | FE | Restricted to a few vernal pools in | Covered |


| Table 4. Special Status Animal Species Known From Project Region |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Species Name | Status* | Habitat Preference | MSHCP | $\begin{array}{l}\text { Potential to Occur } \\ \text { on Project Site }\end{array}$ |
| $\begin{array}{l}\text { Streptocephalus } \\ \text { woottoni }\end{array}$ |  | $\begin{array}{l}\text { southwestern Riverside, Orange, } \\ \text { and San Diego counties. }\end{array}$ | $\begin{array}{l}\text { on the main project } \\ \text { site. Two road ruts } \\ \text { located in the Flossie } \\ \text { Way ROW were } \\ \text { inundated for 8 days } \\ \text { in March 2017, }\end{array}$ |  |
| which are not |  |  |  |  |
| considered sufficient |  |  |  |  |
| for reproduction to |  |  |  |  |
| occur. |  |  |  |  |\(\left.\left|\begin{array}{l}Same as for <br>

Riverside fairy <br>
shrimp\end{array}\right| $$
\begin{array}{l}\text { No potential due to } \\
\text { lack of suitable } \\
\text { habitat. }\end{array}
$$\right\}\)

| Table 4. Special Status Animal Species Known From Project Region |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Species Name | Status* | Habitat Preference | MSHCP | Potential to Occur on Project Site |
|  | only) |  |  | site, but no nests observed in ornamental trees on the site. |
| Southern California rufous-crowned sparrow Aimophila ruficeps canescens | CSC | Occurs in sparsely vegetated scrubland on hillsides and canyons, preferring coastal sage scrub dominated by California sagebrush (Artemisia californica) and grassy successional growth. | Covered | Sparse shrubs on project site provide low potential for nesting. |
| Bell's sage sparrow Artemisiospiza belli belli | CSC | Occurs in coastal sage scrub and chaparral, preferably semi-open with shrubs $1-2 \mathrm{~m}$ high. | Covered | No potential to occur on project site. |
| Burrowing owl Athene cunicularia | CSC | Open grassland, fallow fields, sparsely vegetated desert scrub, and edges of disturbed lands, where soil is friable for nesting burrows. | Covered | Suitable habitat occurs onsite. California ground squirrel burrows occur on site, but no burrowing owls or their sign observed. |
| California horned lark Eremophila alpestris actia | CSC | Occurs in a variety of open habitats, and in southern California breeds mainly in open fields, grasslands, and rangelands. | Covered | Low potential for nesting onsite due to discing of lowland grasslands. |
| Loggerhead shrike Lanius ludovicianus | CSC (nesting) | Occurs in grassland, open sage scrub, chaparral, and desert scrub. Species apparently has declined dramatically in coastal southern California in recent years. | Covered | Moderate potential for nesting in ornamental trees on project site, but nests not observed. |
| Coastal California gnatcatcher Polioptila californica californica | $\begin{gathered} \hline \text { FT } \\ \text { CSC } \end{gathered}$ | Occurs primarily in coastal sage scrub habitat, but also use chaparral, grassland, and riparian habitats where they occur in proximity to sage scrub. | Covered | No potential due to absence of suitable habitat. The coastal sage scrub habitat on project site is sparse and degraded. |
| Mammals |  |  |  |  |
| San Diego black-tailed jackrabbit <br> Lepus californicus bennetti | CSC | Occurs in a variety of habitats, including sage scrubs, chaparral, agricultural lands and other disturbed habitats, but prefers open grassland. | Covered | Moderate potential to occur onsite, but not observed during field survey. |
| Los Angeles pocket mouse <br> Perognathus <br> longimembris <br> brevinasus | CSC | Inhabits coastal sage scrub and alluvial fan sage scrub habitats. | Covered | Low potential to occur onsite due to disturbed habitat conditions. |
| Northwestern San Diego pocket mouse Chaetodipus fallax fallax | CSC | Occurs mainly in sage scrub, chaparral, and grassland habitats. | Covered | High potential to occur onsite. |
| Stephen's kangaroo rat | $\begin{aligned} & \hline \mathrm{FE} \\ & \mathrm{ST} \\ & \hline \end{aligned}$ | Occurs in open grassland and sparse coastal sage scrub habitats on | Covered by SKR HCP | No suitable habitat onsite. |


| Table 4. Special Status Animal Species Known From Project Region |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Species Name | Status* | Habitat Preference | MSHCP | Potential to Occur on Project Site |
| Dipodomys stephensi |  | friable well-drained soils. |  |  |
| San Diego desert woodrat Neotoma bryanti intermedia | CSC | Occurs in scrub and desert habitats, usually in association with rock outcroppings, boulders, cacti, or areas of dense undergrowth. | Covered | Low potential to occur onsite due to sparse shrub and rock cover. |
| Southern grasshopper mouse <br> Onychomys torridus ramona | CSC | Occurs in flat, sandy, valley floor habitats, in range of scrub and grassland habitats. | Covered | Low potential to occur onsite. |
| Federal  <br> FE Federally Endang <br> FT Federally Threate <br> FPT Federally Propose <br> FSC Federal Species of <br> (=BCC)  <br> BLM S Sensitive species | Threatened oncern | State  <br> SE State Endangered <br> ST State Threatened | State Departm  <br> (CDFW)  <br> CSC Ca <br> CFP Ca <br> Species  <br> SA Sp <br>   | of Fish and Wildlife rnia Species of Concern rnia Fully-Protected <br> Animal |



Figure 5.Biological features. (RR, road ruts $1 \& 2$; green circles: paniculate tarplant; red and blue squares: burrows with potential for use by burrowing owls, mapped during November 2016 and March 2017, respectively.)

## Habitat Assessment for Sensitive Wildlife

## Fairy Shrimp

Two listed species of fairy shrimp are known from the project region: the vernal pool fairy shrimp (Branchinecta lynchi), a federally threatened species, and the Riverside fairy shrimp (Streptocephalus woottoni), a federally endangered species. No vernal pools or seasonal wetlands were observed during the 2016 surveys of the site and Flossie Rd ROW. The criteria for seasonal wetlands and other ponded features to be considered potential fairy shrimp habitat was based on the following: (1) the feature is inundated to at least

3 cm ; and (2) the ponded feature should be inundated for a sufficient duration for a listed large branchiopod to complete its lifecycle (USFWS 2015).

During the survey for Narrow Endemic Plant Species on March 2, 2017, ponding was observed in two road rut features within the Flossie Road ROW (Photo 13). Figure 5, Biological Features, shows the locations of these road ruts. Rut \#1 was located 300 ft . from Pourry Road and 35 ft . south of the northern boundary of the parcel, and on March 2, 2017 measured approximately 28 ft . in length, 1 ft . wide, and 6.8 cm deep. Rut \#2 was located 890 ft . east of Pourry Rd. and 40 ft . south of the parcel boundary, and was ponded for 6 ft . in length, 8 inches wide, and 1.3 cm . deep. Only one of the tracks in the second rut was ponded, and the ponding extended for a length of 9 ft ., 9 inches wide, and 3.8 cm deep.

The ponded road ruts were assessed for meeting the inundation criteria for fairy shrimp habitat (USFWS 2015). It is likely that these road ruts filled on February 27, 207 during an unusual rain event (Weather Currents 2017). The initial observations were conducted three days following that event (March 2, 2017). The road ruts within the Flossie Rd ROW were dry within 10 days of when the road ruts were assumed to have ponded (observed on March 10,2017) and eight days following the first survey. These road ruts appeared to have actually dried within eight days, as observed by the wildlife biologist. Therefore, these road ruts would not be considered to have ponded for a sufficient duration to provide suitable habitat for listed fairy shrimp species. No ponding was observed on the two parcels that form the project site. These recent survey guidelines note a seven or ten day period for sampling period, which is assumed to represent the life cycle of some fairy shrimp species (USFWS 2015). However, the Riverside fairy shrimp cysts typically require at least seven to twenty one days to hatch and some eight weeks to mature (USFWS 2012b), while the vernal pool fairy shrimp requires some 18-147 days to mature (USFWS 2007, Caltrans 2007). Other recent studies (AMEC 2012) have used an eight day duration period as the criteria for a suitable period of duration for these seasonal wetlands.

## Quino Checkerspot Butterfly

The Quino checkerspot butterfly occurs in chaparral, cismontane woodland, coastal scrub, and native and introduced grasslands. Larval food plants include dwarf plantain(Plantago erecta), P. patagonica, white snap dragon (Antirrhinum coulterianum), bird'sbeak(Cordylanthus rigidus), and owl's clover (Castilleja exserta). Nectar plants consist mainly of small annuals such as Lasthenia spp., Cryptantha ssp., Gilia ssp., Linanthus dianthiflora, Salvia columbariae, Lotus spp., and Eriodictyon spp. There is a CNDDB record (CDFW 2016) for this species approximately 3.65 miles north/northwest of the project site from 1997. The project site does not contain any of the host plant or nectar sources that are used by this species, and there is no potential for the species to occur there.

## Burrowing Owl

## See Chapter 5.

## Special Status Communities

The project site lacks any special status habitats known to occur in the region.
Riversidian sage scrub. The Riversidian sage scrub-grassland ecotone found on the project site would not be considered a special status community due to the very low shrub cover found in this grassland.

Jurisdictional Waters and Wetlands. The project site does not contain riparian habitat, open drainages, erosional channels or other features that could contain plant species associated with riparian habitats. A blueline channel is found on the property that adjoins the site to the north. The Highway 79 Natural Environmental Study (Caltrans 2004) indicates that this blue-line channel extends into the extreme northeastern tip of the
project site. However, no channel was observed in this area during the 2016 field survey. Currently, it appears that the channel has been filled in on the adjacent property and only overland flows currently occur on the project site.

Ephemeral Wetlands and Vernal Pools. Seasonal wetlands, including vernal pools, are communities that could support special status plant or animal species. No seasonal wetlands were observed on the two parcels that form the project site. Two road rut features were noted to be ponded on March 2, 2017 within the Right of Way (ROW) of Flossie Road (Photo 13). However, these features were only ponded for eight days, and this would not be sufficient for these road ruts to be considered seasonal wetlands or habitat for listed fairy shrimp. In addition, seasonal wetlands were not noted in historical Google Earth aerial photographs reviewed for this study.

## Wildlife Movement Corridors

Wildlife corridors link areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Corridors link different populations of a species and mitigate the effects of habitat fragmentation by 1 ) allowing animals to move between remaining habitats (which allows replenishment of depleted populations and promotes genetic diversity); 2) providing escape routes from fire, predators, and human disturbances that put populations or local species at risk; and 3) serving as travel routes for individuals moving within their home ranges for food, water, mates, and shelter. Wildlife movement activities usually fall into one of three movement categories: dispersal, seasonal migration, or movements related to home range activities. Large open spaces will generally support a diverse wildlife community representing all types of movement. Wildlife movement may range from non-migratory movement of amphibians, reptiles, and some birds on a local level to the many-square-mile home ranges of large mammals moving at a regional level.

The project site is located in a rural residential and agricultural area of French Valley. The immediate neighborhood consists of rural residences and farmland. Extensive high density residential development occurs approximately 1,400 feet to the south. The open areas of Bachelor Mtn and the foothills around Diamond Lake Reservoir occur as close as one mile east of the project site. The project site is largely vacant, with two residences and plant communities dominated by grassland and agricultural lands with no riparian habitats. Winchester Ave (SR-79) borders the project site to the east. There are two culverts beneath Highway 79 but there are no channels associated with these culverts.

Landscape features in rural landscapes that support important wildlife movement functions include aquatic and riparian habitats, and ridgelines, particularly when they are in proximity to a known wildlife movement corridor. None of these features occur on the project site or adjoining areas. The project site is expected to support movement by coyotes and skunks and other local wildlife as a result of normal home range movements, possibly including some wildlife use of the culverts beneath SR-79 along the eastern project border. However, the project site does not contain a wildlife corridor or significantly contribute to wildlife movement.

A regionally important wildlife corridor identified in the MSHCP occurs in the project region: Proposed Constrained Linkage 18 is a narrow strip of riparian habitat along an unnamed drainage that links Paloma Valley (southwest of the project site) and the Bachelor Mountain area (east of the project site across SR-79). This linkage is approximately 1,400 feet south of the project site. The southern part of the linkage is adjoined by high density residential development. The MSHCP planning species for this linkage area are bobcat and Los Angeles pocket mouse.

## 5.Burrowing Owl Survey

The western burrowing owl is a ground-nesting owl that inhabits grassland habitats, often in areas that have been disturbed as a result of agriculture and suburban development. They frequently use burrows excavated by the California ground squirrel (Otospermophilus beecheyi) and use pipes and other natural and non-natural cavities at or below ground level. The entrances to burrows are often indicated by the presence of whitewash and other sign (scat, feathers, and litter). Burrowing owls require open fields with adequate food supply for foraging habitat, low vegetative cover to allow owls to watch for predators, and adequate roosting sites. These owls can often be seen perched or standing by their burrow or hunting insects, rodents, amphibians, or small birds in open fields. Nesting season is from February through August, with most pairs usually fledging 4 or 5 young. After the nesting season, most owls in California remain throughout the winter as year-round residents and owls from others areas augment resident California populations. Burrowing owls are susceptible to predators that can access their nest chamber, such as foxes, coyotes, skunks, raccoons, and snakes, and are also preyed upon by various other raptor species, such as hawks, eagles, and other species of owls.

The CNDDB (CDFW 2016) contains records of nesting burrowing owls in the project vicinity. A habitat assessment for burrowing owls on the project site identified potential burrows that could be used by burrowing owls. Burrows constructed by California ground squirrels were found on the project site. No western burrowing owls were observed or otherwise detected onsite or in adjoining areas during the survey. Based on the occurrence of potentially suitable burrowing owl habitat on the project site, a protocol survey was carried out in March 2017.

## Methods

Literature Review. Prior to the field survey, the literature was reviewed for records of burrowing owl and other sensitive wildlife species on the project site and its vicinity. The literature included the California Natural Diversity Database (CDFW 2016), the Riverside County Multiple Species Habitat Conservation Plan (County of Riverside 2003), and population information on burrowing owls summarized in Center for Biological Diversity (2003).

Field Surveys. The project site and surrounding areas were surveyed for burrowing owls and their sign (burrows, pellets, feathers, scat, and litter) in accordance with the County's burrowing owl survey instructions (County of Riverside 2006). A habitat assessment carried out on November 5, 2016 by Phil Brylski, Ph.D found that all of the habitat on the project site is potentially suitable for burrowing owls. No western burrowing owls were observed or otherwise detected onsite or in adjoining areas during the habitat assessment but eight burrows constructed by California ground squirrels on the project site that could be used by burrowing owls for refuge or nesting were mapped. The foot-surveys included the project site and the adjoining agricultural field to the south of the project site. The fenced residences west and north of the project site, and the agricultural fields east of SR-79 were surveyed by visual inspection using binoculars. Potential burrowing owl burrows were mapped using a GPA (Garmin, 60CSx; accuracy $+/-3$ meters).

A focused burrowing owl survey was carried out on five separate days (March 7-10, March 30, 2017) under mild weather conditions suitable for the survey (Table 5). The site received $100 \%$ survey coverage by systematically walking the project site. The distance between transect center lines was no more than 30 meters ( 100 feet). A buffer area that extended 500 feet around the site borders was also surveyed. Parts of the buffer that are private property were surveyed using binoculars from the project site, its borders, and local roads. These included the rural residential areas that adjoin the project site to the west and north, and the agricultural lands east of SR-79. Figure 6, Burrowing owl survey information, shows the locations of burrows that could be used by burrowing owls, the general locations of the 100 -foot transects, and the perimeter of the 500 -foot buffer area.

## Results

The project site is within the historical range of the burrowing owl. In western Riverside County, burrowing owls are sparsely distributed throughout the region, occurring mainly in open lowland areas (County of Riverside 2003). The California Natural Diversity Database (CDFW 2016) contains several burrowing owl records from the project vicinity in 2006, including multiple pairs at burrows approximately 0.23 miles west and 0.77 miles west of the Flossie Rd ROW.

The weather during the burrowing owl habitat assessment and survey was warm temperatures, clear skies, and low winds.

| Table 5. Weather data for the burrowing owl survey |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Date | Time | Temperature (F) | Wind (mph) | Cloud (\%) |
| $3 / 7$ | $0645-1000$ | $53-69$ | $1-3$ | 15 |
| $3 / 8$ | $1630-1845$ | $82-68$ | 0 | 0 |
| $3 / 9$ | $1700-1900$ | $79-64$ | $1-4$ | 0 |
| $3 / 10$ | $0715-0900$ | $59-75$ | $1-3$ | $25-60 \%$ |
| $3 / 30$ | $1730-1930$ | $74-80$ | $0-1$ | 0 |



Figure 6.Burrowing owl survey information: potentially suitable burrows (blue and red squares), 100-foot transect intervals (green vertical lines), and 500 -foot buffer (yellow line).

The burrows that could be used by burrowing owls were constructed by California ground squirrels (CGS). No potential burrows were observed in rock crevices, debris piles, or agricultural features such as well culverts. The CGS burrows on the site were typically 4-6 inches diameter. In November 2016, when the habitat
assessment was carried out, the burrows were located in sparsely vegetated to barren areas. However, by late 2016 and early 2017, the habitat around the burrows was overgrown by dense non-native annual grasses. Photo 14 shows a typical CGS burrow on the project site during the burrowing owl survey.

The focused survey for burrowing owls did not find any burrowing owls or their sign on the project site or in the buffer area.

## 6. MSHCP CONSISTENCY ANALYSIS

## MSHCP Criteria Cell Issues

The project site and the Flossie Way access road are located in Criteria Cell \#5275 within the French Valley - Lower Sedco Hills subunit of the Southwest Area Plan of the western Riverside MSHCP (County of Riverside 2016b).Biological issues and considerations for this subunit are as follows: (1) conserve a large block of habitat generally east of I-215 and south of Scott Road for narrow endemic species; (2) provide connection to the Southwestern Riverside County Multi Species Reserve, (3) conserve clay soils supporting long-spined spine flower, Munz's onion and Palmer's grappling hook, (4) maintain core and linkage habitat for bobcat, (5) determine presence of potential Core Area for Los Angeles pocket mouse along Warm Springs Creek, (6) maintain core and linkage habitat for Quino checkerspot butterfly, (7) maintain core area for western pond turtle, and (8) maintain core area for Riverside fairy shrimp.

Other goals for this subunit include conserving clay soil areas for narrow endemic plant species that are restricted to these soil types, including the Munz's onion, and habitat for the Quino checkerspot butterfly.

Table 6 lists the checklist information on the project site from the County Conservation Summary Report Generator. The project site is not within with survey requirements for any amphibians, or mammals, but is located within a habitat assessment area for the burrowing owl. The project site is not within an existing or proposed core area.

| Table 6. MSHCP Review Summary |  |
| :--- | :---: |
| Is the project located in Criteria Area or Public/Quasi-Public Land? | Yes |
| Is the project located in Criteria Area Species Survey Area(CASSA)? | Yes* |
| Is the project located in Amphibian Species Survey Area? | No |
| Is the project located in Mammal Species Survey Area? | No |
| Is the project located adjacent to MSHCP Conservation Areas? | No |
| Is the project located in Narrow Endemic Plant Species Survey Area (NEPSA)? | Yes* |
| Are riverine/riparian/wetland habitats or vernal pools present? | No |
| Is the project located in Burrowing Owl Survey Area? | Yes |
| * The main project site (APNs 476-010-059 and 476-010-013) is not within a CASSA or NEPSA. The Flossie Way <br> access road area (part of APN 476-010-054) is within a CASSA and NEPSA. |  |

## Criteria Cell Coverage

The project site is located in the north-central part of Cell \#5275 in an area that is not proposed for conservation. Clay soils are absent from the two parcels where the school would be built, however a small area of clay soils mapped by NRCS (2016) occurs in part of the 1.78 acre easement for the Flossie Way access road. The MSHCP (County of Riverside 2003b) identifies the conservation objectives of Cell \#5275 as follows:
"Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 18. Conservation within this Cell will focus on riparian scrub, woodland and forest habitat and adjacent agricultural land. Areas conserved within this Cell will be connected to riparian scrub, woodland and forest habitat and agricultural land proposed for conservation in Cell \#5376 to the south and to agricultural land proposed for conservation in Cell \#5372 to the east. Conservation within this Cell will range from $10 \%$ to $20 \%$ of the Cell focusing in the southern part of the Cell".

A regionally significant wildlife corridor identified in the MSHCP is Constrained Linkage 18, which is located south of the project site (Figure 7, Project Site in relation to MSHCP Criteria Cells and Constrained Linkage 18). Constrained linkage 18 is a narrow strip of riparian habitat along an unnamed drainage that links Paloma Valley (southwest of the project site) and Bachelor Mountain (east of the project site across SR-79). The linkage is constrained by adjoining agricultural uses, which, along with the narrow width of the riparian area, contribute to a large edge effect. The planning species for this linkage area are bobcat and Los Angeles pocket mouse.

The MSHCP describes the linkage as follows:


#### Abstract

"Proposed Constrained Linkage 18 consists of an unnamed drainage located in the south-central region of the Plan Area. This Constrained Linkage connects Proposed Core 2 (Antelope Valley) to the west with Proposed Extension of Existing Core 7 (Lake Skinner/Diamond Valley Lake Extension). Existing agricultural use constrains the Linkage, and planned land uses surrounding the Linkage are limited nearly entirely to community Development. The Linkage also has a relatively high proportion of land affected by edge (approximately 250 acres of the total 310 acres) and will also be subject to Edge Effects also due to the widening or extension of several facilities including Washington Street, Briggs Road, and SR-79. Despite these issues, the Linkage nonetheless provides Live-In and movement Habitat for species. Guidelines Pertaining to Urban/Wildlands Interface for the management of edge factors such as lighting, urban runoff, toxics, and domestic predators are presented in Section 6.1 of this document. This Linkage likely provides for movement of common mammals such as bobcat. An adequate wildlife underpass or overpass may need to be implemented to insure movement of species in this area and to reduce the chance of mortality from vehicle collision."


## MSHCP Implementation Structure

## Section 6.1.2.Protection of Species Associated with Riparian/Riverine Areas andVernal Pools

The project site does not contain riparian habitat, open drainages, erosional channels or other features that could contain plant species associated with riparian habitats. There is no suitable habitat for riparian birds on the project site. A blue-line channel is found on the adjoining parcel to the north of the project site. The Highway 79 Natural Environmental Study (Caltrans 2004) indicated that this blue-line channel extends into the extreme northeastern corner of the project site. However, no channel was observed in this area during the field survey. It appears that the channel has been filled in on the adjacent property and only overland flows currently occur on the project site.

Ephemeral Wetlands and Vernal Pools. Seasonal wetlands, including vernal pools, are communities that could support special status plant or animal species. No seasonal wetlands were observed on the two parcels that form the project site. Two road rut features were noted to be ponded on March 2, 2017 within the Flossie Road Right of Way (ROW) (Photo 13). However, these features were ponded for only eight days, which would not be sufficient for these road ruts to be considered seasonal wetlands or listed fairy shrimp habitat(USFWS 2015, AMEC 2012).In addition, seasonal wetlands were not noted in historical Google Earth aerial photographs reviewed for this study.

## Section 6.1.3 Compliance: Protection of Narrow Endemic Plant Species

The main project site (APNs 476-010-059 and 476-010-013) is not within a Narrow Endemic Plant Survey Area (NEPSA). However, the proposed Flossie Way access road (APN 476-010-054) is within a NEPSA. The NEPSA species that should be surveyed for are Munz's onion, San Diego ambrosia, many-stemmed dudleya, spreading navarretia, California orcutt grass, and Wright's trichocoronis. Additional botanical
surveys were carried out on March 2 and 10, 2017 to survey for these species and further evaluate the potential for NEP species to occur within the survey area within the Flossie Way ROW. The surveys found that this area contained dense annual grasses and forbs, along with areas of cultivated oats. No suitable habitat for any of the NEP species was observed due to the lack of deep clay soils, and moist silt-clay alkali species, vernal pools, and summer inundated wetlands. The dense annual grass and forb cover within the Flossie Way ROW do not provide suitable habitat for the NEP species.

## Section 6.3.2 Compliance: Additional Survey Needs and Procedures

The project site and the Flossie Way access road areas are within an area required for a habitat assessment for the western burrowing owl, which was carried out, followed by a protocol survey.

The main project site (APNs 476-010-059 and 476-010-013) is not within a Criteria Area Species Survey Area (CASSA). The Flossie Way proposed access route is within a CASSA for the following plant species: Davidson's saltscale, Parish's brittlescale, thread-leaved brodiaea, smooth tarplant, round-leaved filaree,Coulter's Goldfields, and little mousetail. Botanical assessments carried out on March 2 and 10, 2017 further evaluated the potential for the CAS species to occur within the Flossie Way ROW. The surveys found that the area contained dense annual grasses and forbs with areas of cultivated oats. No suitable habitat for any of the CAS species was observed due to the lack of deep clay soils, moist silt-clay alkali soils, vernal pools, and alkali playa wetlands. In addition, the dense annual grass and forb cover found at this locality does not provide suitable habitat for the CAS species.

The Riverside County Parcel Report for APN 476-010-054 states that a previously proposed development for this parcel had completed biological surveys for burrowing owl and a habitat assessment for 13 species, and had been approved under the HANS process. This report was not available online, but should be available from the County Planning Department.

## Burrowing Owl

A habitat assessment for western burrowing owls was carried out on the project site on November 5, 2016. No burrowing owls were observed or otherwise detected onsite (i.e., sign or calls) or in adjoining areas during the survey. Burrows constructed by California ground squirrels were found on the project site that could potentially be used by burrowing owls. Figure 6, Burrowing Owl Survey Information, shows the locations of the ground squirrel burrows. A focused survey for the burrowing owl was carried out from March 7-30, 2017. No burrowing owls or their sign were detected on the project site or in the buffer area.

## MSHCP Consistency for Impacts to Riparian/Riverine/Vernal Pools Habitat

Seasonal wetlands, including vernal pools, are communities that could support special status plant or animal species. No seasonal wetlands ponding was observed on the two parcels that form the project site. Two road rut features were noted to be ponded on March 2, 2017 within the Right of Way (ROW) of Flossie Road. However, these features were only ponded for only eight days, and this would not be sufficient for these road ruts to be considered seasonal wetlands or listed fairy shrimp habitat (AMEC 2012).

In addition, seasonal wetlands were not noted in historical Google Earth aerial photographs reviewed for this study.

## Section 6.1.4.Urban/Wildlands Interface Guidelines

Section 6.1.4 of the MSHCP presents guidelines that reduce indirect impacts to MSHCPconservation areas at the Wildlands/Urban interface. The project site is not in the vicinity of a conservation area and the Urban/Wildlife Interface Guidelines are therefore not applicable.

## Reserve Assembly

The project site is located in the northwestern part of Cell \#5275 in an area that is not proposed for conservation. The project site is not located in a designated core area and is located approximately 1,400 feet north of Constrained Linkage 18.

The objectives of Cell \#5275 and an analysis of the proposed project's impactson these are as follows:

## 1. Contribute to assembly of Proposed Constrained Linkage 18.

Proposed Constrained Linkage 8is located approximately 1,400 feet south of the project site. The land between the project site and the linkage is in agricultural use and is crossed by SR-79. The proposed project would not impact the assembly or wildlife movement function of Constrained Linkage 18.

## 2. Focus on coastal sage scrub (CSS), grassland, riparian scrub, woodland and forest habitat.

The project site contains disturbed annual grassland, tilled agricultural fields, small areas of Riversidian sage scrub/grassland ecotone, and developed uses. The proposed project would impact $41 \%$ of the disturbed annual grassland on the project site, leaving the remaining $59 \%$ in its existing condition. The Riversidian sage scrub-grassland ecotone found on the project site would not be considered a special status community due to the very low shrub cover found in this grassland.
3. Areas conserved within this Cell will be connected to riparian scrub, woodland and forest habitat and agricultural land proposed for conservation in Cell \#5376 to the south and to agricultural land proposed for conservation in Cell \#5279 to the east.

Since adoption of the MSHCP, Cell \#5376 has been largely developed with residential land uses. The project site occurs in the northwestern corner of Cell \#5275, separated from Cell \#5279 by SR-79 and the agricultural lands in the northeastern corner of Cell \#5275. This cell objective is not furthered by the habitats and location of the project site.

## 4. Conservation within this Cell will range from $10 \%-20 \%$ of the Cell focusing in the southern portion of the Cell.

The project site is located in the northwestern part of the Cell. This objective is not relevant to the project site. Nonetheless, the proposed project would develop approximately $63.6 \%$ of the site, leaving the two residences and surrounding habitats ( $36.4 \%$ of the site) undeveloped.


Figure 7.Project Site (red) in relation to MSHCP Criteria Cells and Constrained Linkage 18 (green line).

## 7. IMPACTS

The proposed project would convert part of the existing habitats of the proposed project site and access road to K-8 school land uses. The one-story school buildings totaling about 45,000 square feet of building area and associated school roads, playfields, and other infrastructure would be clustered in the eastern part of the site. Figure 8, Project Impacts, shows the development area of the proposed school on the plant communities map. The developed campus would cover approximately 10.35 acres, approximately $63.6 \%$ of the site. Table 7 summarizes the permanent impacts to the plant communities on the project site. There are no additional temporary impacts.

| Table 7. Plant Community Impacts* |  |  |
| :--- | :---: | :---: |
| Plant Community | Existing | Impact <br> \% of existing in () |
| Agricultural | 7.33 | $7.22(98.4)$ |
| Disturbed annual grassland | 7.23 | $2.9(41.2)$ |
| Riversidian sage scrub/annual <br> grassland ecotone | 0.10 | $.01(7.1)$ |
| Graded | 0.36 | $.15(41.5)$ |
| Developed | 1.24 | $0(0)$ |
| All impacts are permanent. There are no temporary impacts onsite or offsite |  |  |
|  |  |  |



Figure 8. Project impacts (hatched area)

## Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

## Less Than Significant Impact with Mitigation Incorporated.

## Sensitive Plants

No plant species that are listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or the California Department of Fish and Wildlife (CDFW) were observed on the project site or have the potential to occur there. The proposed project would not impact any listed plant species. Two special status plant species were observed on the project site or in the Flossie Way ROW. The first species, the paniculate tarplant is not covered by the MSHCP. The proposed project would impact 32 of the estimated 138 (23\%) paniculate tarplants on the site. The paniculate tarplant is a CNPS "watchlist" (CRPR 4.2) species that is common in western Riverside County. Therefore, potential impacts to this species are not considered significant and no mitigation is needed. The other special status species is the small-flowered morning glory which was observed in the Flossie Way ROW. Eight small-flowered morning glory plants would be impacted by the proposed project, which would not be significant because this species is common in western Riverside County and is covered by the MSHCP.

All of the other special status plant species known from the project area have very low or low potential to occur on the project site, and therefore would not be impacted by the proposed project.

## Sensitive Animals

The conversion of the habitats on the project site to developed uses would adversely impact five sensitive wildlife species that have moderate or high potential to occur there. These are as follows:

- Coastal western whiptail
- Burrowing owl
- Loggerhead shrike
- San Diego black-tailed jackrabbit; and
- Northwestern San Diego pocket mouse.

All of the wildlife species that could be adversely impacted are covered under the MSHCP.
The habitat assessment for the burrowing owl yielded no observations of burrowing owls or sign but identified burrows created by California ground squirrels that could be used by burrowing owls for refuge and/or nesting. Although the focused survey found no burrowing owls on the project site, they could establish nests on the site or in the buffer prior to project initiation. The burrowing owl is a covered species under the MSHCP. Potential impacts to the burrowing owl would be mitigated to a less than significant level with implementation of Mitigation Measure BIO-1.

## Nesting Birds

The proposed project would involve ground disturbance, grading and construction in habitats that have nesting birds. If construction or site preparation activities occur in or near vegetation during the bird nesting season (February 1 to August 31), the project could impact nesting birds. The Federal Migratory Bird Treaty Act
prohibits direct impacts to nesting birds and their nests and the California Fish and Wildlife Code (Section 3503.5 ) prohibits activities that take, possess, or destroy nests or eggs. The developer is required to comply with the Migratory Bird Treaty Act.
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No impact. The project site lacks special status habitats. The Riversidian sage scrub-grassland ecotone found on the project site would not be considered a special status community due to the very low shrub cover found in this grassland. The project site does not contain riparian habitat, open drainages, erosional channels or other features that could contain plant species associated with riparian habitats.
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No impact. The project site does not contain any blue line streams, seasonal wetlands, or other jurisdictional waters. The proposed project would not impact wetlands or other jurisdictional waters. No mitigation measures are needed.

## d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No impact. The project site is located in a rural residential and agricultural area of French Valley. The immediate neighborhood consists of rural residences and farmland. Extensive high density residential development occurs approximately 1,400 feet to the south. The open areas of Bachelor Mtn and the foothills around Diamond Lake Reservoir occur as close as one mile east of the project site. The project site is mostly vacant with two residence and plant communities dominated by grassland and agricultural lands with no riparian habitats. Winchester Ave (SR-79) borders the project site to the east.

Landscape features in rural landscapes that support important wildlife movement functions include aquatic and riparian habitats and ridgelines, particularly when they are in proximity to a known wildlife movement corridor. None of these features occur on the project site or adjoining areas. The project site probably supports local home range movement by common wildlife but does not contain a wildlife corridor or significantly contribute to wildlife movement. There are two culverts outside the eastern site border beneath Winchester Ave (SR-79) but there are no channels associated with these culverts. Medium-sized carnivores such as coyote and skunk could cross SR-79 through the culverts or on the highway surface during the night-time. The proposed project and would not impact existing paths for local wildlife movement. The proposed project would increase use of the agricultural lands on the project site and increase traffic in the vicinity. These changes would occur largely during the day-time and would not significantly impact local wildlife movement.

An important wildlife corridor occurs in the project region: the Proposed Constrained Linkage 18 is a narrow strip of riparian habitat along an unnamed drainage that links Paloma Valley (southwest of the project site) and the Bachelor Mountain area (east of the project site across SR-79). This linkage is approximately 1,400 feet south of the project site. The southern part of the linkage is adjoined by high density residential development. The planning species for this linkage area are bobcat and Los Angeles pocket mouse. The project site is distant from Proposed Constrained Linkage 18 and is separated from it by SR-79. The proposed project would not impact wildlife movement in this regional corridor.
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact. The preservation policies of the County's Multiple Open Space Element of the General Plan rely strongly on implementation of the MSHCP for achieving biological conservation objectives. The proposed project is consistent with the provisions of the Riverside County MSHCP, and is consistent with the General Plan in this respect.

## f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No impact. The proposed project is consistent with the MSHCP, as examined in the following section.

## MSHCP Criteria Cell Issues

The project site and Flossie Way access road are located in Criteria Cell \#5275 within the French Valley Lower Sedco Hills subunit of the Southwest Area Planof the western Riverside MSHCP (County of Riverside 2016b). Biological issues and considerations for this subunit are as follows: (1) conserve a large block of habitat generally east of I-215 and south of Scott Road for narrow endemic species; (2) provide connection to the Southwestern Riverside County Multi Species Reserve, (3) conserve clay soils supporting long-spined spine flower, Munz's onion and Palmer's grapplinghook, (4) maintain core and linkage habitat for bobcat, (5) determine presence of potential Core Area for Los Angeles pocket mouse along Warm Springs Creek, (6) maintain core and linkage habitat for Quino checkerspot butterfly, (7) maintain core area for western pond turtle, and (8) maintain core area for Riverside fairy shrimp.

Other goals for this subunit include conserving clay soil areas for narrow endemic plant species that are restricted to these soil types, including the Munz's onion, and habitat for the Quino checkerspot butterfly.

Table 8 lists the checklist information on the project site from the County Conservation Summary Report Generator. The project site is not within with survey requirements for any amphibians, or mammals, but is located within a habitat assessment area for the burrowing owl. The project site is not within an existing or proposed core area.

| Table 8. MSHCP Review Summary |  |
| :--- | :---: |
| Is the project located in Criteria Area or Public/Quasi-Public Land? | Yes |
| Is the project located in Criteria Area Species Survey Area (CASSA)? | Yes* |
| Is the project located in Amphibian Species Survey Area? | No |
| Is the project located in Mammal Species Survey Area? | No |
| Is the project located adjacent to MSHCP Conservation Areas? | No |
| Is the project located in Narrow Endemic Plant Species Survey Area (NEPSA)? | Yes* |
| Are riverine/riparian/wetland habitats or vernal pools present? | No |
| Is the project located in Burrowing Owl Survey Area? | Yes |
| * The main project site (APNs 476-010-059 and 476-010-013) is not within a CASSA or NEPSA. The Flossie Way <br> access road area (part of APN 476-010-054) is within a CASSA and NEPSA. |  |

## Criteria Cell Coverage

The project site is located in the north-central part of Cell \#5275 in an area that is not proposed for conservation. Clay soils are absent from the two parcels where the school would be built, however a small area of clay soils mapped by NRCS (2016) occurs in part of the 1.78 acre easement for the Flossie Way access road. The MSHCP (County of Riverside 2003b) identifies the conservation objectives of Cell \#5275 as follows:
"Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 18. Conservation within this Cell will focus on riparian scrub, woodland and forest habitat and adjacent agricultural land. Areas conserved within this Cell will be connected to riparian scrub, woodland and forest habitat and agricultural land proposed for conservation in Cell \#5376 to the south and to agricultural land proposed for conservation in Cell \#5372 to the east. Conservation within this Cell will range from $10 \%$ to $20 \%$ of the Cell focusing in the southern part of the Cell".

A regionally significant wildlife corridor identified in the MSHCP is Constrained Linkage 18, which is located south of the project site (Figure 7, Project Site in relation to MSHCP Criteria Cells and Constrained Linkage 18). Constrained linkage 18 is a narrow strip of riparian habitat along an unnamed drainage that links Paloma Valley (southwest of the project site) and Bachelor Mountain (east of the project site across SR-79). The linkage is constrained by adjoining agricultural uses, which, along with the narrow width of the riparian area, contribute to a large edge effect. The planning species for this linkage area are bobcat and Los Angeles pocket mouse.

The MSHCP describes the linkage as follows:
"Proposed Constrained Linkage 18 consists of an unnamed drainage located in the south-central region of the Plan Area. This Constrained Linkage connects Proposed Core 2 (Antelope Valley) to the west with Proposed Extension of Existing Core 7 (Lake Skinner/Diamond Valley Lake Extension). Existing agricultural use constrains the Linkage, and planned land uses surrounding the Linkage are limited nearly entirely to community Development. The Linkage also has a relatively high proportion of land affected by edge (approximately 250 acres of the total 310 acres) and will also be subject to Edge Effects also due to the widening or extension of several facilities including Washington Street, Briggs Road, and SR-79. Despite these issues, the Linkage nonetheless provides Live-In and movement Habitat for species. Guidelines Pertaining to Urban/Wildlands Interface for the management of edge factors such as lighting, urban runoff, toxics, and domestic predators are presented in Section 6.1 of this document. This Linkage likely provides for movement of common mammals such as bobcat. An adequate wildlife underpass or overpass may need to be implemented to insure movement of species in this area and to reduce the chance of mortality from vehicle collision."

## MSHCP Implementation Structure

## Section 6.1.2.Protection of Species Associated with Riparian/Riverine Areas andVernal Pools

The project site does not contain riparian habitat, open drainages, erosional channels or other features that could contain plant species associated with riparian habitats. A blue-line channel is found on the adjoining parcel to the north of the project site. The Highway 79 Natural Environmental Study (Caltrans 2004) indicated that this blue-line channel extends into the extreme northeastern corner of the project site. However, no channel was observed in this area during the field survey. It appears that the channel has been filled in on the adjacent property and only overland flows currently occur on the project site.

Ephemeral Wetlands and Vernal Pools. Seasonal wetlands, including vernal pools, are communities that could support special status plant or animal species. No seasonal wetlands were observed on the two parcels that form the project site. Two road rut features were noted to be ponded on March 2, 2017 within the Right of Way (ROW) of Flossie Road. However, these features were only ponded for only eight days, and this would not be sufficient for these road ruts to be considered seasonal wetlands or listed fairy shrimp habitat. In addition, seasonal wetlands were not noted in historical Google Earth aerial photographs reviewed for this study.

## Section 6.1.3 Compliance: Protection of Narrow Endemic Plant Species

The main project site (APNs 476-010-059 and 476-010-013) is not within a Narrow Endemic Plant Survey Area (NEPSA). However, the proposed Flossie Way access road (APN 476-010-054) is within a NEPSA. The NEPSA species that should be surveyed for are: Munz's onion, San Diego ambrosia, many-stemmed dudleya, spreading navarretia, California orcutt grass, and Wright's trichocoronis. The botanical habitat assessment of the Flossie Way access route found that the area has been regularly disked for agricultural uses and concluded that NEP species have low potential to occur there. A habitat evaluation for the six Narrow Endemic Plant species was conducted on March 2, 2017. It was determined that the Flossie Way ROW does not contain potential habitat for these species due to the lack of suitable soils (deep clays), continued disturbance, and the lack of suitable seasonal wetlands, such as vernal pools, that are the potential habitat for these species. Based on this assessment, further surveys are not warranted.

## Section 6.3.2 Compliance: Additional Survey Needs and Procedures

The main project site (APNs 476-010-059 and 476-010-013) is not within a Criteria Area Species Survey Area (CASSA). The Flossie Way proposed access route is within a CASSA for the following plant species: Davidson's saltscale, Parish's brittlescale, thread-leaved brodiaea, smooth tarplant, round-leaved filaree, Coulter's Goldfields, and little mousetail. The botanical habitat assessment concluded these species have low potential to occur within the Flossie Way proposed access route. The botanical habitat assessment concluded that these species would not be expected to occur on the project site or that the potential for their occurrence is very low. Based on this assessment, further surveys are not warranted.

A Riverside County Parcel Report for APN 476-010-015 states that a previously proposed development for this parcel had completed biological surveys for burrowing owl and a habitat assessment for 13 species, and had been approved under the HANS process. This report was not available online, but should be available from the County Planning Department.

## Burrowing Owl

A habitat assessment for burrowing owls was carried out on the project site on November 5, 2016. No western burrowing owls were observed or otherwise detected onsite (i.e., sign or calls) or in adjoining areas during the survey. Burrows constructed by California ground squirrels were found on the project site that could potentially be used by burrowing owls. A focused survey was carried out on five site visits from March 7-30, 2017. The focused survey for burrowing owls did not find any burrowing owls or their sign on the project site or in the buffer area.

## MSHCP Consistency for Impacts to Riparian/Riverine/Vernal Pools Habitat

There are no riparian or riverine habitats on the project site. No seasonal wetlands were observed on the two parcels that form the project site, and there is no opportunity for riparian-dependent species to occur on the site. Two road rut features were noted to be ponded on March 2, 2017 within the Right of Way (ROW) of Flossie Road. However, these features were ponded for only eight days, which is not be sufficient for these road ruts to be considered seasonal wetlands or listed fairy shrimp habitat. In addition, seasonal wetlands were not noted in historical Google Earth aerial photographs reviewed for this study.

## Section 6.1.4.Urban/Wildlands Interface Guidelines

Section 6.1.4 of the MSHCP presents guidelines that reduce indirect impacts to MSHCP conservation areas at the Wildlands/Urban interface. The project site is not in the vicinity of a conservation area and the Urban/Wildlife Interface Guidelines are therefore not applicable.

## Reserve Assembly

The project site is located in the northwestern part of Cell \#5275 in an area that is not proposed for conservation. The project site is not located in a designated core area and is located approximately 1,400 feet north of Constrained Linkage 18.

The objectives of Cell \#5275 and an analysis of the proposed project's impactson these are as follows:

## 1. Contribute to assembly of Proposed Constrained Linkage 18.

Proposed Constrained Linkage 8is located approximately 1,400 feet south of the project site. The land between the project site and the linkage is in agricultural use and is crossed by SR-79. The proposed project would not impact the assembly or wildlife movement function of Constrained Linkage 18.

## 2. Focus on coastal sage scrub (CSS), grassland, riparian scrub, woodland and forest habitat.

The project site contains disturbed annual grassland, tilled agricultural fields, small areas of Riversidian sage scrub/grassland ecotone, and developed uses. The proposed project would impact $39 \%$ of the disturbed annual grassland on the project site, leaving the remaining $61 \%$ in its existing condition. The Riversidian sage scrub-grassland ecotone found on the project site would not be considered a special status community due to the very low shrub cover found in this grassland.
3. Areas conserved within this Cell will be connected to riparian scrub, woodland and forest habitat and agricultural land proposed for conservation in Cell \#5376 to the south and to agricultural land proposed for conservation in Cell \#5279 to the east.

Since adoption of the MSHCP, Cell \#5376 has been largely developed with residential land uses. The project site occurs in the northwestern corner of Cell \#5275, separated from Cell \#5279 by SR-79 and the agricultural lands in the northeastern corner of Cell \#5275. This cell objective is not furthered by the habitats and location of the project site.
4. Conservation within this Cell will range from $10 \%-20 \%$ of the Cell focusing in the southern portion of the Cell.

The project site is located in the northwestern part of the Cell. This objective is not relevant to the project site. Nonetheless, the proposed project would develop approximately $63.6 \%$ of the site, leaving the two residences and surrounding habitats ( $36.4 \%$ of the site) undeveloped.

## Mitigation Measures

BIO-1 A preconstruction clearance survey for burrowing owls shall be carried out by a qualified biologist within 30 days prior to ground disturbance, pursuant to California Department of Fish and Wildlife protocols (California Burrowing Owl Consortium 1993). Between February 1 and August 31 (nesting season), the preconstruction survey will include a 300 -foot buffer; outside of this period, it will include a 100 -foot buffer. If owls are found within the survey area during the nesting season, construction activities will not occur within 300 feet of the occupied burrows until nesting is completed. A qualified biologist must confirm that nesting has been completed prior to the removal of the work buffer restriction. If owls are found within the disturbance footprint outside of the February 1 through August 31 period, passive relocation (e.g., use of one-way doors and collapse of burrows) will occur.

## Certification

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date:__May 4, 2017 $\qquad$ Signed: Th nu

> Phil Brylski


Date: _May 4, 2017 $\qquad$ Signed: $\qquad$
David Bramlet

## 8. References

Allen, R.L. and F.M. Roberts.2013.Wildflowers of Orange County, and the Santa Ana Mountains.Laguna Wilderness Press, Laguna Beach, California.

AMEC.2007.Burrowing owl survey report for the Valley-Ivy Glen transmission line project, Riverside County, California.Prepared for Southern California Edison.

AMEC. 2012. Draft Results of Focused surveys for Listed fairy shrimp species for the Valley-Ivy Glen transmission line project Phase II, Riverside County, California. Prepared for Southern California Edison.

Baldwin, BG, D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, Editors.2012.The Jepson manual: Vascular plants of California, second edition. University of California Press, Berkeley, California.

Brown, S.2003.Western Riverside County ephemeral pool table.U.S. Fish and Wildlife Service, Carlsbad Field Office.

California Burrowing Owl Consortium. 1993. Burrowing owl survey protocol and mitigation guidelines.
California Department of Fish and Wildlife (CDFW).2009. Protocols for surveying and evaluating impacts to special status native plant populations and natural communities.

California Department of Fish and Wildlife (CDFW).2010.Hierarchial list of natural communities with Holland types.

California Department of Fish and Wildlife (CDFW).2012. Staff report on burrowing owl mitigation.
California Department of Fish and Wildlife (CDFW), Natural Diversity Database.2016a.California Natural Diversity (RareFind) Database Element report for theBachelor Mtn., Winchester, Murrieta, Romoland 7.5 ' quadrangles.California Department of Fish and Wildlife, Natural Heritage Division, Sacramento, California.

California Department of Fish and Wildlife (CDFW), Natural Diversity Database.2016b.Special Vascular Plants, Bryophytes, and Lichens List.Wildlife and Habitat Data Analysis Branch, Sacramento, California (July).

California Department of Fish and Wildlife (CDFW), Natural Diversity Database.2016c.Special Animals List.Wildlife and Habitat Data Analysis Branch, Sacramento, California (July).

California Native Plant Society (CNPS).2001.Botanical survey guidelines.California Native Plant Society, Sacramento, California.

California Native Plant Society (CNPS).2016.Inventory of rare and endangered vascular plants of California, 8th Ed. California Native Plant Society, Sacramento, California.

Caltrans.2007.State Route 79 Widening Study: Thompson Road to Domenigoni Parkway, Draft Natural Environment Study.

Caltrans.2010.State Route 79 Realignment Project: Domenigoni Parkway to Gilman Springs Road.Final Natural Environment Study.

Consortium of California Herbaria (Consortium) (Consortium).2016.Consortium of California herbaria website, an online herbaria database: A review of collections from the French Valleyarea.University of California, Berkeley and the Jepson Herbarium.http://ucjeps.berkeley.edu/consortium

County of Riverside.2003a.Western Riverside County multiple species habitat conservation plan (MSHCP).Prepared by Dudek and Associates.

County of Riverside 2003b.Section 3.3.15 Southwest Area Plan; Subunit 5 French Valley/Lower Sedco Hills, plus the criteria for Cell 5275, In Section 3.0 Conservation Planning Process, Western Riverside MSHCP.

County of Riverside.2004.Errata to the MSHCP.Prepared by Dudek and Associates.

County of Riverside.2005a.Burrowing owl survey protocol.Environmental Planning Department, County of Riverside.

County of Riverside. 2005 c . What being in an MSHCP Criteria Cell means, the HANS process.
County of Riverside.2005d.Determination of Biologically Equivalent or Superior Report guidelines (MSHCP Section 6.1.2).

County of Riverside.2006a.Burrowing owl survey instructions for the Western Riverside Multiple Species Habitat Conservation Plan
Area.http://rctlma.org/Portals/1/EPD/consultant/burrowing owl survey instructions.pdf
County of Riverside.2006b.MSHCP 30-Day Pre-Construction Burrowing Owl Report Format.
County of Riverside.2006c.HANS application guide.
County of Riverside.2009.Draft Biological policies and procedures.County of Riverside Planning Department .
County of Riverside.2016a.Riverside County TLMA GIS information on parcels No. 476-010-059, 476-010013 and 476-010-054.

County of Riverside.2016b.MSHCP conservation summary report for assessor's parcels No.476-010-059, 476-010-013 and 476-010-054.

Dudek\& Associates.2003.Species Accounts for the Western Riverside Multiple Species Habitat Conservation Plan.

Google Earth.2016.Aerial photographs of the property dated:February 9, 2016.Other photos dated from: 6/1/2002,10/20/2003,1/11/2007,5/24/2009, and 4/26/2011.

Holland, R. F.1986.Preliminary Descriptions of the Terrestrial Natural Communities of California. Sacramento, California.

Klein, A. and J. Evans.2005.Vegetation alliances of western Riverside County, California.California Native Plant Society, Sacramento California.Report prepared for the California Dept. of Fish and Wildlife, Contract No. P0185404.

Knecht, A.A.1971.Soil survey of western Riverside area, California.U.S. Department of Agriculture, Soil Conservation Service.

Morton, D.M, and M.P. Kennedy2003.Preliminary geologic map of the Bachelor Mountain 7.5' USGS Quadrangle, Riverside County, California.

Munz, P. A.1974.A Flora of Southern California.University of California Press, Berkeley, California.
NRCS (Natural Resources Conservation Service).2016.Custom soil resource report for Western Riverside area, California: French Valley.

RCA (Western Riverside County, Regional Conservation Authority).2007a.MSHCP permittee implementation guidance manual.

RCA (Western Riverside County, Regional Conservation Authority).2007b.MSHCP permittee implementation guidance manual, Appendix D Example, MSHCP Consistency assessment (Faux Willow Creek Project).

RCA (Western Riverside County, Regional Conservation Authority)2012.Western Riverside County MSHCP, Biological Monitoring Program, Burrowing Owl, and grassland bird survey report, 2011.

RCA (Western Riverside County, Regional Conservation Authority).2009.Western Riverside County MSHCP, Biological Monitoring Program, Stephen's kangaroo rat survey report, 2008.

RCA(Western Riverside County, Regional Conservation Authority).2011a.MSHCP Wildlife Corridors, Presentation to the RCA board.

RCA (Western Riverside County, Regional Conservation Authority). 2011b.Western Riverside County MSHCP, Biological Monitoring Program, Rare Plant Surveys 2006, 2007, 2008, 2009 and 2010.

RCA (Western Riverside County, Regional Conservation Authority).2012a.Western Riverside County MSHCP, Biological Monitoring Program, Burrowing owl survey report, 2011.

RCA (Western Riverside County, Regional Conservation Authority).2012b.Western Riverside County MSHCP, Biological Monitoring Program, Coastal Sage Scrub Bird Surveys and Nest Monitoring,2011.

RCA(Western Riverside County, Regional Conservation Authority).2013.2013 RCA Board Workshop, Presentation to the RCA board.

Roberts, F.M, S.D. White, A.C. Sanders, D.E. Bramlet, and S.D. Boyd.2004. The vascular plants of western Riverside County: An annotated checklist. F.M. Roberts Publications, San Luis Rey, California.

Roberts, F.M, S.D. White, A.C. Sanders, D.E. Bramlet, and S.D. Boyd.2007.Additions to the flora of western Riverside County.Crossosoma 33 (2): 55-69.

SCE and AECOM.2014.Biological Resources Assessment Addendum for the Valley South 115 KV subtransmissionproject.Prepared for Southern California Edison, Monrovia, California.

Simpson, M.G., J.P. Rebman, K.E. Hasenstab-Lehman, C.M. Guilliams, and P.O.
McConnell.2013.Cryptanthawigginsii(Boraginanceae): A presumed extinct species rediscovered.Madrono 60 (1): 24-34.

The Planning Center.2013. City of Menifee General Plan, Environmental Impact Report (DEIR).Prepared for the City of Menifee.

Tom Dodson and Associates (Dodson).2015.MSHCP Consistency Analysis, French Valley 170, Riverside County, California.Prepared for the County of Riverside
U.S. Fish and Wildlife Service (USFWS).2010a.Endangered and threatened wildlife and plants:Revised critical habitat for Navarretiafossalis (Spreading navarretia). Federal Register 75(194): 62192-62255.
U.S. Fish and Wildlife Service.2010b.Endangered and threatened wildlife and plants: Final rule designating critical habitat for Ambrosia pumila (San Diego ambrosia). Federal Register 75(229): 74546-74604.
U.S. Fish and Wildlife Service.2011.Endangered and threatened wildlife and plants: Final revised critical habitat for Brodiaeafilifolia) Thread-leaved brodiaea.Federal Register 76(26): 6848-6925.
U.S. Fish and Wildlife Service.2012a.Endangered and threatened wildlife and plants: Designation of revised critical habitat for Allium munzii (Munz's onion), and San Jacinto Valley crownscale (Atriplexcoronata var. notatior).Federal Register 77(74): 23008-23055
U.S. Fish and Wildlife Service. 2012b. Endangered and threatened wildlife and plants: Revised critical habitat for the Riverside fairy shrimp, Final Rule. Federal Register 77(233): 72070-72140.
U.S. Fish and Wildlife Service. 2015. Survey guidelines for the listed large brachiopods.

USFWS. 2007. Vernal pool fairy shrimp (Branchinecta lynchi):Five year review: vernal pool fairy shrimp.
Weather Currents.2017.Precipitation totals for the 2016-2017 water year, to February 2017, and the 2015-2016 water year. http://weathercurrents.com/frenchvalley/

## Appendix A. Site photographs



Photo 1.Looking west from the northeast corner of the property. (November 2016)


Photo 2. Looking north from the southeast corner of the project site. (November 2016)


Photo 3. Looking west along the driveway to the existing residences from Hwy 79. (March 2017)


Photo 4.Looking west from the south east corner of the project site. (November 2016)


Photo 5. Looking north, from the southwest corner of the project site. (November 2016)


Photo 6. Looking south, from the northwest corner of the project site. (November 2016)


Photo 7. Looking southeast, from the knoll in the northern area of the project site. (November 2016)


Photo 8. Looking south at the secondary residence and basketball court. (November 2016)


Photo 9.Looking north, along the Hwy 79 easement from the existing access road. (November 2016)


Photo 10.Looking south, along the Hwy 79 easement. (November 2016)


Photo 11.Looking west, along the Flossie Road easement. (March 2017)


Photo 12:Looking east, along the Flossie Road easement. (November 2016)


Photo 13. Road rut ephemeral wetland along the Flossie Road easement. (view looking west, March 2017)


Photo 14. California ground squirrel burrow in southwestern part of proposed school site (March 2017).

## Appendix B. Plant Species Observed

*-Non-native species
$\dagger$-Special status plant species
GYMNOSPERMS
CONIFEROPHYTA, CONE-BEARING PLANTS
Pinaceae (Pine Family)
Aleppo pine (*Pinus halepensis)
MAGNOLIOPHYTA, Flowering Plants
EUDICOTYLEDONES, EUDICOTS
Amaranthaceae (Amaranth Family)
Tumbling pigweed (*Amaranthus albus)
Asteraceae (Sunflower Family)
western ragweed (Ambrosia psilostachya)
California sagebrush (Artemisia californica)
tocalote (*Centaurea melitensis)
common horseweed (Conyza canadensis)
common sand aster (Corethrogyne filaginifolia)
Australian brass buttons (*Cotula australis)
paniculatetarplant ( $\dagger$ Deinandra paniculata)
eurypos (*Euryops pectinatus)
annual sunflower (Helianthus annuus)
telegraph weed (Heterotheca grandiflora)
smooth cat's ears (*Hypochaeris glabra)
coastalisocoma (Isocoma menziesii)
prickly lettuce (*Lactuca serriola)
narrow-leaved filago (*Logfia gallica)
stink net (*Oncosiphon piluliferum)
groundsel (*Senecio vulgaris)
prickly sow thistle (*Sonchus asper)
common sow thistle (*Sonchu soleraceus)
Boraginaceae (Forget-Me-Not Family)
common fiddleneck (Amsinckia intermedia)
gray fiddleneck (Amsinckia retrosa)
narrow-toothcombseed (Pectocarya linearis)
Brassicaceae (Mustard Family)
black mustard (*Brassica nigra)
Sahara mustard (*Brassica tournefortii)
shepherd's purse (*Capsella bursa-pastoris)
summer mustard (*Hirschfeldia incana)
shiny pepper grass (Lepidium nitidum)
wild radish (*Raphanus sativa)
London rocket (*Sisymbrium irio)
hare's ear cabbage (*Sisymbrium orientale)

```
Caryophyllaceae (Pink Family)
windmill pink (*Silene gallica)
Chenopodiaceae (Goosefoot Family)
serrate-leaved saltbush (*Atriplex suberecta)
pitseed goosefoot (*Chenopodiumber landieri)
nettle-leaved goosefoot (*Chenopodium murale)
summer cypress (*Kochia scoparia)
Russian thistle (*Salsola tragus)
Convolvulaceae (Morning glory Family)
finger-leaved morning glory (Calystegia macrostegia)
small-flowered morning glory (†Convolvulus simulans)
Crassulaceae (Stone crop Family) pygmy stone crop (Crassula connata)
```

```
Euphorbiaceae (Spurge Family)
```

Euphorbiaceae (Spurge Family)
dove weed (Croton setiger)
dove weed (Croton setiger)
rattlesnake spurge (Euphorbia albomarginata)
rattlesnake spurge (Euphorbia albomarginata)
petty spurge (*Euphorbia peplus)
Fabaceae (Pea Family)
Acacia (*Acacia sp.)
grab lotus (Acmispon micranthus)
miniature lupine (Lupinus bicolor)
bajada lupine (Lupinus concinnus)
arroyo lupine (Lupinus succulentus)
bur clover (*Medicago polymorpha)
hairy vetch (*Vicia villosa)
Geraniaceae (Geranium Family)
long-beakedfilaree (*Erodium botrys)
red-stemmedfilaree (*Erodium cicutarium)
white-stemmedfilaree (*Erodium moschatum)
Juglandaceae (Walnut Family)
pecan (*Carya illinoinensis)
Lamiaceae (Mint Family)
rosemary (*Rosmarinus officinalis)
vinegar weed (Trichostema lanceolatum)
Lythraceae (Loosestrife Family)
pomegranate (*Punica granatum)
Malvacea (Mallow Family)
cheeseweed (*Malva parviflora)
Montiaceae (Miner's Lettuce Family)
red maids (Calandrinia menziesii)

```
```

Myrtaceae (Myrtle Family)
silver dollar gum (*Eucalyptus polyanthemos)
Oleaceae (Olive Family)
shamel ash (*Fraxinus udehi)
olive (*Olea europea)
Oxalidaceae (Wood-Sorrel Family)
yellow sorrel (*Oxalis corniculata)
Polygonaceae (Buckwheat Family)
interior California buckwheat (Eriogonum fasciculatum var. foliolosum)
Persian knotweed (*Polygonum argycoleon)
curly dock (*Rumex crispus)
Primulaceae (Primrose Family)
scarlet pimpernel (*Anagallisarvensis)
Solanaceae (Nightshade Family)
jimson weed (Datura wrightii)
tree tobacco (*Nicotiana glauca)
MONOCOTYLEDONES, MONOCOTS
Arecaceae (Palm Family)
queen palm (*Syagrus romanzoffiana)
Juncaceae (Rush Family)
toad rush (Juncus bufonius)
Poaceae (Grass Family)
wild oat (*Avena fatua)
cultivated oat (*Avena sativa)
rescue grass (*Bromus catharticus)
ripgut brome (*Bromus diandrus)
red brome (*Bromus madritensis ssp. rubens)
foxtail fescue (*Festuca myuros)
foxtail barley (*Hordeum murinum ssp.leporinum)
goldentop (*Lamarkia aurea)
schismus (*Schismus barbatus)
wheat (*Triticum aestivum)
Themidaceae (Brodiaea Family) blue dicks (Dichelostemma capitatum)

```

\section*{Appendix C. Wildlife Species Observed}
```

Birds
westernmeadowlark (Sturnella neglecta)
westernbluebird (Sialia mexicana)
northernmockingbird (Mimus polyglottos)
common raven (Corvuscorax)
westernkingbird (Tyrannus verticalis)
ash-throatedflycatcher (Myiarchus cinerascens)
Say's phoebe(Sayornis saya)
rockpigeon (Columba livia)
mourningdove (Zenaida macroura)
savannahsparrow (Passerculus sandwichensis)
larksparrow (Chondestes grammacus)
white-crowned sparrow (Zonotrichia leucophrys)
housefinch (Carpodacus mexicanus)
red-tailed hawk (Buteo jamaicensis)
American kestrel (Falco sparverius)
Mammals
Botta pocket gopher (Thomomys bottae) (sign)
Beechey ground squirrel (Otospermophilus beecheyi)
coyote(Canis latrans) (sign)

```

\section*{Reptiles}
side-blotched lizard (Uta stansburiana)

Harness, Teresa
\begin{tabular}{ll} 
From: & David Bramlet <davebramlet7@gmail.com> \\
Sent: & Wednesday, May 24, 2017 6:44 PM \\
To: & Harness, Teresa \\
Subject: & HANS 2343/ PUP 931 / JPR 17-04-11-01 Temecula Valley Charter
\end{tabular}

The updated version of the Habitat Assessment for the Temecula Valley Charter School site, HANS 2343/ PUP 931 / JPR 17-04-11-01, has been uploaded to the County's ftp site.

David Bramlet
Consulting Biologist

From:
Sent: Thursday, May 25, 2017 8:21 AM
To:
Subject:

Harness, Teresa
'pbrylski@gmail.com'
Planning Department has received a biological report

This email is to inform you that the Planning Department has received a biological report regarding the below referenced case:

Report Name: HABITAT ASSESSMENT TEMECULA VALLEY CHARTER SCHOOL
Report Date: 5/24/17
Case Number: PUP00931
Assessor's Parcel Number(s): 476-010-059, 476-010-013, 476-010-054
PDB Number: PDB06444 Revised 4-052417
Biologist Assigned: Given to biologist staff for review
Submit along with proper identification title of report and case number, assessor parcel numbers to be viewed in PDF format through:

The County of Riverside; RCIT Secure File Transfer
Server located at website: https://ftp.co.riverside.ca.us/
Public: Log in using the username of: rivcodocs
Password is: P@ssw0rd (the " 0 " is zero)
In search (it's labeled "Filter") box type in: Biology
Check the box: Find
It will bring up a folder: BB_Planning/Biology
- It is important to submit directly to: BB_Planning/Biology
- If not then it cannot be confirmed that the report has been submitted correctly.

Upload each biological report individual with a Title name of report.
(Use same title in the email subject line; one at a time: see below)
NO ZIP files or locked files accepted.
Select Green button to: "Add Files" from your computer; select your file(s) to be added, hit "Open."
Select Gray button (labeled "Start") to upload your report.
Hit the "Logout" button in the top right when completed with the upload.
Once report has been submitted then please notify me: THarness@RIVCO.org
Place the report's title and case number in the SUBJECT line of your email
**** Please call the RCIT-Helpdesk for any assistance (951) 955-9900.
The PDB number will be given as the reference number and will be used to track the review status of the report. Should you have any questions, please do not hesitate to call or via email.

Thank you,

County of Riverside
Planning Department
4080 Lemon Street, \(12{ }^{\text {th }}\) Floor
Riverside, CA 92501
Telephone: (951) 955-6892
Fax: (951) 955-1811
Email: tharness@rivco.org
Planning Department Website: http://planning.rctlma.org/
County of Riverside California

\section*{Follow us on Twitter!}

How are we doing? Click the Link and tell us
Confidentiality Disclaimer: This email is confidential and intended solely for the use of the individual(s) to whom it is addressed. The information contained in this message may be privileged and confidential and protected from disclosure.
If you are not the author's intended recipient, be advised that you have received this email in error and that any use, dissemination, forwarding, printing, or copying of this email is strictly prohibited. If you have received this email in error please delete all copies, both electronic and printed, and contact the author immediately.

Harness, Teresa
\begin{tabular}{ll} 
From: & Microsoft Outlook \\
To: & pbrylski@gmail.com \\
Sent: & Thursday, May 25, 2017 8:21 AM \\
Subject: & Relayed: Planning Department has received a biological report
\end{tabular}

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:
pbrylski@gmail.com (pbrylski@gmail.com)
Subject: Planning Department has received a biological report

\section*{Appendix}

This page intentionally left blank.

\section*{Appendix C2 Fairy Shrimp Survey}

SUMMITWEST

\title{
Collection and Processing of Dry Samples for the Presence of Fairy Shrimp Cysts and Culturing of Cysts for Species Determination for Species Identification at Temecula Charter School Site.
}

\author{
29 May, 2017
}

\section*{Introduction}

Chuck Black, 10(a)(1)(A) permit number TE835549-7, of Ecological Restoration Service, San Diego, CA, was contracted in April 2017 by Chezzie Brungraber of SummitWest Environmental, Inc., Bend Oregon for assistance with collection and processing of dry samples for the determination of the presence of fairy shrimp cysts, and for culturing of Branchinecta cysts for identification to the species level of any cysts found for dry samples from 2 road ruts on the Temecula Charter School site (Figures 1 and 2).

\section*{Project Description}

The Temecula Charter School parcel has UTM coordinates for the approximate center of the site as 11S 0491121mE x 3720624mN (Figures 1, 2). The parcel is located within criteria cell 5275 (Southwest Area Plan, French Valley-Lower Sedco Hills subunit) of the western Riverside Multi-Species Habitat Conservation Plan (MSHCP; County of Riverside 2016b). Because the project site is found within a criteria cell, this report includes a habitat assessment for species and sensitive habitats identified by the MSHCP and an MSHCP Consistency Analysis (RCA 2007a, 2007b).

During a 2016-17 habitat assessment of the site by Phillip Brylski and David Bramlet, observed was ponding in two road ruts, approximately 28 sq ft (RR1) and approximately 7 sf (RR2) in size.

The ponded road ruts were assessed for meeting the inundation criteria for fairy shrimp habitat (USFWS 2015). It is likely that these road ruts filled on February 27, 207 during an unusual rain event (Weather Currents 2017). The initial observations were conducted three days following that event (March 2, 2017). The road ruts within the Flossie Rd ROW were dry within 10 days of when the road ruts were assumed to have ponded (observed on March 10, 2017) and eight days following the first survey. These road ruts appeared to have actually dried within eight days, as observed by the wildlife biologist. Therefore, these road ruts would not be considered

SUMMITWEST
to have ponded for a sufficient duration to provide suitable habitat for listed fairy shrimp species. No ponding was observed on the two parcels that form the project site. These recent survey guidelines note a seven or ten day period for sampling period, which is assumed to represent the life cycle of some fairy shrimp species (USFWS 2015).

In a review of the habitat assessment plan, the Riverside County Environmental Programs Department and the Regional Conservation Authority (RCA) for Joint Project Review stated that the casual observations of ponding were not sufficient for fairy shrimp presence sampling, and that a wet or dry season survey needed to be performed on the basins. The current request represents a dry season sampling to satisfy these requirements.

\section*{Methods}

\section*{Sample Collection}

After receiving a notice of permission to proceed by the Service, Chuck Black collected samples on May 28, 2017. Ruts were located by gps locations and the presence of previously placed pin flags by the ruts. Estimates of size during ponding at the time of the habitat assessment gave 28 square feet for Road Rut 1 and 4 square feet for Road Rut 2. Unvegetated area of the ruts at time of sample collections were much smaller. Ten approximately 50 ml samples were collected along a single transect through each rut were collected.

No obligate or facultative wetland plants were noted in ruts, and there was a dense stand of non-native Bromus diandrus on the site, including in most of the rut areas.

\section*{Soil Processing for Cyst Presence}

Samples were processed by Chuck Black of Ecological Restoration Service, who is authorized by the U.S. fish and Wildlife Service to process dry samples for the presence of fairy shrimp cysts and to culture cysts to identify to species level as special conditions of his 10(a)(1)(A) permit. The bulk samples were divided and hydrated for approximately 1-2 hours in tap water, then washed through a set of sieves. Material passing through a Number 45 (.0139") USA Standard Testing Sieve, A.S.T.M.E.-11 specification and caught on a Number 70 (.0083") Sieve was rinsed into a container with approximately 50 ml of a saturated brine solution to float organic material, including fairy shrimp cysts. The material floating on the brine was decanted onto a paper filter on a filter funnel, and water was removed through the filter paper by vacuum suction. The material left on the paper was examined under a 6.3-570x power Olympus SZX9 Zoom Stereo Microscope. Distinctive fairy shrimp cysts, if present, were individually counted (if less than approximately 50 ) or estimated (for larger numbers) by examining \(1 / 4\) or \(1 / 2\) subsections of the filter and multiplying the subset by the appropriate factor. The presences and numbers of ostracod shells and cladoceran ephippia were also noted in samples.

\section*{Results}

No Branchinecta or Streptochepalus cysts were present in any of the samples from either rut. No ostracod shells or cladoceran ephippia were present in any of the samples.

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.



Figure 1. Topographic map


Figure 2 - Location of the road ruts (RR) at the Temecula Valley Charter School site. RR1: \(33.372503 \mathrm{~N}, 117.0060046 \mathrm{~W}\), RR2: 33.3722513 N, 117.055343W

\section*{Appendix}

This page intentionally left blank.

\section*{Appendix D Geotechnical Investigation}

\title{
GEOTECHNICAL INVESTIGATION PROPOSED CHARTER SCHOOL SITE 34155 WINCHESTER ROAD \\ FRENCH VALLEY AREA RIVERSIDE COUNTY, CALIFORNIA
}

\section*{PREPARED FOR:}

\section*{TEMECULA VALLEY CHARTER SCHOOL}

C/O Hansberger \& Klein, PLC
P.O. Box 1352

Blue Jay, California 92317-1352

\section*{PREPARED BY:}

INLAND FOUNDATION ENGINEERING, INC.
1310 South Santa Fe Avenue
San Jacinto, California 92583

September 9, 2016
Project No. T238-001

\title{
INLAND FOUNDATION ENGINEERING, INC. \\ Consulting Geotechnical Engineers and Geologists \\ P.O. Box 937, San Jacinto, CA 92581
}

September 9, 2016
Project No. T238-001

\section*{TEMECULA VALLEY CHARTER SCHOOL}

C/o Hansberger \& Klein, PLC
P.O. Box 1352

Blue Jay, California 92317-1352

Attention: Richard J. Hansberger

Re: Geotechnical Investigation
Proposed Charter School Site
34155 Winchester Road
French Valley Area, Riverside County, California
APN's 476-010-013 \& -059

Dear Mr. Hansberger:
We are pleased to submit this geotechnical investigation report conducted for the referenced project. The site is located west of and adjacent to Winchester Road, approximately 625 feet south of Keller Road in the French Valley area of Riverside County, California.

It is our opinion that the proposed development is feasible from a geotechnical engineering standpoint. Our report includes design recommendations along with the field and laboratory data. We have also included recommendations for site grading.

We appreciate the opportunity of being of service to you on this project. If there are any questions, please contact our office.


\section*{TABLE OF CONTENTS}
INTRODUCTION ..... 1
SCOPE OF SERVICES ..... 1
PROJECT DESCRIPTION ..... 2
GEOLOGIC SETTING ..... 4
SUBSURFACE CONDITIONS ..... 16
CONCLUSIONS AND RECOMMENDATIONS ..... 18
Foundation Design ..... 18
Lateral Design ..... 19
Trench Wall Stability ..... 19
Retaining Wall ..... 19
Concrete Slabs-on-Grade ..... 20
Preliminary Pavement Design ..... 23
General Site Grading ..... 24
GENERAL ..... 26
REFERENCES ..... 28
APPENDICES
APPENDIX A - Field Exploration ..... A-1 - A-13
Exploratory Borings ..... A-2 - A-12
Site Plan ..... A-13
APPENDIX B - Laboratory \& Soil Mechanics Testing ..... B-1 - B-8
Analytical Testing ..... B-2
General ..... B-3
Maximum Density-Optimum Moisture Determinations ..... B-4
Classification Testing ..... B-5
Direct Shear Testing ..... B-6
Consolidation Testing ..... B-7 - B-8
LIST OF FIGURES
Figure 1 - U.S.G.S. Topographic Map and Aerial Photo ..... 3
Figure 2 - C.D.M.G. 1966 Geologic Map ..... 5
Figure 3 - U.S.G.S. Geologic Maps ..... 6
Figure 4 - Location of Historical Ground Water Wells ..... 7
Figure 5 - FEMA Flood Insurance Rate Map (FIRM) ..... 7
Figure 6 - 2010 Fault Activity Map of California ..... 10
Figure 7 - Subsurface Profile ..... 10
Figure 8 - Typical Retaining Wall Profile ..... 17

\section*{LIST OF TABLES}
Table 1 - Historical Ground Water Data ..... 7
Table 2 - Fault Zone, Distances and Maximum Earthquake Magnitudes ..... 11
Table 3-2013 California Building Code (CBC) Seismic Design Parameters ..... 12
Table 4 - WRI Parameters ..... 21
Table 5 - PTI Parameters ..... 21
Table 6 - AC Pavement Preliminary Design ..... 23
Table 7 - PCCP Pavement Preliminary Design ..... 24

\section*{INTRODUCTION}

This report presents the results of the geotechnical investigation/geoseismic evaluation conducted at the site of the proposed Temecula Valley Charter School. The site is located west of and adjacent to Winchester Road, approximately 625 feet south of Keller Road, in the French Valley area of Riverside County, California. The Assessor's Parcel Numbers for the property are 476-010-013 \& -059. The following references were provided for our use during this study.
- TVCS Site Plan and Floor Plan, dated July 6, 2016, prepared by WLC Architects.
- TVCS Aerial, dated June 17, 2016, prepared by WLC Architects.
- ALTA/NSPS Land Title Survey, 34155 Winchester Road, Winchester, Riverside County, California, dated June 14, 2016, prepared by O.K.O. Engineering, Inc.
- ALTA/NSPS Land Title Survey (with Topographic Survey), 34155 Winchester Road, Winchester, Riverside County, California, dated June 28, 2016, prepared by O.K.O. Engineering, Inc.

This report provides preliminary design parameters that may be applied to the proposed development on the site.

\section*{SCOPE OF SERVICES}

The purpose of this study was to provide geotechnical parameters for design and construction of the proposed project. The scope of the geotechnical services included:
- A review of the general geologic and subsurface conditions at the project site.
- An evaluation of the engineering and geologic data collected for the project site.
- Preparation of this report providing preliminary geotechnical engineering conc/usions and recommendations for design and construction.

The tasks performed to achieve these objectives included:
- Collection and review of geologic data relative to the site.
- Subsurface exploration to evaluate the nature and stratigraphy of the subsurface soils and to obtain representative samples for laboratory testing.
- A visual reconnaissance of the site and surrounding area to ascertain the presence of unstable or adverse geologic conditions.
- Laboratory testing of representative samples to evaluate the classification and engineering properties of the soils.
- Analysis of the data collected and the preparation of this report with preliminary geotechnical engineering conclusions and recommendations.

Evaluation of hazardous waste was not within the scope of services provided.
Evaluation of seismic hazards was based on field mapping, literature review and limited subsurface exploration. Because the site is not located in a defined active fault zone, a detailed review in this regard was not conducted.

\section*{PROJECT AND SITE DESCRIPTION}

The site is located in the northwesterly portion of Section 28, Township 6 South, Range 2 West, S.B.B.\&M. The site is located west of and adjacent to Winchester Road, approximately 625 feet south of Keller Road in the French Valley area of Riverside County, California. The Assessor's Parcel Numbers for the property are 476-010-013 \& -059. The project site occupies two parcels on approximately 14.6 acres. Most of the proposed charter school campus will be built on the easterly parcel (APN 476-010-059) that is currently vacant. The westerly parcel (APN 476-010-013) consists of a knoll that has been developed with single family residence, mobile home, and other outbuildings. The location of the project site is shown on Figure 1 below.

Figure 1: U.S.G.S. Topographic Maps, Winchester \& Bachelor Mt. 7.5' Quadrangles and Aerial Photograph (2014)


At the present time, the proposed school site is vacant. At the time of our field investigation the site had been recently disced. The site is bounded to the east by Winchester Road (State Route 79), to the north and west by rural property, and to the south by vacant land. A borrow ditch is present adjacent to the site along Winchester Road. Two concrete drainage structures are present beneath Winchester Road, near the northerly and southerly portions of the site.

The topography is slightly sloping with a gradient of approxiately 10 percent to the east-southeast. Based on the provided toographic map, elevations across the charter school site range from approximately 1,430 feet above mean sea level (msl) beneath the northwesterly corner of the site to approximately 1,410 feet msl near the southeasterly portion of the site. A shallow and broad drainage swale is present through the center-southern portion of the site, which drains toward the southerly culvert beneath Winchester Road. A review of historical aerial photographs indicates that this drainage swale was more pronounced in the past.

Based on the provided site plan and discussions with the architect, we understand that the proposed construction will consist of six structures located around a central courtyard. The buildings will be single-story wood-framed structures ranging in size from approximately 2,500 to 9,400 square feet. The total cumulative area of the campus buildings will be \(44,600 \mathrm{GSF}\). A paved parking area is planned on the easterly portion of the site. A fire lane is planned around the building complex. We understand that a stormwater retention system is tentatively planned on the easterly portion of the site. Grading is expected to consist of cuts and fills of less than five feet, exclusive of remedial over-excavation as recommended in this report.

\section*{GEOLOGIC SETTING}

Regional Geology: The subject site is situated within a natural geomorphic province in southwestern California known as the Peninsular Ranges, which is characterized by steep, elongated ranges and valleys that trend northwesterly. This geomorphic province encompasses an area that extends 125 miles, from the Transverse Ranges and the Los Angeles Basin, south to the Mexican border, and beyond another 795 miles to the tip of Baja California (Norris \& Webb, 1990; Harden, 1998). This province is believed to have originated as a thick accumulation of predominantly marine sedimentary and volcanic rocks during the late Paleozoic and early Mesozoic. Following this accumulation, in mid-Cretaceous time, the province underwent a pronounced episode of mountain building. The accumulated rocks were then complexly metamorphosed and intruded by igneous rocks, known locally as the Southern California Batholith. A period of erosion followed the mountain building, and during the late Cretaceous and Cenozoic time, sedimentary and subordinate volcanic rocks were deposited upon the eroded surfaces of the batholithic and pre-batholithic rocks.

Figure 2 below shows a portion of the C.D.M.G. Geologic Map of California, Santa Ana Sheet, (Scale 1:250,000), Southern California (Rogers, 1965) depicting the approximate location of the project site.

Figure 2: C.D.M.G., 1966, Geologic Map of California, Santa Ana Sheet, Scale 1:250,000.


Local Geology: More specifically, the site is situated along the central portion of the Perris Block, an eroded mass of Cretaceous and older crystalline rock. Thin sedimentary and volcanic units mantle the bedrock in a few places with alluvial deposits filling in the lower valley areas. The Perris Block is a structurally stable, internally unfaulted mass of crustal rocks bounded on the west by the Elsinore-Chino fault zones, on the east by the San Jacinto fault zone, and on the north by the Cucamonga fault zone (Woodford, et al., 1971). On the south, the Perris Block is bounded by a series of sedimentary basins that lie between Temecula and Anza (Morton and Matti, 1989).

According to Morton \& Kennedy (2003), the site is underlain by very old (middle to early Pleistocene age) alluvial valley deposits and Mesozoic age metamorphic bedrock (phyllite). The alluvial soils are described as well-indurated, reddish-brown, gravel, sand, silt and clay-bearing alluvium (map symbol Qvov). These soils are mapped on the northeasterly portion of the school site. The phyllite bedrock (map symbol Mzp) is mapped across the westerly and southeasterly portion of the school site.

Figure 3 below presents combined portions of the U.S.G.S. Preliminary Geologic Map of the Winchester 7.5' Quadrangle (Morton, 2003) and the Geologic Map of the Bachelor Mt. 7.5' Quadrangle (Morton \& Kennedy, 2003) depicting the mapped geologic units in the vicinity of the site.

Figure 3: U.S.G.S. Geologic Maps, Winchester 7.5' Quadrangle and Bachelor Mt. 7.5' Quadrangle (2003)


\section*{Qvov}

Very old alluvial valley deposits (middle to early Pleistocene)—Fluvial sediments deposited on broad canyon floors. Consists of moderately to well-indurated, reddish-brown, mostly very dissected gravel, sand, silt, and clay-bearing alluvium. In places, includes thin, discontinuous alluvial deposits of Holocene age

Phyllite (Mesozoic)—Fissle black phyllite. Commonly has sheen produced by very fine-grained white mica on s-surface; locally contains small elongate prisms of fine-grained white mica, which may be pseudomorphs after chiastolite

Groundwater: Groundwater was encountered within our exploratory boring B-08 at a depth of approximately 30 feet below the existing ground surface. Groundwater information pertinent to the alignment was derived from published California Department of Water Resources (DWR) historical groundwater level data and observation of groundwater conditions in borings drilled during this investigation.

Several historical groundwater records were located in the DWR database for wells in the vicinity of the project site. The State Well Number, depth to ground-water, date monitored, and coordinate locations of each of these wells are presented in Table 1 below:

Table 1: Historical Groundwater Data, Department of Water Resources
\begin{tabular}{|c|c|c|c|}
\hline \hline State Well No. & \begin{tabular}{c} 
Reported Depth to \\
Groundwater (ft.)
\end{tabular} & Date Monitored & \begin{tabular}{c} 
Coordinate Location \\
(NAD27)
\end{tabular} \\
\hline 06S02W21Q001S & 21 & \(1 / 1 / 68\) & \(117.0886 / 33.6298\) \\
\hline 06S02W28A002S & 13 & \(1 / 1 / 68\) & \(117.0875 / 33.6242\) \\
\hline 06S02W28G001S & 10 & \(1 / 1 / 68\) & \(117.0909 / 33.6217\) \\
\hline
\end{tabular}

The approximate locations of the wells reported by DWR are presented on the following U.S.G.S. topographic map for reference (Figure 4). It should be noted that the reported groundwater depths in the vicinity may not represent current conditions.

Figure 4: Location of Historical Groundwater Wells (DWR, 2014)


Surface Water: No indications of surface water (ponding, poor drainage, etc.) were observed on the site during the time of this study. Surface water at this site is controlled by the site topography. A review of the U.S.G.S. topographic map for this site indicates that the site drains to the east-southeast.

A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) website (FEMA, 2016), indicates that no specific current FIRM maps are printed for the subject property. The northerly portion of the property is located within Panel 06065C2090G, dated August 28, 2008. This panel indicates that the northerly portion of the project site is located in an area designated as "Zone X " described as "Areas of Minimal Flood Hazard". The southerly portion of the site lies within Panel 06065C2730G, labeled as Zone D. The Zone D designation is used for areas where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted. The designation of Zone \(D\) is also used when a community incorporates portions of another community's area where no map has been prepared (FEMA, 2013). Figure 5 below shows portions of the referenced panels.

Figure 5: FEMA Panel Nos. 06065C2090G and 06065C2730G, FEMA, 2008


Faulting: There are at least 38 major late Quaternary active/potentially active faults that are within a 100-kilometer radius of the site (Blake, 2000). Of these, there are no faults known to traverse the site, based on published literature, nor is there any photogeologic or surficial geomorphic evidence suggestive of faulting on the site. In addition, the site is not located within a State of California "Alquist-Priolo Earthquake Fault Zone" for fault rupture hazard (Hart and Bryant, 2007) or within a mapped County of Riverside fault zone.

The nearest known active fault is the Temecula segment of the Elsinore Fault Zone, which is approximately 62 kilometers in length and located approximately 12.0 kilometers to the southwest of the project site. This fault is a right-lateral, strike-slip fault capable of producing an earthquake with an estimated maximum moment magnitude of \(\mathrm{M}_{\mathrm{w}} 7.0\), and has an associated slip-rate of \(5 \mathrm{~mm} / \mathrm{yr}\). (U.S.G.S., 2008).

The Elsinore fault zone is a major dextral shear system, parallel to the southern San Andreas fault that accommodates about \(5 \mathrm{~mm} / \mathrm{yr}\). of the Pacific-North American Plate boundary slip. The northern elements of the fault zone, the Chino and Whittier faults, bound the Puente Hills, an uplifted block of Tertiary sediments. The Glen Ivy section forms the northeast boundary of the Santa Ana Mountains, and, together with the Temecula section, forms the Elsinore trough (Treiman, 1998). Other known regional active faults that could affect the site include the San Jacinto fault (San Jacinto, Anza, and San Bernardino segments) and San Andreas fault.

Figure 6 presents a portion of the 2010 Fault Activity Map of California (CGS, 2010) depicting the site location and mapped faults in the vicinity. This map indicates that no active faults are present on the site, or trending toward the site.

Figure 6: 2010 Fault Activity Map of California (CGS, 2010)


Fault along which historic (last 200 years) displacement has occurred

\section*{- - - -------2-}
\(\qquad\)

Holocene fault displacement (during past 11,700 years) without historic record.

Late Quaternary fault displacement (during past 700,000 years).

Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement.

According to the U.S.G.S. 2008 National Seismic Hazard Maps - Source Parameters (USGS, 2008), the major faults influencing the site, distances and maximum earthquake magnitudes are presented in Table 2.

Table 2: Fault Zone, Distances and Maximum Earthquake Magnitudes
\begin{tabular}{||l|c|c|c|}
\hline \multicolumn{1}{|c|}{ Fault Zone } & \begin{tabular}{c} 
Approximate \\
Distance (km)
\end{tabular} & \begin{tabular}{c} 
Earthquake \\
Magnitude (m \(\mathbf{w})\)
\end{tabular} & \begin{tabular}{c} 
Slip Rate \\
\(\mathbf{( m m / \mathbf { m } )}\)
\end{tabular} \\
\hline Elsinore-Temecula & 12.0 & 7.0 & 5 \\
\hline San Jacinto-San Jacinto Valley & 13.0 & 7.0 & 18 \\
\hline San Jacinto-Anza & 13.0 & 7.2 & 9 \\
\hline Elsinore-Glen Ivy & 14.5 & 6.8 & 5 \\
\hline
\end{tabular}

Our evaluation of the potential for surface fault rupture at this site included an examination of two non-stereo and ten stereo pairs of vertical black and white aerial photographs dating from 1949 to 2014 (see References for a listing) to aid in assessing the geologic and geomorphic characteristics with respect to the site and vicinity. The photogeologic analysis did not reveal indicators suggestive of active fault-related features. This included the lack of photolineations and/or no consistent tonal variations across the site, or trending toward the site.

Our review indicates that no documented active faults traverse toward the subject site, based on published literature. No surficial indications or geomorphic features were observed within the aerial photographs or field reconnaissance that are suggestive of active faulting.

Seismic Parameters: The site coordinates (NAD 83) are \(33.6247^{\circ} \mathrm{N} /-117.0967^{\circ} \mathrm{W}\). On the bases of the subsurface conditions and local fault characteristics, the 2013 California Building Code provides the following seismic design parameters as presented in Table 3.

Table 3: 2013 CBC Seismic Design Parameters
\begin{tabular}{|c|c|c|}
\hline Seismic Parameter & 2013 CBC / ASCE 7-10 Reference & Value \\
\hline Site Class & ---/ Table 20.3-1 & D \\
\hline \(\mathbf{S}_{\mathbf{s}}\) - Mapped Spectral Acceleration for Short Period & Fig. 1613.3.1(1) / Figure 22-1 & 1.500 \\
\hline \(\mathbf{S}_{1}\) - Mapped Spectral Acceleration for 1-sec Period & Fig. 1613.3.1(2) / Figure 22-2 & 0.600 \\
\hline \(\mathrm{F}_{\mathrm{a}}\) - Short Period Site Coefficient & Table 1613.3.3(1) / Table 11.4-1 & 1.0 \\
\hline \(\mathrm{F}_{\mathrm{V}}\) - Long Period Site Coefficient & Table 1613.3.3(2) / Table 11.4-2 & 1.5 \\
\hline \(\mathbf{S}_{\text {ms }}\) - Maximum Considered Earthquake Spectral Response Acceleration, \(5 \%\) damped, 0.2 -sec period, adjusted for Site Class & Eq. 16-37 / Eq. 11.4-1 & 1.500 \\
\hline \(\mathbf{S}_{\mathrm{M} 1}\) - Maximum Considered Earthquake Spectral Response Acceleration, 5\% damped, 1 -sec period, adjusted for Site Class & Eq. 16-38 / Eq. 11.4-2 & 0.900 \\
\hline \(\mathbf{S}_{\text {DS }}\) - Design Earthquake Spectral Response Acceleration, \(5 \%\) damped, \(0.2-\) sec period & Eq. 16-39 / Eq. 11.4-3 & 1.000 \\
\hline \(\mathbf{S}_{\mathrm{D} 1}\) - Design Earthquake Spectral Response Acceleration, 5\% damped, 1 -sec period & Eq. 16-40 / Eq. 11.4-4 & 0.600 \\
\hline MCE \(_{G}\) PGA - Maximum Considered Earthquake Geometric Mean for Site Class B & - - / Figure 22-7 & 0.503 \\
\hline PGA \({ }_{\text {M }}\) MCE \(_{\text {G }}\) PGA adjusted for Site Class & -- - / Eq. 11.8-1 & 0.503g \\
\hline Seismic Design Category & Sect. 1613A.3.5 & D \\
\hline
\end{tabular}

It is recommended that all structures be designed to at least meet the current California Building Code provisions in the latest CBC edition; however, it should be noted that the building code is intended as a minimum design condition and is often the maximum level to which structures are designed. Structures that are built to minimum code requirements are designed to remain standing after an earthquake in order for occupants to safely evacuate, but then may have to ultimately be demolished (Larson and Slosson, 1992).

It is the responsibility of both the property owner and project structural engineer to determine the risk factors with respect to using CBC minimum design values for the subject project. The previously-outlined CBC seismic classifications and data have been provided for use by the project structural engineer, to aid in evaluating design criteria, if needed. This information should be used to help select the appropriate seismic parameters, as outlined in the California Building Code (CBC, 2013). In addition, a site-specific seismic shear-wave study could also be performed to properly evaluate the soil profile type for site classification and seismic design purposes.

Secondary Seismic Hazards: The primary geologic hazard affecting the project is that of ground shaking. Secondary permanent or transient seismic hazards generally associated with severe ground shaking during an earthquake include, but are not necessarily limited to; ground rupture, liquefaction, seiches or tsunamis, landsliding, rockfalls, and seismically-induced settlement. These are discussed below:

Ground Rupture: Ground rupture is generally considered most likely to occur along pre-existing faults. Since there are no faults that are known to traverse the site, the potential for ground rupture is considered to be low.

Liquefaction and Seismically-Induced Settlement: In general, liquefaction is a phenomenon that occurs where there is a loss of strength or stiffness in the soils that can result in the settlement of buildings, ground failure, or other hazards. The main factors contributing to this phenomenon are: 1) cohesionless, granular soils having relatively low density (usually of Holocene age); 2) shallow ground water (generally less than 50 feet); and 3 ) moderate to high seismic ground shaking.

Due to the presence of medium dense to dense older alluvial soils underlain by relatively shallow metamorphic bedrock at the site (refer to SUBSURFACE CONDITIONS section), the results of our analysis indicate that the potential for liquefaction and seismically induced settlement is negligible.

Seiches/Tsunamis: A seiche is a standing wave in an enclosed or partially enclosed body of water. In order for a seiche to form, the body of water needs to be at least partially bounded, allowing the formation of the standing wave. Tsunamis are very large ocean waves that are caused by an underwater earthquake or volcanic eruption, often causing extreme destruction when they strike land.

There are no bodies of water on or adjacent to the project site. Based on the distance to large, open bodies of water and the elevation of the site with respect to sea level, it is our opinion that the potential of seiches/tsunamis does not present a hazard to this project.

Landsliding: Due to the relatively low-lying relief of the site and adjacent areas, the potential for landsliding due to seismic shaking is considered very low.

Rockfalls: Since no large rock outcrops are present on or adjacent to the site, the possibility of rockfalls during seismic shaking is nil.

Debris Flows: Debris flows are composed of a slurry-like mass of liquefied debris (ranging up to boulder size) that moves downhill under the force of gravity.

Such slurries are dense enough to support very large particles but not solid enough to resist flowing downhill. Debris flows are most common in steep mountain canyons when a mass of mud and debris becomes saturated during a heavy rainstorm and suddenly begins to flow down the canyons (Prothero \& Schwab, 1996). Based on the location of the site and the relatively planar topography of the property up-gradient of site, it is our opinion that the hazard of debris flow should be considered low.

Erosion: No indication of wind or water surface erosion was observed on the site or adjacent properties at the time of our study. It is our opinion that the hazard of erosion at this site should be considered low.

Other Geologic Hazards: There are other geologic hazards not necessarily associated with seismic activity that occur statewide. These hazards include; natural hazardous materials (methane gas, hydrogen-sulfide gas, tar seeps); Radon-222 Gas; regional subsidence, and naturally occurring asbestos. Of these hazards, there are none that appear to impact the site.

\section*{ENGINEERING GEOLOGY REVIEW CONCLUSIONS AND RECOMMENDATIONS}

\section*{Conclusions:}

\section*{1. Earth Materials}

Locally as mapped, the site is shown to be underlain by very old (middle to early Pleistocene) age alluvial valley deposits and Mesozoic age metamorphic bedrock (phyllite).

Exploratory borings conducted by our firm indicate that the site is underlain by a veneer of alluvial deposits overlying metamorphic bedrock (fissile phyllite). The alluvial deposits encountered range in thickness from approximately one (1) to 10 feet across the site. The soils are predominately comprised of fine-grained silty
clayey sand, clayey sand, and sandy clay in a generally loose (soft) to hard condition, with varying degrees of cementation. The upper foot (approximately) of the disced surficial soils are very loose. The underlying bedrock (phyllite) is highly to moderately weathered and generally in a hard condition. Some fracturing of the bedrock was observed.

\section*{2. Faulting}

No active faults are known to traverse the site. In addition, the site is not located within a designated Alquist-Priolo Earthquake Fault Zone for fault rupture hazards. The nearest "known" active fault is the Temecula segment of the Elsinore Fault Zone, located approximately 12.0 kilometers to the southwest of the project site.

\section*{3. Seismicity}

The primary geologic hazard that exists at the site is that of ground shaking. Several factors determine the severity of ground shaking at a given location, such as size of earthquake, length of fault rupture (if any), depth of hypocenter, type of faulting (dip slip/strike slip), directional attenuation, amplification, earth materials, and others. Due to the location of the site with respect to regional faulting and the recorded historical seismic activity, moderate to severe ground shaking should be anticipated during the life of the proposed facility.

\section*{4. Groundwater}

Groundwater was encountered within our exploratory boring B-08 at a depth of approximately 30 feet below the existing ground surface. Groundwater data reviewed during this study revealed the depth to historical high groundwater levels in the vicinity of the site is less than 20 feet beneath the existing ground surface. We have estimated a historical high groundwater level of 15 feet beneath the existing ground surface.

\section*{5. Secondary Seismic Hazards}

There do not appear to be any permanent or transient secondary seismic hazards that would affect the proposed school.

\section*{Recommendations:}
1. Following are the seismic design parameters determined in accordance with the California Building Code and ASCE-7:
\begin{tabular}{|l|c|}
\hline Parameter & Value \\
\hline \(\mathrm{S}_{\mathrm{Ds}}\) & 1.00 \\
\hline \(\mathrm{~S}_{\mathrm{D} 1}\) & 0.60 \\
\hline \(\mathrm{~S}_{\mathrm{MS}}\) & 1.50 \\
\hline \(\mathrm{~S}_{\mathrm{M} 1}\) & 0.90 \\
\hline Seismic Design Category & D \\
\hline
\end{tabular}
2. It is recommended that all structures be designed to at least meet the current California Building Code provisions in the latest CBC edition (2013); however, it should be noted that the building code is described as a minimum design condition and is often the maximum level to which structures are designed. Structures that are built to minimum code requirements are designed to remain standing after an earthquake in order for occupants to safely evacuate, but then may have to ultimately be demolished (Larson and Slosson, 1992). It is the responsibility of both the property owner and project structural engineer to determine the risk factors with respect to using CBC minimum design values for the facility.

\section*{SUBSURFACE CONDITIONS}

The results of our field and laboratory exploration and testing indicate that the site is underlain by a veneer of alluvial deposits overlying metamorphic bedrock (fissile phyllite). The alluvial deposits encountered range in thickness from approximately one (1) to 10 feet across the site. The soils are predominately comprised of fine-grained silty clayey sand (SC-SM), clayey sand (SC), and sandy clay (CL) in a generally loose/soft to hard condition, with varying degrees of cementation. The upper foot (approximately) of the disced surficial soil is very loose. The underlying bedrock (phyllite) is highly to moderately weathered and generally in a hard condition.

A typical profile is indicated below (Figure 7)


Consolidation testing indicates that the near surface alluvial soil is slightly to moderately compressible. One test indicates a moderate potential for saturation collapse.

The near surface alluvial soil is plastic and expansive. Expansion Index testing indicated an Expansive Index of 66 on representative soils.

Analytical testing indicates that sulfate concentrations are negligible. In accordance with ACl 318 , Table 4.2.1, the soil can be classified as Class S 0 with respect to sulfate exposure. Chloride concentrations are less than 100 parts per million. The soil is slightly alkaline with pH values of 7.8 to 8.2. Saturated resistivity values range from 1,600 to 2,600 ohm-cm.

Groundwater was encountered within our exploratory boring B-08 at a depth of approximately 30 feet below the existing ground surface. Groundwater data reviewed during this study revealed the depth to historical high groundwater levels in the vicinity of the site is less than 20 feet beneath the existing ground surface.

\section*{CONCLUSIONS AND RECOMMENDATIONS}

On the basis of our field and laboratory exploration and testing, it is our opinion that the proposed construction will be feasible from a geotechnical engineering standpoint. Existing site soils should be suitable for providing foundation support with appropriate recompaction, as recommended herein.

The primary issue requiring mitigation is the presence of expansive soils. Expansive soil design criteria are recommended for concrete slabs-on-grade.

Analytical testing indicates that sulfate concentrations are negligible. In accordance with ACl 318 , Table 4.2.1, the soil can be classified as Class S 0 with respect to sulfate exposure. Chloride concentrations are also low. The soil is slightly alkaline with pH values of 7.8 to 8.2 . Saturated resistivity values range from 1,600 to 2,600 ohm-cm, indicating that the soil is moderately corrosive with respect to buried ferrous metals. Inland Foundation Engineering, Inc. does not practice corrosion engineering. We recommend that a qualified corrosion engineer be consulted for additional guidance.

Groundwater was encountered within our exploratory boring B-08 at a depth of approximately 30 feet below the existing ground surface. Groundwater data reviewed during this study revealed the depth to historical high groundwater levels in the vicinity of the site is less than 20 feet beneath the existing ground surface.

The following paragraphs present more detailed design criteria which have been developed on the basis of our field and laboratory investigation.

Foundation Design: Foundations for the proposed charter school may consist of shallow spread footings with a slab-on-grade floor. For design, we recommend an allowable soil bearing capacity of 2,800 pounds per square foot. This value may be increased by \(1 / 3\) for short-term transient wind and seismic loads.

Conventional spread foundations should have a minimum width of 12 inches and should be founded a minimum depth of 24 inches beneath the lowest adjacent final grade. Building footings should be supported by at least 24 inches of compacted fill over suitably dense alluvial soils.

Static settlement of foundations properly designed and constructed as recommended herein is expected to be less than one inch total. Differential
settlement between foundations of similar size and load is expected to be less than one-half inch.

The site is underlain by expansive soil. The 2013 CBC requires that slab-ongrade foundations on expansive soils be designed in accordance with WRI/CRSI Design of Slab-on-Ground Foundations (1981) or PTI Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils (2012).
Recommended design parameters for use with these methods are presented in the "Concrete Slabs-on-Grade" section of this report.

If conventional slabs-on grade are utilized, they should be supported by at least four feet of imported non-expansive soil.

Lateral Design: Resistance to lateral loads will be provided by a combination of friction acting at the base of the slab or foundation and passive earth pressure. A coefficient of friction of 0.39 between soil and concrete may be used with dead load forces only. A passive earth pressure of 270 pounds per square foot, per foot of depth, may be used for the sides of footings poured against recompacted or dense native material. These values may be increased by \(1 / 3\) to provide for lateral loads of short duration such as those caused by wind or seismic forces. Passive earth pressure should be ignored within the upper one foot except where confined as beneath a floor slab, for example.

Trench Wall Stability: Significant caving did not occur within our exploratory borings. All excavations should be configured per with the requirements of CaIOSHA. We would classify the soils as Type C, per CaIOSHA criteria. The classification of the soil and the shoring and/or slope configuration should be the responsibility of the contractor on the basis of the trench depth and the soil encountered. The contractor should have a "competent person" on-site for the purpose of assuring safety within and about all construction excavations.

Retaining Walls: Retaining walls may be necessary during construction and/or landscaping. For on-site soils, the retaining walls should be designed for an active earth pressure equivalent to that exerted by a fluid weighing not less than 40 pounds per cubic foot (pcf).

For walls that are restrained, an "at-rest" lateral equivalent fluid pressure of 60 pounds per cubic foot is recommended, with the resultant applied at mid-height of the wall.

Any applicable construction and seismic surcharges should be added to the above pressures. Figure 8 shows a typical retaining wall profile.

Figure 8: Typical Retaining Wall Profile


Native Backfill
RETAINING WALL - TYPICAL PROFILE

At least 12 inches of granular material should be used in the backfill behind the walls and water pressure should not be permitted to build up behind retaining walls. The upper 12 to 18 inches of the backfill should consist of soil having a low permeability (less than \(10^{-6} \mathrm{~cm} / \mathrm{sec}\) ). All backfill should be non-expansive. A subdrain should be constructed along the base of the backfill. Typical recommended retaining wall backfill and drainage details are shown in the detail above.

Concrete Slabs-on-Grade: Our exploratory borings and laboratory testing indicate that potentially expansive soils are present throughout the project site and that expansive soil design criteria should be implemented for concrete slabs-on-grade. If conventional slabs-on grade are utilized, they should be supported by at least four feet of imported non-expansive soil.

The 2013 CBC requires that slab-on-grade foundations on expansive soils be designed in accordance with WRI/CRSI Design of Slab-on-Ground Foundations (1981) or PTI Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils (2012). The following table presents the design parameters for the WRI method (Table 4):

Table 4: WRI Parameters
\begin{tabular}{|c|c|c|}
\hline & & \\
Parameter & Reference & Value \\
\hline \(\mathrm{C}_{\circ}\) & WRI Figure 5 & 2.0 \\
\hline \(\mathrm{C}_{\mathrm{s}}\) & WRI Figure 4 & 1.0 \\
\hline \(\mathrm{C}_{\mathrm{w}}\) & WRI Figure 14 & 15 \\
\hline Effective PI & Laboratory Testing & 16 \\
\hline \(1-\mathrm{C}\) & WRI Figure 15 & 0.0 \\
\hline
\end{tabular}

PTI design criteria for the design of post-tensioned slabs are presented in the following table (Table 5):

Table 5: PTI Parameters
\begin{tabular}{|c|c|c|}
\hline \hline Parameter & Reference & Value \\
\hline pF & Figure 5.11 & 4.0 \\
\hline Thornthwaite Index & Figure A3 & -30 \\
\hline \(\mathrm{e}_{\mathrm{m}}\) edge lift & Figure 5.10 & 4.5 ft. \\
\hline \(\mathrm{y}_{\mathrm{m}}\) edge lift & Table 5.2 (a) & 1.0 in. \\
\hline \(\mathrm{e}_{\mathrm{m}}\) center lift & Figure 5.10 & \(9.0 \mathrm{ft}\). \\
\hline \(\mathrm{y}_{\mathrm{m}}\) center lift & Table 5.2 (a) & \(0.3 \mathrm{in}\). \\
\hline
\end{tabular}

All concrete slabs-on-grade should have a minimum thickness of four inches. During final grading and prior to the placement of concrete, all surfaces to receive concrete slabs-on-grade should be compacted to maintain a minimum compacted fill thickness of 12 inches.

Load bearing slabs may be designed using a modulus of subgrade reaction not exceeding 100 pounds per square inch per inch.

Slabs that are designed and constructed per the provisions of the American Concrete Institute (ACI) as a minimum will perform much better and will be more pleasing in appearance. Shrinkage of concrete should be anticipated. This will result in cracks in all concrete slabs-on-grade. Shrinkage cracks may be directed to saw-cut "control joints" spaced on the basis of slab thickness and reinforcement. ACl typically recommends control joint spacing in unreinforced concrete at maximum intervals equal to the slab thickness times 24. A level subgrade is also an important element in achieving some "control" in the
locations of shrinkage cracks. Control joints should be cut immediately following the finishing process and prior to the placement of the curing cover or membrane. Control joints that are cut on the day following the concrete placement are generally ineffective. The placement of reinforcing steel will help in reducing crack width and propagation as-well-as providing for an increase in the control joint spacing. The use of welded wire mesh has typically been observed to be of limited value due to difficulties and lack of care in maintaining the level of the steel in the concrete during placement. The addition of water to the mix to enhance placement and workability frequently results in an excessive water-cement ratio that weakens the concrete, increases drying times and results in more cracking due to concrete shrinkage during the initial cure.

Where slabs are to receive moisture sensitive floor coverings, we recommend the use of a vapor retarder. There are various products manufactured for this purpose. ASTM currently provides a standard water vapor permeance of 0.3 perms. Such materials would allow up to 18 gallons of water per week in a 50,000 square foot area. Therefore, it should be understood that these materials are not vapor "barriers". Some flooring applications may require more effective retarders. Therefore, the selection of the vapor retarder should be based upon the type of flooring material and is not considered to be a geotechnical engineering design parameter.

Vapor retarders should have a minimum thickness of 10-mil unless otherwise specified. It is possible that the retarders will be exposed to equipment loads such as ready-mix trucks, buggies, laser screeds, etc. In such cases, the thickness should be increased to at least 15 -mil. Vapor retarders should be placed between two 2-inch thick layers of sand to reduce the potential of punctures and to aid in the curing process. In lieu of this, the concrete may be placed directly upon the vapor retarder but should be designed with reinforcement to offset additional curling stresses. Seams and holes made for underground utilities should be properly sealed per the recommendations of the manufacturer.

The vapor retarder recommended in the preceding paragraphs is a common method of reducing the migration of moisture through the slab. It will not prevent all moisture migration through the slab nor will it prohibit the formation of mold or other moisture related problems. For moisture sensitive floor coverings, an expert in that field should be consulted to properly design a vapor retarder suitable for the specific application.

If concrete is to be placed on a dry absorptive subgrade in hot and dry weather, the subgrade should be dampened but not to a point that there is freestanding water prior to placement. The formwork and reinforcement should also be dampened.

Preliminary Pavement Design: Based on our test results, we have used an Rvalue of 13 to evaluate the preliminary structural pavement sections for the project. At the completion of rough grading, additional samples of the actual pavement subgrade soil should be obtained for R-value testing to confirm that the following recommended pavement sections are appropriate.

All surfaces to receive asphalt concrete paving should be underlain by a minimum compacted fill thickness of 12 inches (excluding aggregate base). This may be performed as described in the Site Grading Section of this report.

\section*{Asphalt Concrete Pavement}

Table 6 presents the recommended structural section designs based on current Caltrans design procedures.

\section*{Table 6: Preliminary AC Pavement Designs}
\begin{tabular}{||l|c|c|}
\hline Service & \begin{tabular}{c} 
Asphalt \\
Concrete \\
Thickness (ft.)
\end{tabular} & \begin{tabular}{c} 
Base Course \\
Thickness (ft.)
\end{tabular} \\
\hline Light traffic (autos, parking areas, T.I. =5.0) & 0.25 & 0.70 \\
\hline \begin{tabular}{l} 
Heavy traffic (trucks, driveways, bus lanes, \\
T.I. \(=7.0\) )
\end{tabular} & 0.30 & 1.20 \\
\hline
\end{tabular}

\section*{Portland Cement Concrete Pavement (PCCP)}

Table 7 presents the recommended PCCP structural sections for onsite parking and drive areas based on the American Concrete Institute Guide for Design and Construction of Concrete Parking Lots (ACI 330R-08).

Table 7: Preliminary PCCP Pavement Designs
\begin{tabular}{|l|c|c|}
\hline \multicolumn{1}{|c|}{ Service } & \begin{tabular}{c} 
PCCP \\
Thickness (in.)
\end{tabular} & \begin{tabular}{c} 
Class 2 Aggregate \\
Base Thickness (in.)
\end{tabular} \\
\hline \begin{tabular}{l} 
Car Parking Areas and Access \\
Lanes ADTT = 1 (Category A)
\end{tabular} & 4.5 & 4.0 \\
\hline \begin{tabular}{l} 
Bus Lanes and Parking \\
ADTT \(=25\) (Category B)
\end{tabular} & 5.5 & 4.0 \\
\hline
\end{tabular}

The concrete should have a minimum 28 -day modulus of rupture of 600 psi . This corresponds to a compressive strength of approximately \(4,500 \mathrm{psi}\). The Class 2 aggregate base should comply with current Caltrans requirements. The aggregate base should be compacted to at least 95 percent relative compaction based on ASTM D1557. The upper 12 inches of pavement subgrade soil, below the aggregate base, should also be compacted to a minimum relative compaction of 95 percent.

Construction joints should be sawcut in the pavement at a maximum spacing of 30 times the thickness of the slab, up to a maximum of 15 feet. Pavement sawcutting should be performed within 12 hours of concrete placement, preferably sooner. Sawcut depths should be equal to approximately \(1 / 4\) of the slab thickness for conventional saws or one inch when early-entry saws are utilized on slabs nine inches thick or less. Construction joints should not be placed near flow lines. The use of plastic strips for formation of jointing is not recommended. The use of expansion joints is not recommended, except where the pavement will adjoin structures.

General Site Grading: All grading should be performed in accordance with the applicable provisions of the 2013 California Building Code. The following recommendations have been developed on the basis of our field and laboratory testing:
1. Clearing and Grubbing: All surfaces to receive compacted fill and all building, slab and pavement areas should be cleared of existing loose soil, vegetation, debris, and other unsuitable materials. We recommend a minimum over-excavation of at least 24 inches below existing surface grades to provide assurance of root removal and to expose abandoned utility and irrigation lines. All abandoned underground utility lines should
be traced out and completely removed from the site. Soils which are loosened due to the removal of trees should be removed and replaced as controlled compacted fill.
2. Preparation of Surfaces to Receive Compacted Fill: All surfaces to receive compacted fill should be subjected to compaction testing prior to processing. Testing should indicate a relative compaction of at least 85 percent within the unprocessed native soils. If roots or other deleterious materials are encountered or if the relative compaction fails to meet the acceptance criterion, additional over-excavation will be required until satisfactory conditions are encountered. Upon approval, surfaces to receive fill should be scarified, brought to near optimum moisture content, and compacted to a minimum of 90 percent relative compaction.
3. Placement of Compacted Fill: Fill materials consisting of on-site soils or approved imported granular soils should be spread in shallow lifts and compacted at near optimum moisture content to a minimum of 90 percent relative compaction.
4. Preparation of Building Areas: Building areas for the charter school should be over-excavated to minimum depth of 24 inches below existing grades, or to the depth necessary to provide at least 12 inches of compacted fill below footing bottoms, whichever is deeper. The overexcavated area should extend outside of the exterior footing lines for a distance of at least five feet. The surface of the over-excavation should then be reviewed for compliance with the criteria of Item 2 under this section. Upon approval the surface should be scarified, brought to near optimum moisture content and compacted to a minimum of 90 percent relative compaction. The excavated material may then be replaced as controlled compacted fill.
5. Preparation of Slab and Paving Areas: During final grading and immediately prior to the placement of concrete or a base course, all surfaces to receive asphalt concrete paving, PCC paving or concrete slabs-on-grade should be processed and tested to assure compaction for a depth of at least of 12 inches. This may be accomplished by a combination of overexcavation, scarification and recompaction of the surface, and replacement of the excavated material as controlled compacted fill. Compaction of slab areas should be to a minimum of 90 percent relative
compaction. Compaction within proposed pavement areas should be to a minimum of 95 percent relative compaction for both the subgrade and base course.
6. Utility Trench Backfill: Utility trench backfill consisting of the on-site soil types should be placed by mechanical compaction to a minimum of 90 percent relative compaction. This is with the exception of the upper 12 inches under pavement areas where the minimum relative compaction should be 95 percent. Jetting of the native soils is not recommended.
7. Testing and Observation: During site grading, tests and observations should be performed to verify that the grading is being performed in accordance with the project specifications and the recommendations in this report. Field density testing should be performed in accordance with the ASTM D1556 or D6938 test method. The minimum acceptable degree of compaction should be 90 percent of the maximum dry density as obtained by the ASTM D1557 test method. Where testing indicates insufficient density, additional compactive effort should be applied until retesting indicates satisfactory compaction.

Testing should also be conducted to verify that the soils will not subject concrete to sulfate attack and are not corrosive. Testing of any proposed import soil will be necessary prior to placement on the site. Testing of onsite soils may be done on either a selective or random basis as site conditions indicate.

\section*{GENERAL}

The findings and recommendations presented in this report are based upon an interpolation of the soil conditions between boring locations. Should conditions be encountered during grading that appears to be different than those indicated by this report, this office should be notified.

We recommend that a pre-job conference be held on the site prior to the initiation of site grading. The purpose of this meeting will be to assure a complete understanding of the recommendations presented in this report as they apply to the actual grading performed.

This report was prepared for Temecula Valley Charter School for their use in the design of the Charter School Facility. This report may only be used by Temecula Valley Charter School for this purpose. The use of this report by parties or for other purposes is not authorized without written permission by Inland Foundation Engineering, Inc. Inland Foundation Engineering, Inc. will not be liable for any projects connected with the unauthorized use of this report.

The recommendations of this report are considered to be preliminary. The final design parameters may only be determined or confirmed at the completion of site grading on the basis of observations made during the site grading operation. To this extent, this report is not considered to be complete until the completion of both the design process and the site preparation.

\section*{REFERENCES}

ASCE/SEI, 2010, ASCE Standard 7-10, Minimum Design Loads for Buildings and Other Structures.

Blake, T.F. 1989-2000a, EQSEARCH, A Computer Program for the Estimation of Peak Horizontal Acceleration from Southern California Historical Earthquake Catalog, Version 3.00b.

Blake, T.F. 1998-2000, UBCSEIS, A Computer Program for the Estimation of Uniform Building Code Coefficients Using 3-D Fault Sources, Version 1.03.

California Building Standards Commission, 2013, California Building Code (CBC), California Code of Regulations, Title 24, Part 2, Volume 2.

California Division of Mines \& Geology (C.D.M.G.), 2000, Digital Images of Official Maps of Alquist-Priolo Earthquake Fault Zones of California, Southern Region, DMG CD 2000-003.

California Geological Survey (CGS), 2007, "Guidelines to Geologic/Seismic Reports," Note No. 42, Interim Revision 2007.

California Geological Survey (CGS), 2008, Guidelines for Evaluating and Mitigating Seismic Hazards in California, CGS Special Publication 117A.

California Geological Survey (CGS), 2002, "California Geomorphic Provinces", Note 36.

California Geological Survey (CGS), 2013, Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings, Note 48, October 2013.

Cao, T., Bryant, W.A., Rowshandel, B., Branum, D., and Wills, C.J., 2003, The Revised 2002 California Probabilistic Seismic Hazard Maps, June 2003, California Geological Survey.

Coduto, Donald, 2001, Foundation Design: Principles and Practice, Second Edition, Prentice Hall.

Dudley, Paul H., 1936, Physiographic History of a Portion of the Perris Block, Southern California, from "Journal of Geology," 1936, Volume 44, pp. 358-378.

Federal Emergency Management Agency (2016), FEMA Flood Map Service Center, http://msc.fema.gov/portal

Harden, D.R., 1998, California Geology: Prentice Hall, Inc.

Hart, E.W. and Bryant W., 1997, "Fault Rupture Hazard Zones in California," California Division of Mines \& Geology Special Publication 42.

Larson, R., and Slosson, J., 1992, The Role of Seismic Hazard Evaluation in Engineering Reports, in Engineering Geology Practice in Southern California, AEG Special Publication No. 4, pp. 191-194.

Lofgren, Ben E., 1976, Land Subsidence and Aquifer System Compaction in the San Jacinto Valley - A Progress Report, Journal Research, U.S. Geological Survey, Volume 4, No. 1, pp. 9-18, January-February 1976.

Morton, D.M. and Matti, J.C., 1989, A Vanished late Pliocene to early Pleistocene alluvial-fan complex in the north Perris block, southern California. In Conglomerates in Basin Analysis: A symposium Dedicated to A.O. Woodford, Pacific Section S.E.P.M., Vol. 62, pp. 73-80.

NCEDC, 2014, Northern California Earthquake Data Center. UC Berkeley Seismological Laboratory. Dataset. doi:10.7932/NCEDC.

Norris, R.M. and R.W. Webb, 1990, Geology of California (second edition).
Prothero, D.R., \& Schwab, F., 1996, Sedimentary Geology, an Introduction to Sedimentary Rocks and Stratigraphy.
U.S.G.S., 2016, U.S.G.S. DesignMaps Application, http://earthquake.usgs.gov/ designmaps/us/application.php

Treiman, J., compiler, 1998, Fault number 126d, Elsinore fault zone, Temecula section, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults, accessed 12/04/2015 12:10 PM.

Waring, G.A., 1919, Ground Water in the San Jacinto and Temecula Basins, California: U.S.G.S. Water Supply Paper 429.

Woodford, A., Shelton, J., Doehring, D., and Morton, R., 1971, Pliocene-Pleistocene History of the Perris Block, Southern California, Geological Society of America Bulletin, V. 82, pp. 3421-3448, 18 Figures, December, 1971.

Ziony, J.I., and Yerkes, R.F., 1985, Evaluating Earthquake and Surface Faulting Potential, in Evaluating Earthquake Hazards in the Los Angeles Region, U.S.G.S. Professional Paper 1360.

\section*{MAPS UTILIZED}

California Division of Mines \& Geology (C.D.M.G.), 2000, Digital Images of Official Maps of Alquist-Priolo Earthquake Fault Zones of California, Southern Region, DMG CD 2000-003.

California Division of Mines \& Geology (C.D.M.G.), 1966, Geologic Map of California, Santa Ana Sheet, Scale 1:250,000 (Second Printing 1973).

California Geological Survey (CGS), 2010, 2010 Fault Activity Map of California, Geologic Map No. 6.

Jennings, C.W., 1992, Preliminary Fault Activity Map of California, Scale 1:750,000, C.D.M.G. Open File Report 92-03.

Jennings, C.W., 1994, Fault Activity Map of California and Adjacent Areas, C.D.M.G. Geologic Data Map No. 6, 1:750,000 scale.

Morton, D.M. and Matti, J.C., 2005, Preliminary Geologic Map of the Hemet 7.5' Quadrangle, Riverside County, California.

Morton, D.M. and Kennedy, M.P., 2003, Geologic Map of the Bachelor Mt. 7.5' Quadrangle, U.S.G.S. Open File Report 03-103.

Morton, D.M., 2003, Preliminary Geologic Map of the Winchester 7.5' Quadrangle, U.S.G.S. Open File Report 03-188.

Riverside County Land Information System GIS Maps, 2016.
Rodgers, T.H., 1966, Geologic Map of California, Santa Ana Sheet, Scale 1:250,000 (Second Printing 1973).

Toppozada, T.R., et al., 2000, Epicenters of and Areas Damaged by M \(\geq 4\) California Earthquakes, Map Sheet 49, Scale 1"=25 Miles.

Waring, G.A., 1919, Map of San Jacinto and Temecula Basins, California.

Ziony, J.I., and Jones, L.M., 1989, Map Showing Late Quaternary Faults and 19781984 Seismicity of the Los Angeles Region, California, U.S.G.S. Miscellaneous Field Studies Map MF-1964.

\section*{AERIAL PHOTOGRAPHS UTILIZED}

Riverside County Flood Control District, 1949, Photo No. AXM-10F-61, April 23, 1949.
Riverside County Flood Control District, 1962, Photo Nos. 3-394 and 3-395, Scale 1 " = 2,000', January 30, 1962.

Riverside County Flood Control District, 1974, Photo Nos. 734 through 735, Scale 1" = 2,000', June 20, 1974.

Riverside County Flood Control District, 1980, Photo Nos. 763 and 764, Scale 1" = 2,000', May 4, 1980.

Riverside County Flood Control District, 1983, Photo Nos. 591 and 592, Scale 1" = 2,000', December 15, 1983.

Riverside County Flood Control District, 1990, Photo Nos. 15-24 and 15-25, Scale 1 " = 1,600', January 25, 1990.

Riverside County Flood Control District, 1995, Photo Nos. 15-21 and 15-22, Scale 1 " = 1,600', January 29, 1995.

Riverside County Flood Control District, 2000, Photo Nos. 15-24 and 15-25, Scale 1 " = 1,600', March 18, 2000.

Riverside County Flood Control District, 2005, Photo Nos. 15-22 and 15-23, Scale 1 " = 1,600', April 14, 2005.

Riverside County Flood Control District, 2010, Photo Nos. 15-23 and 15-24, Scale 1 " \(=\) 1,600', March 26, 2010.

Terrain Navigator, Orthophoto Map, Bachelor Mt. NW Quadrangle, CA, USGS Ref. Code 33117-E1-01-PHT, dated May 30, 2014.

\section*{APPENDIX A}

\section*{FIELD EXPLORATION}

For our field exploration, ten exploratory borings were excavated by means of a truck mounted rotary auger rig at the approximate locations shown on Figure No. A-13. Logs of the materials encountered were made on the site by a staff geologist. These are presented on Figure Nos. A-3 through A-12.

Representative relatively undisturbed samples were obtained within our borings by driving a thin-walled steel penetration sampler with successive 30-inch drops of a 140pound hammer. The number of blows required to achieve each six inches of penetration were recorded on our boring logs and used for estimating the relative consistencies of the subsoils. Two different samplers were used. The first sampler used was a Standard Penetration Sampler for which published correlations relating the number of hammer blows to the strength of the soil are available. The second sampler type was larger in diameter, carrying brass sample rings having inner diameters of 2.41 inches. Samples were placed in moisture sealed containers in order to preserve the natural soil moisture content. They were then transported to our laboratory for further observations and testing.

Representative bulk samples were obtained and returned to our laboratory for further testing and observations. The results of this testing are discussed and presented in Appendix B.


LOG OF BORING B-01



LOG OF BORING B-02



LOG OF BORING B-03
\begin{tabular}{|c|c|c|c|c|c|}
\hline Elevation: & 1414.0 & Date(s) Drilled: & 8/3/16 & Logged by: & DRL \\
\hline Drilling Method: & Rota & Auger & & Hammer Type: & Auto-Trip \\
\hline Drilling Rig: & & 75 & & Hammer Weight: & 140 lb . \\
\hline Boring Diameter: & & hes & & Hammer Drop: & 30-inches \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{} & \multirow[b]{2}{*}{} & \multirow[t]{2}{*}{\begin{tabular}{l}
SUMMARY OF SUBSURFACE CONDITIONS \\
This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.
\end{tabular}} & \multicolumn{2}{|l|}{SAMPLES} & \multirow[b]{2}{*}{} & \multirow[b]{2}{*}{} & \multirow[b]{2}{*}{} & \multirow[b]{2}{*}{} \\
\hline & & &  &  & & & & \\
\hline  &  & \begin{tabular}{l}
CLAYEY SAND, very fine- to coarse-grained, dark olive-brown (2.5Y 3/3), slightly moist, loose. \\
CLAYEY SAND, with gravel, very fine-grained, olive brown (2.5Y 4/3), slightly moist, dense. Well cemented. Blocky. \\
PHYLLITE BEDROCK, dark grayish-brown (2.5Y 4/2), slightly moist, hard. Moderately weathered. Fractured. Becomes less weathered with depth.
\end{tabular} &  &  & \begin{tabular}{l}
25 50/6" \\
50/4" \\
50/6" \\
50/6" \\
50/4"
\end{tabular} & 7
5
3
3 & 109
109 & \\
\hline & & End of boring at 16.5 feet. No groundwater encountered. & & & & & & \\
\hline  &  & LAND FOUNDATION ENGINEERING, INC. & \begin{tabular}{l}
Geot \\
Teme \\
Teme \\
Proje
\end{tabular} & cula cula, ct No & \[
\begin{aligned}
& \text { cal Inve } \\
& \text { Valley } \\
& \text { CA } \\
& \text {. T238- }
\end{aligned}
\] & & & \begin{tabular}{l}
ure No \\
I \\
A-5
\end{tabular} \\
\hline
\end{tabular}

LOG OF BORING B-04
\begin{tabular}{|c|c|c|c|c|c|}
\hline Elevation: & 1414.0 & Date(s) Drilled: & 8/2/16 & Logged by: & DRL \\
\hline Drilling Method: & Rota & Auger & & Hammer Type: & Auto-Trip \\
\hline Drilling Rig: & & E 75 & & Hammer Weight: & 140 lb . \\
\hline Boring Diameter: & & ches & & Hammer Drop: & 30-inches \\
\hline
\end{tabular}


LOG OF BORING B-05
\begin{tabular}{|c|c|c|c|c|c|}
\hline Elevation: & 1413.0 & Date(s) & 8/2/16 & Logged by: & DRL \\
\hline Drilling Method: & Rota & Auger & & Hammer Type: & Auto-Trip \\
\hline Drilling Rig: & & 75 & & Hammer Weight: & 140 lb . \\
\hline Boring Diameter: & & hes & & Hammer Drop: & 30-inches \\
\hline
\end{tabular}


LOG OF BORING B-06

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{\[
\begin{aligned}
& \mathbb{E} \\
& I \\
& \stackrel{I}{E} \\
& \stackrel{\rightharpoonup}{\Delta}
\end{aligned}
\]} & \multirow[b]{2}{*}{} & \multirow[b]{2}{*}{\[
\begin{aligned}
& 0 \\
& 0 \\
& 0
\end{aligned}
\]} & \multirow[t]{2}{*}{\begin{tabular}{l}
SUMMARY OF SUBSURFACE CONDITIONS \\
This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.
\end{tabular}} & \multicolumn{3}{|l|}{SAMPLES} & \multirow[b]{2}{*}{} & \multirow[b]{2}{*}{} & \multirow[b]{2}{*}{} & \multirow[b]{2}{*}{} \\
\hline & & & & 宸 &  &  & & & & \\
\hline \[
\begin{array}{|l} 
\\
\hline-5 \\
-10 \\
\hline-15
\end{array}
\] &  & SM & \begin{tabular}{l}
SILTY SAND, with clay, very fine- to fine-grained, olive-brown (2.5Y 4/3), slightly moist, loose. \\
PHYLLITE BEDROCK, dark gray ( \(2.5 \mathrm{Y} 3 / 1\) ), slightly moist, hard. Moderately weathered. Fractured in sample.
\end{tabular} &  & & \begin{tabular}{l}
SPT \\
SPT \\
SPT
\end{tabular} & \begin{tabular}{l}
32 50/5" \\
50/4" \\
50/5"
\end{tabular} & \begin{tabular}{l}
10 \\
6 \\
9
\end{tabular} & & \\
\hline & & & End of boring at 15.5 feet. No groundwater encountered. & & & & & & & \\
\hline  & & 㐱 & LAND FOUNDATION ENGINEERING, INC. & & & chni ula ula, t No & \begin{tabular}{l}
cal Inv \\
Valley \\
CA \\
T238
\end{tabular} & \begin{tabular}{l}
tigat harte \\
01
\end{tabular} & On Sc & \begin{tabular}{l}
ure No \\
A-8
\end{tabular} \\
\hline
\end{tabular}

LOG OF BORING B-07



LOG OF BORING B-08
\begin{tabular}{|c|c|c|c|c|c|}
\hline Elevation: & 1413.0 & Date(s) & 8/2/16 & Logged by: & DRL \\
\hline Drilling Method: & Rota & Auger & & Hammer Type: & Auto-Trip \\
\hline Drilling Rig: & & 75 & & Hammer Weight: & 140 lb . \\
\hline Boring Diameter: & & ches & & Hammer Drop: & 30-inches \\
\hline
\end{tabular}


LOG OF BORING B-09



LOG OF BORING B-10




\section*{APPENDIX B}

\section*{APPENDIX B}

\section*{LABORATORY TESTING}

Representative bulk and intact soil samples were obtained in the field and returned to our laboratory for additional observations and testing. Laboratory testing was generally performed in two phases. The first phase consisted of testing in order to estimate the compaction of the existing natural soil and the general engineering classifications of the soils across the site. This testing was performed in order to estimate the engineering characteristics of the soil and to serve as a basis for selecting samples for the second phase of testing. The second phase consisted of soil mechanics and analytical testing. This testing included consolidation testing, direct shear testing and testing to estimate the concentration of water-soluble sulfate, pH , chlorides and resistivity. These tests were performed in order to provide a means of developing specific design recommendations based on the strength characteristics of the soil.

\section*{CLASSIFICATION AND COMPACTION TESTING}

Unit Weight and Moisture Content: Each relatively undisturbed sample was weighed and measured in order to determine its unit weight. A small portion of each sample was then subjected to testing in order to determine its moisture content. This testing was performed in accordance with the ASTM Standards D2937 and D2216. This was used in order to estimate the dry density of the soil in its natural condition. The results of this testing are shown on the Boring Logs (Figure Nos. A-2 through A-12).

Maximum Density-Optimum Moisture Content: Representative soil types were selected for maximum density tests. This testing was performed in accordance with the ASTM D1557. The results of this testing are presented graphically on Figure No. B-4. The maximum density is compared to the field density of the soil in order to estimate the existing relative compaction to the soil.

Classification Testing: Four soil samples were selected for classification testing. This testing consists of mechanical grain size analyses and Atterberg Limits tests. This testing was performed in accordance with ASTM D422 and D4318. These tests provide information for developing classifications for the soil in accordance with the Unified Classification System. This classification system categorizes the soil into groups having similar engineering characteristics. The results of this testing are useful in detecting variations in the soils and in selecting samples for further testing. The results of this testing are presented on Figure No. B-5.

\section*{SOIL MECHANICS TESTING}

Direct Shear Testing: Two samples were selected for direct shear testing. This testing was performed in accordance with ASTM D3080. This testing measures the shear strength of the soil under various normal pressures and is used in developing parameters for foundation design and lateral design. Testing was performed using recompacted test specimens which were saturated prior to testing. Testing was performed using a strain controlled test apparatus with normal pressures ranging from 500 to 2500 pounds per square foot. The results of this testing are shown on Figure No. B-6.

Consolidation Testing: Two samples were selected for consolidation testing. This testing was performed in accordance with ASTM D2435. For this test, relatively undisturbed samples were selected and carefully trimmed into a one inch thick by 2.41inch diameter consolidometer. The consolidometer was moisture sealed in order to preserve the natural moisture content during the initial stages of testing. Loads ranging from 272 to 9,024 pounds per square foot were applied progressively with the rate of settlement declining to a value of 0.0002 inches per hour prior to the application of each subsequent load. At a preselected load, water was introduced into the consolidometer in order to observe the potential for saturation collapse. The results of this testing are presented graphically on Figure Nos. B-7 through B-8.

\section*{ANALYTICAL TESTING}

Two samples were selected to test the concentration of soluble sulfates, chlorides, pH level, and resistivity of and within the on-site soils. The following table presents the results of this testing:
\begin{tabular}{|c|c|c|c|c|c|}
\hline \begin{tabular}{c} 
Sample \\
Location
\end{tabular} & \begin{tabular}{c} 
Sample Depth \\
(ft.)
\end{tabular} & \begin{tabular}{c} 
Water-Soluble \\
Sulfates ( \(\square\) )
\end{tabular} & \begin{tabular}{c} 
Chlorides \\
(ppm)
\end{tabular} & \begin{tabular}{c} 
Minimum \\
Resistivity \\
(ohm-cm)
\end{tabular} & PH \\
\hline B-03 & \(1.0-4.5\) & \(<0.001\) & 90 & 2,600 & 7.8 \\
\hline B-05 & \(0.5-10.0\) & \(<0.001\) & 90 & 1,600 & 8.2 \\
\hline
\end{tabular}

Expansion Index Testing: Two samples were selected for expansion index testing per the current ASTM Standard D4829. This testing consists of remolding 4-inch diameter by 1 -inch thick test specimens to a moisture content and dry density corresponding to approximately 50 percent saturation. The samples are subjected to a surcharge of 144 pounds per square foot and allowed to reach equilibrium. At that point the specimens are inundated with distilled water. The linear expansion is then measured until complete. The results of this testing are shown below.
\begin{tabular}{|c|c|c|c|c|c|}
\hline \hline Sample & \begin{tabular}{c} 
Sample \\
Depth \\
(feet)
\end{tabular} & \begin{tabular}{c} 
Initial Dry \\
Density \\
(pcf)
\end{tabular} & \begin{tabular}{c} 
Initial Moisture \\
Content \\
\((\square)\)
\end{tabular} & \begin{tabular}{c} 
Expansion \\
Index
\end{tabular} & \begin{tabular}{c} 
Expansion \\
Class
\end{tabular} \\
\hline B-03 & \(1.0-4.0\) & 118.4 & 8.1 & 25 & Low \\
\hline B-05 & \(0.0-10.0\) & 112.0 & 10.2 & 66 & Med \\
\hline
\end{tabular}

\section*{GENERAL}

All laboratory testing has been conducted in conformance with the applicable ASTM test methods by personnel trained and supervised in conformance with our QA/QC policy. Our test data only relates to the specific soils tested. Soil conditions typically vary and any significant variations should be reported to our laboratory for review and possible testing. The data presented in this report are for the use of Temecula Valley Charter School only and may not be reproduced or used by others without written approval of Inland Foundation Engineering, Inc.

\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{3}{|r|}{Specimen Identification} & Classification & Max.Density & MC\% \\
\hline - & B-03 & 1.0 & CLAYEY SAND with GRAVEL SC & 131.0 & 9.0 \\
\hline \(\pm\) & B-05 & 0.0 & LEAN CLAY with SAND CL & 122.5 & 11.5 \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline \multicolumn{4}{|l|}{CT Geotechnical Investigation PR} & 0. \(\qquad\) & \\
\hline
\end{tabular}


GRADATION CURVES (ASTM D422, ASTM D4318)

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{3}{|r|}{Specimen Identification} & Classification & Phi & Cohesion & DD & MC\% \\
\hline \(\bullet\) & B-04 & 5.0 & CLAYEY SAND, SC & 45 & 0.210 & 113 & 9 \\
\hline \(\pm\) & B-07 & 2.5 & CLAY, CL & 38 & 0.070 & 102 & 12 \\
\hline & & & & & & & \\
\hline & & & & & & & \\
\hline & & & & & & & \\
\hline & & & & & & & \\
\hline & \multicolumn{2}{|l|}{PROJECT \(\frac{\text { Geotech }}{\text { Temecul }}\)} & School & \[
\begin{aligned}
& \text { OJEC } \\
& \text { DAT }
\end{aligned}
\] & \[
\mathrm{T} 23
\] & & \\
\hline \multicolumn{8}{|l|}{\begin{tabular}{l}
SHEAR TEST DIAGRAM (ASTM D3080) \\
Inland Foundation Engineering, Inc
\end{tabular}} \\
\hline
\end{tabular}





\section*{Appendix}

This page intentionally left blank.

\section*{Appendix E Paleontological Technical Study}

\title{
PALEONTOLOGICAL TECHNICAL STUDY: TEMECULA VALLEY CHARTER SCHOOL PROJECT, RIVERSIDE COUNTY, CALIFORNIA
}

\section*{Prepared for:}

\section*{Place works}

Jorge Estrada
Senior Associate
3 MacArthur Place, Suite 1100
Santa Ana, CA 92707

Prepared by:

Paleo Solutions, Inc.
911 S. Primrose Ave., Unit N
Monrovia, CA 91016
Geraldine@paleosolutions.com
(562) 818-7713


Geraldine Aron, M.S. - Principal Investigator


Joey R um, B.S. - Report Author


Courtney Richards, M.S. - Report Author


Date
3/1/17
Date
\(3 / 1 / 17\)
Date
3/1/2017
Date

PlaceWorks
Temecula Valley Charter School Project

This page intentionally left blank.

\section*{TABLE OF CONTENTS}
1.0 EXECUTIVE SUMMARY ..... 4
2.0 INTRODUCTION. ..... 6
2.1 Project Location. ..... 6
2.2 Project Background Description ..... 6
3.0 DEFINITION AND SIGNIFICANCE OF PALEONTOLOGICAL RESOURCES ..... 10
4.0 LAWS, ORDINANCES, REGULATIONS AND STANDARDS ..... 11
4.1 State and Local Regulatory Setting ..... 11
4.1.1 California Environmental Quality Act (CEQA) ..... 11
4.1.2 State of California Public Resources Code ..... 11
4.1.3 Riverside County General Plan. ..... 12
4.2 Permits ..... 12
5.0 METHODS ..... 12
5.1 Paleontological Analysis ..... 13
5.2 Paleontological Potential Classification Criteria ..... 13
6.0 GEOLOGY AND PALEONTOLOGY ..... 15
6.1 Literature Search ..... 15
6.1.1 Mesozoic Plutonic and Metasedimentary Units (Kgb, Kgd, Mzp) ..... 16
6.1.2 Pleistocene Very Old Alluvial Deposits (Qvova) ..... 16
6.1.3 Quaternary Young Alluvial Deposits (Qa, Qyaa) ..... 17
6.1.4 Artificial Fill (af). ..... 17
6.2 Paleontological Record Search Results ..... 19
7.0 FIELD SURVEY RESULTS ..... 22
7.1 Geology ..... 23
7.2 Paleontology ..... 23
8.0 RESOURCE ASSESMENT ..... 31
9.0 IMPACTS TO PALEONTOLOGICAL RESOURCES ..... 31
10.0 RECOMMENDATIONS ..... 31
REFERENCES. ..... 33
APPENIDX A ..... 35

\section*{FIGURES}
Figure 1. Project Location Map. ..... 8
Figure 2. Project Overview Map ..... 9
Figure 3. Project Geology Map. ..... 18
Figure 4. Overview of survey area from southeast end. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View northwest ..... 24
Figure 5. Overview of survey area from southeastern end of site. Mapped as Quaternary alluvium (Qa/Qvova) and Mesozoic phyllite (Mzp). View northeast. ..... 24
Figure 6. Overview of survey area from western end at Pourroy Road. Mapped as Pleistocene-age alluvium (Qvova). View east. ..... 25
Figure 7. Overview of northwestern site area which is situated on a low-moderate relief hill. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View northeast ..... 25
Figure 8. View of western end of site, which terminates at Pourroy Road. Adjacent hills composed ofplutonic/metamorphic rock. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite(Mzp). View west.26
Figure 9. Overview of northern end of survey area from the northeast corner. Mapped as Quaternary alluvium (Qa/Qvova) and Mesozoic phyllite (Mzp). View west. ..... 26
Figure 10. Quaternary alluvium consisting of medium to dark brown sandy silt. Mapped as Holocene-agealluvium (Qa). Very low relief washes. View north.27
Figure 11. Quaternary alluvium consisting of medium to dark brown sandy silt. Mapped as Holocene-age alluvium (Qa). View down. ..... 27
Figure 12. Quaternary alluvium consisting of medium to dark brown to gray sandy silt. Mapped as Holocene-age alluvium (Qa). View down. ..... 28
Figure 13. Quaternary alluvium consisting of reddish-brown sandy silt. Mapped as Pleistocene-age alluvium (Qvova). View down ..... 28
Figure 14. Quaternary alluvium consisting of reddish-brown sandy silt. Mapped as Pleistocene-age alluvium (Qvova). View down ..... 29
Figure 15. Metamorphic grade bedrock exposed in a rock cut along SR-79 adjacent to the southeastern corner of the survey site. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View northeast. ..... 29
Figure 16. Metamorphic grade bedrock exposed in a rock cut along SR-79 adjacent to the southeastern corner of the survey site. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View south ..... 30
Figure 17. Metamorphic grade bedrock exposed in a rock cut along SR-79 adjacent to the southeastern corner of the survey site. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View down. ..... 30

\section*{TABLES}

TABLE 1. TEMECULA VALLEY CHARTER SCHOOL PROJECT SUMMARY.......................... 6
TABLE 2. POTENTIAL FOSSIL YIELD CLASSIFICATION (BLM, 2016)................................... 13
TABLE 3. PALEONTOLOGICAL LITERATURE AND RECORDS SEARCH RESULTS........... 19

\subsection*{1.0 EXECUTIVE SUMMARY}

This report presents the results of the paleontological technical study conducted by Paleo Solutions, Inc. (Paleo Solutions) under contract to PlaceWorks in support of the Temecula Valley Charter School Project (Project). This work was required by the County of Riverside Planning Department to meet their requirement as the lead agency under the California Environmental Quality Act (CEQA), and as part of the Development Review Team (DRT) condition. All paleontological work was completed in compliance with CEQA, Riverside County guidelines, and best practices in mitigation paleontology. The Project is located at 34155 Winchester Road in the community of French Valley in unincorporated western Riverside County, California (see Figure 1). The Project area lies on the USGS Winchester (1953) and Bachelor Mountain (1951) California 7.5' topographic quadrangles on privately owned land in the northwest-northwest, northeastnorthwest, and southwest-northwest quarter quarters of Section 28, Township 6 South, Range 2 West (see Table 1; see Figure 2).

The Project area was evaluated based on an analysis of existing paleontological data and a field survey. The four components of the analysis included a geologic map review, a geotechnical report review, a literature search, institutional record searches. The analysis of existing data was supplemented with a pedestrian field survey, with the combined purpose of determining the paleontological potential of the Project area. Geologic mapping indicates that the Project area is primarily underlain by Mesozoic plutonic and metasedimentary rocks, Pleistocene very old alluvial valley deposits, and Quaternary young alluvial deposits (Morton and Kennedy, 2003; Dibblee and Minch, 2003; see Figure 3). It should be noted that the two geologic maps reviewed for the analysis differ on the age of the alluvial sediments in some portions of the Project area. Specifically, the northeast portion of the Project area is mapped as Holocene surficial sediments (Qa) by Dibblee and Minch, 2003, but is mapped as Pleistocene very old alluvial valley deposits (Qvova) by Morton and Kennedy, 2003).

According to the record search and literature search, there are no previously recorded fossil localities within the Project area; however, there are numerous other fossil localities recorded from Pleistocene-age sediments in southern California that are similar to those mapped in the Project area. The geotechnical report for the Project (Inland Foundation Engineering, Inc., 2016) indicates that Quaternary (Holocene or Pleistocene) sediments (which would have moderate paleontological potential if they are Pleistocene) will be impacted beginning at depths between one and two feet below the current ground surface. Additionally, the geotechnical report indicates that Mesozoic phyllite bedrock may be impacted as shallowly as one to ten feet deep. No paleontological resources were discovered during the field survey, although sediments conducive to fossil preservation were observed. Project activities may potentially result in significant adverse impacts to paleontological resources if these older alluvial sediments are encountered during excavation. Furthermore, the field survey did not resolve the Quaternary sediment age discrepancy in the two geologic maps (Dibblee and Minch, 2003 and Morton and Kennedy, 2003). Further investigation is therefore necessary to determine which mapped unit is correct and to ultimately determine the age of the Quaternary sediments underlying portions of the Project area.

The Potential Fossil Yield Classification (PFYC) system was applied to the results of the analysis of existing data and field survey. Pleistocene very old alluvium has moderate paleontological potential (PFYC Class 3). Holocene alluvium is estimated to be less than 10,000 years old, and has low paleontological potential (PFYC Class 2) because it is too young to contain in-situ fossils. However, these younger deposits may overlie older geologic units with higher paleontological potential which may be disturbed at depth. Fossils contained in artificial fill lack critical scientific information, and artificial fill is generally considered to have a low paleontological potential (PFYC Class 2). Mesozoic phyllite is formed high temperatures and pressures and will be devoid of recognizable fossils. Mesozoic phyllite therefore has a very low paleontological potential (PFYC Class 1).

Based on the ground disturbance necessary to complete the Project, there is potential for adverse impacts to scientifically significant paleontological resources within Pleistocene very old alluvial deposits underlying the thin veneer of Holocene soils or alluvial deposits within the Project area. Construction excavations which disturb Pleistocene-age sediments should be monitored by a professional paleontologist in order to reduce potential adverse impacts on scientifically important paleontological resources to a less than significant level. Prior to construction, a paleontological resources monitoring and mitigation plan (PRMMP) should be prepared. It should provide detailed recommended monitoring locations; a description of a worker training program; detailed procedures for monitoring, fossil recovery, laboratory analysis, and museum curation; a curation agreement; and notification procedures in the event of a fossil discovery by a paleontological monitor or other project personnel. Disturbance to Mesozoic-age phyllite should not be monitored. Because the Project area is nearly devoid of exposed sediments, the approximate ages (Holocene or Pleistocene) of the Quaternary deposits underlying the Project area could not be determined from the field survey. Additionally, the subterranean sediment descriptions provided in the geotechnical report are inconclusive for determining a Holocene versus Pleistocene age. Therefore, it is recommended that all excavations in all locations of the Project area be initially monitored for the presence of Pleistocene sediments and scientifically significant paleontological resources contained therein. If it is determined that only Holocene-age alluvium or Mesozoic-age phyllite is impacted, monitoring should be reduced or halted. Any potential fossils that are unearthed during construction should be evaluated by a professional paleontologist as described in the PRMMP.

\subsection*{2.0 INTRODUCTION}

This report presents the results of the paleontological technical study conducted by Paleo Solutions under contract to PlaceWorks in support of the Temecula Valley Charter School Project. This work was required by the County of Riverside Planning Department to meet their requirement as the lead agency under the CEQA, and as part of the Development Review Team (DRT) condition. All paleontological work was completed in compliance with CEQA, Riverside County guidelines, and best practices in mitigation paleontology.

\subsection*{2.1 Project Location}

The Project is located at 34155 Winchester Road in the community of French Valley in unincorporated western Riverside County, California (Figure 1). The site occupies two parcels of land totaling approximately 17.1 acres and is located primarily on vacant land. The Project is mapped on the USGS Winchester (1953) and Bachelor Mountain (1951) California 7.5' topographic quadrangles on privately owned land in the northwest-northwest, northeast-northwest, and southwest-northwest quarter quarters of Section 28, Township 6 South, Range 2 West (Table 1; Figure 2). The western portion is partially developed with several homes, a basketball court, a water well, above-ground storage tanks, and propane tanks. The eastern portion is vacant and has been recently graded. A partially paved road runs along the southern and eastern portions of the Project area and provides access from State Route (SR) 79. Geologic mapping of the Project indicates that the site is primarily underlain by Mesozoic plutonic and metasedimentary rocks, Pleistocene very old alluvial valley deposits, and Quaternary young alluvial deposits (Morton and Kennedy, 2003; Dibblee and Minch, 2003; Figure 3).

\subsection*{2.2 Project Background Description}

The Project proposes to construct a new charter school that would serve up to \(600 \mathrm{~K}-8\) students. Six buildings would be constructed, totaling approximately 45,000 square feet. Vehicular access and parking will be accommodated by the construction of a driveway at the southeast corner of the Project site, construction of Koon Street which would connect the Project site to the existing Pourroy Road, and construction of a parking lot consisting of 98 parking spaces. Additionally, athletic facilities including hardtop courts and a turf field will be constructed. Landscaping will include installation of trees, shrubs, and ground cover.

\section*{TABLE 1. TEMECULA VALLEY CHARTER SCHOOL PROJECT SUMMARY}
\begin{tabular}{|l|l|l|l|l|}
\hline Project Name & \multicolumn{1}{|l|}{\begin{tabular}{l} 
Temecula Valley Charter School Project \\
\hline Project Description
\end{tabular} \begin{tabular}{l} 
The Project proposes to construct six buildings totaling approximately 45,000 square feet, \\
a driveway, a new road (Koon Street) that will connect the site to Pourroy Road, and a \\
parking lot.
\end{tabular}} \\
\hline Project Area & \begin{tabular}{l} 
The Project area is located at 34155 Winchester Road in the community of French Valley \\
in unincorporated western Riverside County, California.
\end{tabular} \\
\hline Total Acreage & 17.1 acres & Section & Township & Range \\
\hline \multirow{3}{*}{\begin{tabular}{l} 
Location (PLSS) and \\
Land Ownership
\end{tabular}} & Quarter-Quarter & Land Ownership \\
\cline { 2 - 6 } & NWNW, NENW, SWNW & 28 & T6S & R2W \\
undetermined \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline Topographic Map(s) & \multicolumn{4}{|l|}{USGS Winchester (1953) and Bachelor Mountain (1951) California 7.5' quadrangles} \\
\hline Geologic Map(s) & \multicolumn{4}{|l|}{Geologic Map of the Winchester 7.5' quadrangle, Riverside County, California (Dibblee and Minch, 2003); Geologic Map of the Bachelor Mountain 7.5' quadrangle, Riverside County, California (Morton and Kennedy, 2003)} \\
\hline \multirow{7}{*}{\begin{tabular}{l}
Mapped Geologic \\
Formations and Age
\end{tabular}} & Formation & Map Symbol & Age & Paleontological
Sensitivity (PFYC) \\
\hline & Quaternary valley alluvial deposits & Qa & Holocene & 2 (Low) \\
\hline & Quaternary alluvial channel deposits & Qyaa & Holocene & 2 (Low) \\
\hline & Quaternary very old valley alluvial deposits & Qvova & Holocene to Pleistocene & 3 (Moderate) \\
\hline & Gabbro of the Peninsular Ranges batholith & Kgb & Cretaceous & 1 (Very Low) \\
\hline & Granodiorite, undifferentiated of the Peninsular Ranges batholith & Kgd & Cretaceous & 1 (Very Low) \\
\hline & Phyllite & Mzp & Mesozoic & 1 (Very Low) \\
\hline Permits & \multicolumn{4}{|l|}{No permits were required for the paleontological work conducted for this Project.} \\
\hline \begin{tabular}{l}
Previously \\
Documented Fossil \\
Localities within the \\
Project area
\end{tabular} & \multicolumn{4}{|l|}{The Western Science Center records search yielded no fossil localities recorded within a one-mile radius of the Project area (Appendix A).} \\
\hline Recommendations & \multicolumn{4}{|l|}{Construction excavations which disturb Pleistocene-age sediments should be monitored by a professional paleontologist in order to reduce potential adverse impacts on scientifically important paleontological resources to a less than significant level. Prior to construction, a paleontological resources monitoring and mitigation plan (PRMMP) should be prepared. It should provide detailed recommended monitoring locations; a description of a worker training program; detailed procedures for monitoring, fossil recovery, laboratory analysis, and museum curation; a curation agreement with the Western Science Center or another accredited repository; and notification procedures in the event of a fossil discovery by a paleontological monitor or other project personnel. Because the Project area is nearly devoid of exposed sediments, the approximate ages (Holocene or Pleistocene) of the Quaternary deposits underlying the Project area could not be determined from the field survey. Additionally, the subterranean sediment descriptions provided in the geotechnical report are inconclusive for determining a Holocene versus Pleistocene age. Therefore, it is recommended that all excavations in all locations of the Project area be initially monitored for the presence of Pleistocene sediments and scientifically significant paleontological resources contained therein. If it is determined that only Holocene-age alluvium or Mesozoic-age phyllite is impacted, monitoring should be reduced or halted. Any potential fossils that are unearthed during construction should be evaluated by a professional paleontologist as described in the PRMMP.} \\
\hline
\end{tabular}


Figure 1. Project Location Map.


Figure 2. Project Overview Map.

\subsection*{3.0 DEFINITION AND SIGNIFICANCE OF PALEONTOLOGICAL RESOURCES}

As defined by Murphey and Daitch (2007): "Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils' associated sedimentary matrix.

The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered non-renewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced. Fossils are important scientific and educational resources because they are used to:
- Study the phylogenetic relationships amongst extinct organisms, as well as their relationships to modern groups;
- Elucidate the taphonomic, behavioral, temporal, and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record;
- Reconstruct ancient environments, climate change, and paleoecological relationships;
- Provide a measure of relative geologic dating that forms the basis for biochronology and biostratigraphy, and which is an independent and corroborating line of evidence for isotopic dating;
- Study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time;
- Study patterns and processes of evolution, extinction, and speciation; and
- Identify past and potential future human-caused effects to global environments and climates."

Fossil resources vary widely in their relative abundance and distribution and not all are regarded as significant. According to the Bureau of Land Management (BLM) Instructional Memorandum (IM) 2009-011, a "Significant Paleontological Resource" is defined as:
"Any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be of scientific interest if it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has an identified educational or recreational value. Paleontological resources that may be considered not to have scientific significance include
those that lack provenience or context, lack physical integrity due to decay or natural erosion, or that are overly redundant or are otherwise not useful for research. Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities" (BLM, 2008)."

Vertebrate fossils, whether preserved remains or track ways, are classified as significant by most state and federal agencies and professional groups (and are specifically protected under Division 1 of the California Public Resources Code, Section 5020.1 [b]). In some cases, fossils of plants or invertebrate animals are also considered significant and can provide important information about ancient local environments. Assessment of significance is also subject to the CEQA criterion that the resource constitutes a "unique paleontological resource or site."

\subsection*{4.0 LAWS, ORDINANCES, REGULATIONS AND STANDARDS}

This section of the report presents the regulatory requirements pertaining to paleontological resources that will apply to this Project.

\subsection*{4.1 State and Local Regulatory Setting}

The following subsections describe the applicable state and local regulations.

\subsection*{4.1.1 California Environmental Quality Act (CEQA)}

The procedures, types of activities, persons, and public agencies required to comply with the California Environmental Quality Act (CEQA) are defined in the Guidelines for Implementation of CEQA (State CEQA Guidelines), as amended on March 18, 2010 (Title 14, Section 15000 et seq. of the California Code of Regulations [i.e., 14 CCR Section 15000 et seq.) and further amended January 4th, 2013. One of the questions listed in the CEQA Environmental Checklist is: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (State CEQA Guidelines Section 15064.5 and Appendix G, Section V, Part C).

\subsection*{4.1.2 State of California Public Resources Code}

The State of California Public Resources Code (Chapter 1.7), Sections 5097.5 and 30244, includes additional state level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, define the removal of paleontological "sites" or "features" from state lands as a misdemeanor, and prohibit the removal of any paleontological "site" or "feature" from State land without permission of the jurisdictional agency. These protections apply only to State of California land, and thus apply only to portions of the project, if any, which occur on State land.

\subsection*{4.1.3 Riverside County General Plan}

The Riverside County General Plan recommends that a paleontologist examine the sediments of Undetermined sensitivity to determine their sensitivity, defines a significant impact on paleontological resources, and requires monitoring of activities within High sensitivity areas that may affect paleontological resources. It also requires that a final report be submitted to the Riverside County Planning Department documenting the findings of the monitoring and mitigation work (County of Riverside, 2003). Riverside County General Plan recommendations are based on the Society of Vertebrate Paleontology (SVP) Guidelines.

The Multipurpose Open Space Element of the Riverside County General Plan provides the following requirements for paleontologically sensitive areas within the county:

OS 19.8 Whenever existing information indicates that a site proposed for development may contain biological, paleontological, or other scientific resources, a report shall be filed stating the extent and potential significance of the resources that may exist within the proposed development and appropriate measures through which the impacts of development may be mitigated.

OS 19.9 This policy requires that when existing information indicates that a site proposed for development may contain paleontological resources, a paleontologist shall monitor site grading activities, with the authority to halt grading to collect uncovered paleontological resources, curate any resources collected with an appropriate repository, and file a report with the Planning Department documenting any paleontological resources that are found during the course of site grading.

OS 19.10 Transmit significant development applications subject to CEQA to the San Bernardino County Museum (SBCM) for review, comment, and/or preparation of recommended conditions of approval with regard to paleontological resources.*
*The SBCM is not currently able to fulfil this role due to a change in the paleontology department staff.

\subsection*{4.2 Permits}

No permits were required for the paleontological work conducted for the Project.

\subsection*{5.0 METHODS}

This paleontological analysis of existing data included a geologic map review, a geotechnical report review, a literature search, an institutional record search, and a field survey. The goal of this report is to evaluate the paleontological potential of the Project area and make recommendations for the mitigation of adverse impacts on paleontological resources that may occur as a result of the proposed construction.

\subsection*{5.1 Paleontological Analysis}

Paleo Solutions reviewed two geologic maps of the Project area published by T.W. Dibblee and J.A. Minch (2003) and Morton and Kennedy (2003). The literature reviewed included published and unpublished scientific papers. A paleontological record search was conducted at the Western Science Center in Hemet, California. Darla Radford, M.A. performed the search. The results of the record search (dated January 18, 2017) are attached as Appendix A. Additional record searches of online databases were completed by Paleo Solutions staff. Joey Raum, B.S. conducted the field survey, performed the background research, and co-authored this report with Courtney Richards, M.S. Geraldine Aron, M.S. oversaw all aspects of the Project as the Paleontological Principal Investigator. Courtney Richards and Paul Murphey, Ph.D. performed the technical review of this report. GIS maps were prepared by Barbara Webster, M.S.

\subsection*{5.2 Paleontological Potential Classification Criteria}

The PFYC system was developed by the Bureau of Land Management (BLM, 2016). Because of its demonstrated usefulness as a resource management tool, the PFYC has been utilized for many years for projects across the country, regardless of land ownership. It is a predictive resource management tool that classifies geologic units on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential). This system is intended to aid in predicting, assessing, and mitigating paleontological resources. The PFYC ranking system is summarized in Table 2, along with the Riverside County guideline paleontological sensitivity rankings, which are included for a comparison of the two systems.

TABLE 2. POTENTIAL FOSSIL YIELD CLASSIFICATION (BLM, 2016) COMPARED
TO THE RIVERSIDE COUNTY GENERAL PLAN (2003).
\begin{tabular}{|c|c|c|}
\hline \begin{tabular}{l}
BLM PFYC \\
Designation
\end{tabular} & *Riverside County Paleontological Sensitivity & Assignment Criteria Guidelines and Management Summary (PFYC system) \\
\hline \multirow{4}{*}{\[
\begin{gathered}
1=\text { Very } \\
\text { Low } \\
\text { Potential }
\end{gathered}
\]} & \multirow{4}{*}{Low Sensitivity} & Geologic units are not likely to contain recognizable paleontological resources. \\
\hline & & Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units. \\
\hline & & Units are Precambrian in age. \\
\hline & & Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances. \\
\hline \multirow{6}{*}{\[
\begin{gathered}
2=\text { Low } \\
\text { Potential** }
\end{gathered}
\]} & \multirow{6}{*}{High B Sensitivity} & Geologic units are not likely to contain paleontological resources. \\
\hline & & Field surveys have verified that significant paleontological resources are not present or are very rare. \\
\hline & & Units are generally younger than 10,000 years before present. \\
\hline & & Recent aeolian deposits \\
\hline & & Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely \\
\hline & & Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances. \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline \begin{tabular}{l}
BLM PFYC \\
Designation
\end{tabular} & \begin{tabular}{l}
*Riverside County \\
Paleontological Sensitivity
\end{tabular} & Assignment Criteria Guidelines and Management Summary (PFYC system) \\
\hline \multirow{5}{*}{\begin{tabular}{l}
\[
3=
\] \\
Moderate Potential
\end{tabular}} & \multirow[b]{5}{*}{High A Sensitivity} & Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence. \\
\hline & & Marine in origin with sporadic known occurrences of paleontological resources. \\
\hline & & Paleontological resources may occur intermittently, but these occurrences are widely scattered \\
\hline & & The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate. \\
\hline & & Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources. \\
\hline \multirow{6}{*}{\begin{tabular}{l}
\[
4=\mathrm{High}
\] \\
Potential
\end{tabular}} & \multirow{6}{*}{High A Sensitivity} & Geologic units that are known to contain a high occurrence of paleontological resources. \\
\hline & & Significant paleontological resources have been documented but may vary in occurrence and predictability. \\
\hline & & Surface-disturbing activities may adversely affect paleontological resources. \\
\hline & & Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present. \\
\hline & & Illegal collecting activities may impact some areas. \\
\hline & & Management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot-checking may be necessary during land disturbing activities. Avoidance of known paleontological resources may be necessary. \\
\hline \multirow{5}{*}{\begin{tabular}{l}
5 = Very High \\
Potential
\end{tabular}} & \multirow{5}{*}{High A Sensitivity} & Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources. \\
\hline & & Significant paleontological resources have been documented and occur consistently \\
\hline & & Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities. \\
\hline & & Unit is frequently the focus of illegal collecting activities. \\
\hline & & Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and onsite monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered. \\
\hline \multirow{5}{*}{\begin{tabular}{l}
\[
\mathrm{U}=
\] \\
Unknown \\
Potential
\end{tabular}} & \multirow{5}{*}{Undetermined Sensitivity} & Geologic units that cannot receive an informed PFYC assignment \\
\hline & & Geological units may exhibit features or preservational conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is unknown. \\
\hline & & Geologic units represented on a map are based on lithologic character or basis of origin, but have not been studied in detail. \\
\hline & & Scientific literature does not exist or does not reveal the nature of paleontological resources. \\
\hline & & Reports of paleontological resources are anecdotal or have not been verified. \\
\hline
\end{tabular}
\begin{tabular}{|l|l|l|}
\hline \begin{tabular}{c} 
BLM PFYC \\
Designation
\end{tabular} & \begin{tabular}{c} 
*Riverside County \\
Paleontological \\
Sensitivity
\end{tabular} & \multicolumn{1}{|c|}{\begin{tabular}{c} 
Assignment Criteria Guidelines and Management \\
Summary (PFYC system)
\end{tabular}} \\
\hline \multirow{4}{*}{} & \multirow{3}{|c|}{\begin{tabular}{l} 
Area or geologic unit is poorly or under-studied. \\
\cline { 3 - 4 } \\
\end{tabular}} & \begin{tabular}{l} 
BLM staff has not yet been able to assess the nature of the \\
geologic unit.
\end{tabular} \\
\\
Untion \\
unknown potential have medium to high management \\
concerns. Field surveys are normally necessary, especially \\
prior to authorizing a ground-disturbing activity.
\end{tabular}
*Riverside County guidelines paleontological sensitivity rankings comparison to BLM PFYC rankings. This comparison does not denote an absolute correlation between the rankings.
**Sensitivity may increase with depth.

\subsection*{6.0 GEOLOGY AND PALEONTOLOGY}

The Peninsular Ranges Geomorphic Province is a region characterized by northwest-trending fault-bounded mountain ranges, broad intervening valleys, and low-lying coastal plains (Yerkes et al., 1965). The Peninsular Ranges extend approximately 920 miles from Los Angeles Basin to the southern tip of Baja California, and vary in width from approximately 30 to 100 miles. Bedrock units in the Peninsular Ranges include Jurassic-age igneous rocks of the Southern California Batholith (Yerkes et al., 1965). The Project area is situated in the central portion of the Perris Block, which is a fault-bounded block comprising part of the northern Peninsular Ranges; the block is bounded by the San Jacinto Fault on the east, the Elsinore-Chino Fault zones on the west, and the Cucamonga Fault on the north (Woodford et al., 1971). The Project area lies in a broad valley with interspersed hills that is bounded by the Santa Ana Mountains and the San Jacinto Mountains to the southwest and northwest, respectively. The Project area is underlain primarily by Holocene-age to Pleistocene-age sedimentary deposits and Mesozoic-age phyllite (Morton and Kennedy, 2003; Dibblee and Minch, 2003).

\subsection*{6.1 Literature Search}

Several published sources including geologic maps and scientific papers were reviewed for this study. Aerial imagery shows that the Project area surface is relatively flat and predominantly covered by native sediments and vegetation as well as unmapped artificial fill emplaced by previous construction projects. A review of the geologic maps (Morton and Kennedy, 2003; Dibblee and Minch, 2003) shows that the Project area is predominantly mapped as Pleistocene very old alluvial valley deposits (Qvova), Holocene alluvial valley deposits (Qa), and Mesozoic phyllite (Mzp) (Figure 3). For this study, the mapping by Dibblee and Minch (2003) was used in the Winchester USGS 7.5’ Topographic Quadrangle (northern Project area), and the mapping by Morton and Kennedy (2003) was used in the Bachelor Mountain 7.5' Topographic Quadrangle (southern Project area). A comparison of the two maps revealed differences in the interpreted ages of the Quaternary surficial sedimentary deposits. Specifically, the northeast portion of the Project area is mapped as Holocene surficial sediments (Qa) by Dibblee and Minch (2003), and Pleistocene very old alluvial valley deposits (Qvova) by Morton and Kennedy (2003). This significantly different geologic interpretation indicates further investigation will be needed to correctly determine the age of the sedimentary deposits underlying this portion of the Project area.

The paleontological sensitivity of the geologic units was determined using the PFYC system (see Section 5.2). The paleontological sensitivity rankings of each geologic unit crossed by the Project are listed in Table 1. The geographic distribution of the geologic units within the Project area is illustrated in Figure 3.

\subsection*{6.1.1 Mesozoic Plutonic and Metasedimentary Units (Kgb, Kgd, Mzp)}

Mesozoic-age rock units consist of hornblende gabbro (Kgb), biotite and hornblende-biotite granodiorite (Kgd), and phyllite (Mzp). Phyllite is mapped within the Project area in the central, northwest corner, and southeast corner. According to the geotechnical report (Inland Foundation Engineering, 2016), phyllite bedrock underlies the Quaternary alluvial sediments in the Project area between one and ten feet below the current ground surface. Additionally, gabbro ( Kgb ) is mapped west of the Project area, and granodiorite ( Kgd ) is mapped as two small slivers southwest of the Project area (Figure 3). Igneous rocks formed deep within the Earth's surface at high temperature and high pressure and lack fossil resources. Metamorphic rocks have been deformed by heat and pressure and will usually be devoid of recognizable fossil remains. Igneous and metamorphic rocks are therefore considered to have very low paleontological potential (Class 1) using the PFYC system and low sensitivity per Riverside County guidelines (2003).

\subsection*{6.1.2 Pleistocene Very Old Alluvial Deposits (Qvova)}

Pleistocene very old alluvial valley deposits (Qvova) comprise fluvial sediments deposited on broad canyon floors by ancient river and stream systems. These sediments were shed from adjacent mountain ranges during uplift associated with fault activity. Older alluvial sediments are heavily dissected and consist of moderately to well-indurated, reddish-brown, clay, silt, sand and gravel (Morton and Kennedy, 2003). Pleistocene very old alluvial deposits are mapped on the majority of the western Project area as well as the northeast corner (Figure 3).

Taxonomically diverse and locally abundant Pleistocene animals and plants have been collected from older alluvial deposits similar to those mapped in the Project area throughout southern California and include mammoth, mastodon, camel, horse, bison, giant ground sloth, peccary, cheetah, lion, saber tooth cat, capybara, dire wolf, and numerous taxa of smaller mammals (Jahns, 1954; Cooper and Eisentraut, 2002; Jefferson, 1991). Pleistocene very old alluvial deposits have moderate paleontological potential (Class 3) using the PFYC system and high (A) sensitivity per Riverside County guidelines (2003).

Pleistocene older alluvium has produced numerous Pleistocene-age vertebrate fossils in the Project vicinity as well as elsewhere in Riverside County (Cooper and Eisentraut, 2002; Jefferson, 1991; Springer et al., 2009). Most notable is the massive fossil collection recovered during excavation for Diamond Valley Lake, which is located northeast of the Project area. These sediments have yielded tens of thousands of fossils corresponding to the late Irvingtonian and early Rancholabrean North American Land Mammal Ages (Reynolds and Reynolds, 1990a; 1990b). The Diamond Valley Lake Local Fauna (DVLLF) is the largest open, non-asphaltic late Pleistocene fossil assemblage known in the southwestern United States (Springer et al., 2009). The assemblage comprises 2,646 localities and includes nearly 100,000 identifiable fossils representing more than 105 vertebrate, invertebrate, and plant taxa (Springer et al., 2009). Vertebrate fossils are generally
well-preserved and relatively complete and provide important data on the relative abundance and diversity of species through time at the given geographical location (Springer et al., 2009). A complete list of DVLLF taxa is provided in Table 3.

Furthermore, the Pauba Formation, which is geologically correlative with Pleistocene older alluvium, has produced numerous specimens of well-preserved fossil vertebrates of late Pleistocene age during excavations for a nearby housing development project in Temecula, Riverside County. These fossils were discovered during monitoring in 2004 and included scientifically significant specimens from six different taxa: Mammuthus columbi (mammoth), Equus spp. (horse), Bison antiquus (bison), cf. Camelidae (camel family), Rodentia (rodent family), and Serpentes (snake) (Table 3; SWCA, 2004).

\subsection*{6.1.3 Quaternary Young Alluvial Deposits (Qa, Qyaa)}

Quaternary young alluvial deposits (Qa, Qyaa) are Holocene-age (10,000 years ago - Recent) and are composed of gravel, sand, and clay that comprise valleys and alluvial fans. Quaternary deposits are poorly consolidated and represent sedimentation associated with current and former major rivers and streams. Generally rounded to well-rounded, these gravels are comprised of igneous and metamorphic rocks from the local mountains that have been washed downstream over time (Dibblee and Minch, 2003; Morton and Kennedy, 2003). The alluvium is covered with greyish colored soil. Quaternary valley alluvium \((\mathrm{Qa})\) is mapped in the northeast corner of the Project area, and alluvial channel deposits (Qyaa) are mapped southeast of the Project area.

Fossils are generally unknown from Holocene-age surficial deposits, due to their young age. Reworked fossils from older deposits may be present, but would not meet significance criteria as the fossils would lack critical contextual information. However, they may overlie older, paleontologically sensitive deposits at depth. Therefore, the Quaternary alluvium deposits are designated as having low paleontological sensitivity (Class 2) above four feet depth and are designated as having unknown paleontological potential (Class \(U\) ) below four feet depth using the PFYC system. These deposits have a high (B) sensitivity per Riverside County guidelines (2003).

\subsection*{6.1.4 Artificial Fill (af)}

Artificial fill (af) comprises recent deposits of previously disturbed sediments emplaced by construction operations and are found in areas where recent construction has taken place. Colors are highly variable and sediments are mottled in appearance. Although these materials may contain fossil resources, they have been removed from their original locations and lack significance. Artificial fill is not mapped in the Project area; however, the apparent preexisting surface disturbance in the vicinity suggests the presence of these materials comprising some of the surface of the Project area. Artificial fill (af) has low paleontological potential (Class 2) using the PFYC system and high (B) sensitivity per Riverside County guidelines (2003).


Figure 3. Project Geology Map.

\subsection*{6.2 Paleontological Record Search Results}

Paleo Solutions requested a paleontological search of records maintained by the Western Science Center in Hemet, California. The museum responded on January 18, 2017 that there were no localities within a one-mile radius of the Project area (Radford, 2017; Appendix A). However, numerous fossil localities have been recorded within five miles of the Project area (Table 3; see Section 6.1.2). Online database searches yielded numerous vertebrate fossil localities recorded from Pleistocene-age deposits within Riverside County including, mammoth, mastodon, camel, horse, bison, ground sloth, peccary, lion, saber-tooth cat, capybara, dire wolf, and rodent (UCMP, 2017; PBDB, 2017; Table 3).

TABLE 3. PALEONTOLOGICAL LITERATURE AND RECORDS SEARCH RESULTS
\begin{tabular}{|c|c|c|c|c|}
\hline Institutional Locality Number & Taxon & Common Name & Location & Source \\
\hline Not reported & Megalonyx jeffersonii & Jefferson's ground sloth & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Nothrotheriops shastensis & Shasta ground sloth & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Paramylodon harlani & giant ground sloth & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Canis dirus Canis latrans & dire wolf coyote & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Urocyon cinereoargenteus & grey fox & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & Ursus americanus & black bear & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & cf. Arctodus sp. & short-faced bear & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Smilodon fatalis & sabre-toothed cat & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Lynx rufus & bobcat & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Panthera leo atrox & North American lion & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Mammut americanum & American mastodon & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & Mammuthus columbi & Columbian mammoth & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & \begin{tabular}{l}
Equus occidentalis \\
Equus conversidens
\end{tabular} & extinct Western horse extinct small horse & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Platygonus compressus & extinct flat-headed peccary & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Camelops hesternus & extinct camel & Diamond Valley Lake & \[
\begin{gathered}
\text { Springer et } \\
\text { al., } 2009 \\
\hline
\end{gathered}
\] \\
\hline Not reported & Hemiauchenia macrocephala & extinct llama & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Odocoileus hemionus & mule deer & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Capromeryx minor & extinct dwarf pronghorn & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Antilocapra. americana & pronghorn & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Bison antiquus Bison latifrons & extinct ancient bison extinct long-horned bison & Diamond Valley Lake & Springer et al., 2009 \\
\hline
\end{tabular}

PlaceWorks
Temecula Valley Charter School Project
\begin{tabular}{|c|c|c|c|c|}
\hline Institutional Locality Number & Taxon & Common Name & Location & Source \\
\hline Not reported & Sylvilagus audubonii & Audubon's cotton-tailed rabbit & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Lepus californicus & jackrabbit & Diamond Valley Lake & Springer et
\[
\text { al., } 2009
\] \\
\hline Not reported & cf. Ammospermophilus sp. & antelope ground squirrel & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Eutamias sp. & chipmunk & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Spermophilus beecheyi Spermophilus sp. & Beechey's ground squirrel ground squirrel & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Thomomys bottae & Botta's pocket gopher & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Dipodomys sp. & kangaroo rat & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Perognathus sp. & large pocket mouse & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Reithrodontomys sp. & harvest mouse & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & cf. Peromyscus crinitus Peromyscus sp, & canyon mouse deer mouse & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & \begin{tabular}{l}
Neotoma fuscipes \\
Neotoma lepida
\end{tabular} & dusky-footed wood rat desert wood rat & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Microtus californicus & California meadow vole & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Mustela frenata & long-tailed weasel & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Mephitis sp. & striped or hooded skunk & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Taxidea taxus & badger & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Sorex ornatus & ornate shrew & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Scapanus latimanus & mole & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Myotis sp. & mouse-eared bat & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Anas sp. & duck & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Accipiter sp . Accipiter cooperi & hawk Cooper's hawk & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Aquila chrysaetos & golden eagle & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Falco sp. & falcon or kestrel & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Meleagris californica & extinct California turkey & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Callipepla californica & California quail & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Scolopacidae & indeterminate shore bird & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Asio sp. Asio flammeus & owl
short-eared owl & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Colaptes auratus & northern flicker & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & cf. Hirundo sp. & swallow & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Hirundinidae & indeterminate large-sized swallow & Diamond Valley Lake & Springer et al., 2009 \\
\hline
\end{tabular}

PlaceWorks
Temecula Valley Charter School Project
\begin{tabular}{|c|c|c|c|c|}
\hline Institutional Locality Number & Taxon & Common Name & Location & Source \\
\hline Not reported & Cyanocitta stelleri & Steller's jay & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Corvus corax & raven & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & cf. Turdus migratorius & American robin & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Corvidae & jay-sized blackbird magpie-sized blackbird & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & cf. Sturnella neglecta & Western meadowlark & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & Scaphiopus hammondi & Hammonds's spadefoot toad & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & cf. Bufo boreas & western toad & \begin{tabular}{l}
Diamond \\
Valley Lake
\end{tabular} & Springer et al., 2009 \\
\hline Not reported & cf. Hyla cadaverina & California tree frog & \begin{tabular}{l}
Diamond \\
Valley Lake
\end{tabular} & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Rana sp. & true frog & \begin{tabular}{l}
Diamond \\
Valley Lake
\end{tabular} & Springer et al., 2009 \\
\hline Not reported & Clemmys marmorata & Western pond turtle & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Gopherus agassizii & desert tortoise & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Iguanidae & \begin{tabular}{l}
indeterminate \\
"sceloporine" iguana
\end{tabular} & \begin{tabular}{l}
Diamond \\
Valley Lake
\end{tabular} & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Phrynosoma coronatum & coast horned lizard & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Cnemidophorus tigris & Western whiptail lizard & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & Crotaphytus collaris & collared lizard & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & Gerrhonotus sp. & alligator lizard & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Sceloporus occidentalis cf. Sceloporus graciosus & Western fence lizard sagebrush lizard & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Uta stansburiana & side-blotched lizard & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & cf. Lampropeltis sp. & king snake & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & Masticophis sp. & whip snake & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Pituophis melanoleucus & gopher snake & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Tantilla sp. & black-head snake & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Thamnophis sp. & garter snake & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Crotalus sp. Crotalus cerastes & rattlesnake sidewinder & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & Caudata & indeterminate salamander & \begin{tabular}{l}
Diamond \\
Valley Lake
\end{tabular} & Springer et al., 2009 \\
\hline Not reported & Ostracoda & ostracodes & \begin{tabular}{l}
Diamond \\
Valley Lake
\end{tabular} & Springer et al., 2009 \\
\hline Not reported & Isoptera & indeterminate termites & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Coleoptera & indeterminate beetles & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Pelecypoda & indeterminate bivalves & Diamond Valley Lake & Springer et al., 2009 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline Institutional Locality Number & Taxon & Common Name & Location & Source \\
\hline Not reported & Deroceras sp. & slug & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Discus whitneyi & forest disc snail & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Succinea avara & amber snail & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Pupilla muscorum & widespread column snail & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Vertigo sp. & vertigo snail & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Vallonia cyclophorella Vallonia gracilicosta & silky vallonia snail multi-rib vallonia snail & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Fossaria parva & pygmy fossaria snail & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Physa sp. & freshwater snail & Diamond Valley Lake & \begin{tabular}{l}
Springer et \\
al., 2009
\end{tabular} \\
\hline Not reported & Gyraulus circumstriatus Gyraulus parvus & disc gyro snail ash gyro snail & Diamond Valley Lake & Springer et al., 2009 \\
\hline Not reported & Helisoma tenue & rams-horn snail & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & Valvata humeralis & glossy valvata snail & Diamond
Valley Lake & Springer et al., 2009 \\
\hline Not reported & \begin{tabular}{l}
Mammuthus columbi \\
Equus spp. \\
Bison antiquus \\
cf. Camelidae \\
Rodentia \\
Serpentes
\end{tabular} & mammoth horse bison camel rodent snake & Temecula & SWCA, 2004 \\
\hline Not reported & \begin{tabular}{l}
Mammuthus Mammut Camelidae Equidae Bison \\
Megatherium \\
Tayassuidae \\
Acinonyx \\
Panthera \\
Smilodon \\
Hydrochoerus Canis dirus Rodentia
\end{tabular} & mammoth
mastodon
camel
horse
bison
giant ground sloth
peccary
cheetah
lion
saber-tooth cat
capybara
dire wolf
rodent & Riverside County & \begin{tabular}{l}
Jahns, 1954; \\
Cooper and \\
Eisentraut, 2002; \\
Jefferson, 1991; UCMP, 2017; PBDB, 2017
\end{tabular} \\
\hline
\end{tabular}

\subsection*{7.0 FIELD SURVEY RESULTS}

A paleontological field survey was conducted on February 2, 2017 by Paleo Solutions staff member Joey Raum, B.S. The survey was conducted after a review of aerial photographs indicated that the Project area included areas of undisturbed native sediment. The pedestrian survey was conducted to look for and record any fossil resources that may already be exposed onsite and to inspect sediment and bedrock exposures in an effort to resolve the discrepancies between the two geologic maps (Dibblee and Minch, 2003; Morton and Kennedy, 2003) reviewed for this analysis (see Section 6.1). This included close inspection and documentation of sediment and bedrock outcrops. Reference points were acquired using a Trimble GPS unit. Sediment and bedrock
lithologies were recorded and analyzed and used to better interpret the Project paleontological sensitivity, and thus better understand the Project potential impact.

The survey area is accessible from the eastern and western ends from SR-79 and Pourroy Road, respectively. The survey area terrain is relatively flat and low lying and is adjacent to low-moderate to moderate relief hills situated to the south, west, and north (FiguresFigure 4,Figure 5, andFigure 6). The largest adjacent hill is situated west of the survey area (FiguresFigure 8 andFigure 4). The western and southwestern ends of the site lie at a slightly higher elevation than the rest of the site. Located on the highest point in the western-central area is a house (FiguresFigure 4 andFigure 7). West of the survey area are moderately developed residential areas including houses and graded unpaved roads. The survey area has minor infrastructures, although the surface has been heavily disturbed by recent agricultural use.

\subsection*{7.1 Geology}

Sediments consists of poorly consolidated Quaternary (Holocene or Pleistocene) alluvium, which is mostly disturbed by previous agricultural use and other grading activities. Exposures are sparse and limited to patches of ground surface where grass cover is thin. Sediments exposed near the northeastern corner of the survey area include surface alluvium consisting of well to moderately sorted, medium to dark brown to gray, sandy silt and angular to subangular granule to small cobble size clasts of metamorphic and plutonic origin. No sediment profiles are exposed onsite; however, very low relief washes lie along the eastern boundary adjacent to SR-79, particularly near the northeastern corner (FiguresFigure 9,Figure 10,Figure 11, andFigure 12). Sediments are similar across the site, although more reddish-brown colored material was observed in the south-central area (FiguresFigure 7,Figure 13, andFigure 14). Reddish colored (oxidized) sediments are often indicative of older Pleistocene-age alluvium, which is potentially conducive to fossil preservation. Although sediment and bedrock exposures are limited onsite, there is a road cut along SR-79 that lies adjacent to the southeast corner. The road cut exposes very hard metamorphic grade bedrock (FiguresFigure \(\mathbf{1 5}\),Figure 16, andFigure 17). The proximity of the road cut to the survey site implies that these metamorphic rocks underlie, in part, much of the low to moderate relief hills in the southwestern end of the site. Additionally, the moderate relief hills in the surrounding region appear to be dominantly composed of hard bedrock, either or plutonic or metamorphic origin. Furthermore, the angularity of the surface pebbles and cobbles (Figure 12) implies relatively close sediment transport, which suggests that material was derived from the surrounding hills and mountains. Due to the limited exposures of Quaternary (Holocene or Pleistocene) alluvium observed during the field survey, a definitive age determination could not be made.

\subsection*{7.2 Paleontology}

No paleontological resources were observed or collected during the survey. Although sediments conducive to fossil preservation were observed.


Figure 4. Overview of survey area from southeast end. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View northwest.


Figure 5. Overview of survey area from southeastern end of site. Mapped as Quaternary alluvium (Qa/Qvova) and Mesozoic phyllite (Mzp). View northeast.


Figure 6. Overview of survey area from western end at Pourroy Road. Mapped as Pleistocene-age alluvium (Qvova). View east.


Figure 7. Overview of northwestern site area which is situated on a low-moderate relief hill. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View northeast.


Figure 8. View of western end of site, which terminates at Pourroy Road. Adjacent hills composed of plutonic/metamorphic rock. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View west.


Figure 9. Overview of northern end of survey area from the northeast corner. Mapped as Quaternary alluvium (Qa/Qvova) and Mesozoic phyllite (Mzp). View west.


Figure 10. Quaternary alluvium consisting of medium to dark brown sandy silt. Mapped as Holocene-age alluvium (Qa). Very low relief washes. View north.


Figure 11. Quaternary alluvium consisting of medium to dark brown sandy silt. Mapped as Holocene-age alluvium (Qa). View down.


Figure 12. Quaternary alluvium consisting of medium to dark brown to gray sandy silt. Mapped as Holocene-age alluvium (Qa). View down.


Figure 13. Quaternary alluvium consisting of reddish-brown sandy silt. Mapped as Pleistocene-age alluvium (Qvova). View down.


Figure 14. Quaternary alluvium consisting of reddish-brown sandy silt. Mapped as Pleistocene-age alluvium (Qvova). View down.


Figure 15. Metamorphic grade bedrock exposed in a rock cut along SR-79 adjacent to the southeastern corner of the survey site. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View northeast.


Figure 16. Metamorphic grade bedrock exposed in a rock cut along SR-79 adjacent to the southeastern corner of the survey site. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View south.


Figure 17. Metamorphic grade bedrock exposed in a rock cut along SR-79 adjacent to the southeastern corner of the survey site. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View down.

\subsection*{8.0 RESOURCE ASSESMENT}

The PFYC system was applied to the results of the analysis of existing data. Pleistocene very old alluvium has moderate paleontological potential (PFYC Class 3). Holocene young alluvium is estimated to be less than 10,000 years old, and has low paleontological potential (PFYC Class 2) because it is too young to contain in-situ fossils. However, these younger deposits often overlie older geologic units with higher paleontological potential which may be disturbed at depth. Fossils contained in artificial fill lack critical scientific information, and artificial fill is generally considered to have low paleontological potential (PFYC Class 2). Igneous and metamorphic rock units, which are formed under high temperatures and/or pressures, are devoid of scientifically significant fossils and are considered to have very low paleontological potential (PFYC Class 1).

\subsection*{9.0 IMPACTS TO PALEONTOLOGICAL RESOURCES}

Direct impacts to paleontological resources concern the physical destruction of fossils, usually by human-caused ground disturbance. Indirect impacts to paleontological resources typically concern the loss of resources to theft and vandalism resulting from increased public access to paleontologically sensitive areas. Cumulative impacts to paleontological resources concern the incremental loss of these nonrenewable resources to society as a whole.

Surface grading or shallow excavations entirely within Holocene young alluvial deposits in the Project area are unlikely to uncover significant fossil vertebrate remains. However, older deposits may be present immediately below a thin veneer of Holocene soils or alluvium. The geotechnical boring logs show Quaternary (Holocene and Pleistocene) sediments one foot beneath the ground surface and extending to a maximum depth of ten feet. Excavations in the Project area that extend down into very old sedimentary deposits may well impact scientifically important paleontological resources. Excavations entirely within previously disturbed sediments or artificial fill are unlikely to uncover significant fossil vertebrate remains; furthermore, any recovered resources will lack stratigraphic context. However, these deposits may shallowly overlie older in-situ sedimentary deposits. Excavations into Mesozoic phyllite, expected to be encountered starting at relatively shallow depths of one to ten feet below the current ground surface (Inland Foundation Engineering, Inc. 2016), will not impact scientifically significant fossils, although the overlying sediments may contain resources. Therefore, grading and other earthmoving activities may potentially result in significant direct impacts to paleontological resources throughout the entirety of the Project area.

\subsection*{10.0 RECOMMENDATIONS}

Based on the ground disturbance necessary to complete the Project, there is the potential for adverse impacts to scientifically significant paleontological resources within Pleistocene very old alluvial deposits underlying a thin veneer of Holocene soils or alluvial deposits within the Project area. Construction excavations which disturb Pleistocene-age sediments should be monitored by a professional paleontologist in order to reduce potential adverse impacts on scientifically important paleontological resources to a less than significant level. Prior to construction, a paleontological resources monitoring and mitigation plan (PRMMP) should be prepared. It should provide detailed recommended monitoring locations; a description of a worker training program; detailed procedures for monitoring, fossil recovery, laboratory analysis, and museum curation; a curation
agreement with the Western Science Center or another accredited repository; and notification procedures in the event of a fossil discovery by a paleontological monitor or other project personnel. Because the Project area is nearly devoid of exposed sediments, the approximate ages (Holocene or Pleistocene) of the Quaternary deposits underlying the Project area could not be determined from the field survey. Additionally, the subterranean sediment descriptions provided in the geotechnical report are inconclusive for determining Holocene or Pleistocene ages. Therefore, it is recommended that excavations in all locations of the Project area be initially monitored for the presence of paleontologically sensitive sediments. If it is determined that only Holocene-age alluvium (PFYC Class 2) or Mesozoic-age phyllite (PFYC Class 1) is impacted, monitoring will be reduced or halted. Any potential fossils that are unearthed during construction should be evaluated by a professional paleontologist as described in the PRMMP.

\section*{REFERENCES}

Bureau of Land Management (BLM). 2008. Assessment and Mitigation of Potential Impacts to Paleontological Resources: BLM Instruction Memorandum No. 2009-011.

Bureau of Land Management (BLM). 2016. Potential Fossil Yield Classification system: BLM Instruction Memorandum No. 2016-124 (PFYC revised from USFS, 2008).

Cooper, J. D. and P.J. Eisentraut. 2002. Orange County Archaeo/Paleo Curation Draft Guidelines, Procedures and Policies - Draft Document. Prepared for County of Orange, Board of Supervisors.

County of Riverside. 2003. General Plan. Available at: http://www.rctlma.org/genplan/
Davis, S.N. and F.R. Hall. 1959. Water quality of eastern Stanislaus and northern Merced Counties, California: Standfor University. Pubs. Geol. Sci., v.6, no. 1, 112 p.

Dibblee, T.W. and J.A. Minch. 2003. Geologic map of the Winchester quadrangle, Riverside County, California. Dibblee Geological Foundation Map DF-117, (scale 1:24,000).

Inland Foundation Engineering, Inc. 2016. Geotechnical Investigation Proposed Charter School Site 34155 Winchester Road, French Valley Area, Riverside County, California. Prepared for Temecula Valley Charter School, Dated 9 September 2016, pp. 3-A12.

Jahns, R.H. 1954. Geology of Southern California. State of California, Department of Natural Resources, Bulletin 170, Volume 1.

Janda, R. J. 1965. Quaternary alluvium near Friant, California: International Association Quaternary Research Guidebook for Field Conference I, northern Great Basin and California, p. 128-133.

Jefferson, G.T. 1991. A Catalogue of late Quaternary Vertebrates from California: Part two, Mammals. Natural History Museum of Los Angeles, Technical Report \#7.

Mann, J.F. 1955. Geology of a portion of the Elsinore fault zone, California: California Div. Mines Special Report 43, p. 22.

Murphey, P.C. 2004. SWCA Environmental Consultants (SWCA). Paleontological Monitoring Report for the Harveston Phase 2 Housing Development Temecula, California. Prepared for Lennar Communities, Inc.

Morton, D.M. and M.P. Kennedy. 2003. Geologic map of the Bachelor Mountain 7.5' quadrangle, Riverside County, California. U.S. Geological Survey Open-File Report 03-103, (scale 1:24,000).

Murphey, P.C., and D. Daitch. 2007. Paleontological overview of oil shale and tar sands areas in Colorado, Utah and Wyoming: U.S. Department of Energy, Argonne National Laboratory Report Prepared for the U.S. Department of Interior Bureau of Land Management, 468 p. and 6 maps (scale 1:500,000).

Paleo Biology Database (PBDB). 2017. Online search of the PaleoBiology Database, accessed January 20-25.

Radford, D. 2017. Paleontological Records Search - Temecula Valley Charter School Project. Completed by the Western Science Center at the request of Paleo Solutions, Inc. Dated 18 January 2017.

Reynolds, R.E., L.P. Fay, and R.L. Reynolds. 1990. An early-late Irvingtonian land mammal age fauna from Murrieta, Riverside County, California: San Bernardino County Museum Association Quarterly, v. XXXVII, p. 35-36.

Reynolds, R.E. and R.L. Reynolds. 1990a. A new late Blancan faunal assemblage from Murrieta, Riverside County, California: San Bernardino County Museum Association Quarterly, v. XXXVII, p. 34.

Reynolds, R.E. and R.L. Reynolds. 1990b. Irvingtonian? Faunas from the Pauba Formation, Temecula, Riverside County, California: San Bernardino County Museum Association Quarterly, v. XXXVII, p. 37.

Rogers, G.S. 1917. Chemical Relations of the Oil-Field Waters in San Joaquin Valley, California. USGS Bulletin 653.

Springer, K., E. Scott, C. Sagebiel, and L.K. Murray. 2009. The Diamond Valley Lake local fauna: Late Pleistocene vertebrates from inland southern California. in Papers on geology, vertebrate paleontology, and biostratigraphy in honor of Michael O. Woodburne (L.G. Albright, III, ed.). Museum of Northern Arizona Bulletin 65, Flagstaff, Arizona. pp. 217235.

University of California Museum of Paleontology (UCMP). 2017. Online search of the University of California Museum of Paleontology database, accessed January 20-25.

Woodford, A.O., J.S. Shelton, D.O. Doehring, and R.K. Morton. 1971. Pliocene-Pleistocene history of the Perris Block, Southern California. Geological Society of America Bulletin, v. 82, 3421-3448 p.

Yerkes, R.F., T.H. McCulloh, J.E. Schoellhamer, and J.G. Vedder. 1965. Geology of the Los Angeles Basin, California; an introduction: Professional Paper.

\section*{APPENIDX A}

WESTERN SCIENCE CENTER RECORDS SEARCH RESULTS

\title{
CWestern Science Center
}

January 18, 2017
Paleo Solutions
Barbara Webster, MS
911 S. Primrose Ave., Unit N
Monrovia, CA 91016
Dear Ms. Webster,
This letter presents the results of a record search conducted for the Temecula Valley Charter School Project in the city of Winchester in Riverside County, California. The project site is located west of Highway 79/Winchester Road, south of Keller Road, in section 28 on the boundary of the Winchester and Bachelor Mountain CA USGS 7.5 minute quadrangles.

The geologic units underlying this project are mapped primarily as very old alluvial channel deposits dating from the middle to early Pleistocene, with areas of phyllite deposits dating from the Mesozoic period (Morton \& Kennedy, 1991, 1995-1998). The Pleistocene alluvial channel units are considered to be of high paleontological sensitivity. The Western Science Center does not have localities within the project area or within a 1 mile radius, but does have numerous fossil localities within 5 miles that presented significant paleontological finds within similar alluvial mapped units including those associated with the Diamond Valley Lake Project in Hemet, and the Harveston II Project in Temecula. The Diamond Valley Lake and Harveston II Projects resulted in hundreds of fossil localities and thousands of fossil specimens.

Any fossils recovered from the project area would be scientifically significant. Excavation activity associated with development of the project area would impact the paleontologically sensitive Pleistocene units and it is the recommendation of the Western Science Center that a paleontological resource mitigation program be put in place to monitor, salvage, and curate any recovered fossils associated with the current study area.

If you have any questions, or would like further information about the Diamond Valley Lake or Harveston II projects mentioned, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,


Darla Radford
Collections Manager

\section*{Appendix}

This page intentionally left blank.

\section*{Appendix F Phase I Environmental Site Assessment}

ENVIRONMENTAL ASSESSMENT

\section*{Prepared for:}

\section*{Hansberger \& Klein}

Erica Klein


PHASE I ENVIRONMENTAL SITE ASSESSMENT
OF
34155 Winchester Road
Winchester, California 92596

PREPARED BY:
EMG
10461 Mill Run Circle
Suite 1100
Owings Mills, Maryland 21117
800.733.0660
www.EMGcorp.com
EMG CONTACT:
Kelly Hoover
Senior Environmental Consultant
800.733.0660. x6279
khoover@emgcorp.com
EMG PROJECT NUMBER:
120191.16R000-001.135

DATE OF REPORT:
June 6, 2016
ON SITE DATE:
May 26, 2016

\section*{PROJECT SUMMARY TABLE}
\begin{tabular}{|c|c|c|c|c|c|}
\hline REPORT SECTION & ACCEPTABLE & ROUTINE SOLUTION & \begin{tabular}{l}
PHASE \\
II
\end{tabular} & REC & \[
\begin{aligned}
& \text { ESTIMATED } \\
& \text { COST }
\end{aligned}
\] \\
\hline DATA GAPS & Yes & & & & \\
\hline CURRENT USE OF PROJECT & Yes & & & & \\
\hline HAZARDOUS MATERIALS & Yes & & & & \\
\hline STORAGE TANKS & Yes & & & & \\
\hline WASTE GENERATION & Yes & & & & \\
\hline SURFACE AREAS & Yes & & & & \\
\hline ADJACENT PROPERTY USE & Yes & & & & \\
\hline HISTORICAL REVIEW & Yes & & & & \\
\hline PROJECT REGULATORY DATABASE REVIEW & Yes & & & & \\
\hline OFF-SITE REGULATORY DATABASE REVIEW & Yes & & & & \\
\hline VAPOR MIGRATION & Yes & & & & \\
\hline ASBESTOS & No (1) & Yes & & No & \$495 \\
\hline RADON GAS & Yes & & & & \\
\hline LEAD-BASED PAINT & Yes & & & & \\
\hline LEAD IN DRINKING WATER & Yes (2) & Yes & & No & TBD \\
\hline MOISTURE CONDITIONS & Yes & & & & \\
\hline
\end{tabular}

Conditions noted in the Project Summary Table are representative of the overall conditions of the property. The Project Summary Table should not be used as a stand alone document. REC - Recognized Environmental Condition, as defined by ASTM E1527-13.

\section*{Footnotes:}
1. Based on the date of construction, there is a potential that asbestos containing materials (ACM) exist at the Project. The non-friable suspect ACM was observed in generally good condition and should be sampled prior to repair, renovation, or demolition activities. These materials can be maintained in place if an Operations and Maintenance (O\&M) Program is developed and implemented. A properly designed O\&M Program is sufficient to maintain the materials in accordance with current regulatory standards. Based on the scope of work, these materials were not sampled.
2. The Project is served by a private well. No documentation regarding lead in water testing was provided to EMG. The well should be sampled if proposed for future use, or properly abandoned if the well is not intended to be used in the future.

\section*{TABLE OF CONTENTS}
1.0 Executive Summary ..... 1
1.1 Findings and Opinions ..... 3
1.2 Recommendations ..... 3
1.3 Certification ..... 4
1.4 Reliance ..... 4
2.0 Scope of Work ..... 5
2.1 Purpose ..... 5
2.2 Scope of Work ..... 5
2.3 ASTM E1527 Non-Scope Considerations ..... 5
3.0 User Provided Information ..... 7
3.1 User Questionnaire ..... 7
3.2 Environmental Lien/AUL Search ..... 7
3.3 Previous Environmental Assessments ..... 7
4.0 Physical Setting ..... 8
4.1 Topography ..... 8
4.2 Geology ..... 8
4.3 Hydrogeology ..... 8
4.4 Soils ..... 9
5.0 Site Reconnaissance ..... 10
5.1 Units Observed ..... 10
5.2 Project Use ..... 11
5.3 Hazardous Materials and Petroleum Products ..... 11
5.4 Waste Generation, Storage, and Disposal ..... 13
5.5 Surface Areas ..... 15
5.6 Utilities, Heating, and Cooling ..... 16
5.7 Adjacent Property Use ..... 17
5.8 Interviews ..... 18
5.8.1 Key Site Manager ..... 18
5.8.2 Current Occupants ..... 18
5.8.3 Current Owner ..... 18
5.8.4 Past Owners and Occupants ..... 19
5.8.5 Nearby Owners and Occupants ..... 19
6.0 Historical Use Information ..... 20
6.1 Project Historical Use ..... 20
6.2 Off-Site Historical Use ..... 21
7.0 Environmental Records Review ..... 22
7.1 Regulatory Database Review ..... 22
7.1.1 Project Regulatory Database Review ..... 22
7.1.2 Off-Site Regulatory Database Review ..... 22
7.1.3 Vapor Migration ..... 22
7.2 Local Agency Records ..... 23
8.0 ASTM E1527 Non-Scope Considerations ..... 24
8.1 Asbestos ..... 24
8.2 Radon Gas ..... 24
8.3 Lead Based Paint ..... 24
8.4 Lead in Drinking Water ..... 25
8.5 Moisture Conditions ..... 25
8.6 Wetlands ..... 25
8.7 Flood Zone ..... 25
9.0 Limitations, Key Terms, and References ..... 27
9.1 Limitations ..... 27
9.2 References ..... 27
9.3 Key Terms ..... 28

\section*{TABLE OF APPENDICES}

Appendix A: Photographs
Appendix B: Field Sketch
Appendix C: Maps and Aerial Photographs
Appendix D: Questionnaires
Appendix E: Laboratory Analytical Results
Appendix F: Supporting Documentation
Appendix G: Previous Environmental Assessments
Appendix H: Regulatory Database Report
Appendix I: Key Personnel Resumes

\subsection*{1.0 EXECUTIVE SUMMARY}

EMG performed a Phase I Environmental Site Assessment of the property summarized below on May 26, 2016.
The assessment was performed at the Client's request using methods and procedures consistent with good commercial and customary practice conforming with ASTM E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. Any exceptions to, or deletions from, this practice are described in Section 2 of this report. The assessment was completed for the following property:
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ PROJECT DESCRIPTION } \\
\hline Project Name: & 34155 Winchester Road (the "Project") \\
\hline Additional Current/Historical & Not applicable \\
Addresses: & \\
\hline Assessor Parcel Number(s): & 476010013 and 476010059 \\
\hline Site Visit Date: & May 26, 2016 \\
\hline Property Type: & Residential and naturally vegetated \\
\hline Land Area (acres): & 14.6 \\
\hline Number of Units: & Two residences \\
\hline Number of Buildings: & Three \\
\hline Year Constructed: & 1979 \\
\hline Basement: & No \\
\hline Domestic Sewage: & Septic system \\
\hline Gross Building Area (SF): & Not reported \\
\hline Net Rentable Area (SF): & Not reported \\
\hline
\end{tabular}


Naturally vegetated land on west portion of Project


Permanent residence


Mobile home structure


Garage structure
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ SITE RECONNAISSANCE CONDITIONS } \\
\hline Date Completed: & May 26, 2016 \\
\hline EMG Project Manager: & Kate Downey \\
\hline Weather Conditions: & Sunny \\
\hline Temperature (F): & 70s \\
\hline Percent of Units Observed: & \(100 \%\) \\
\hline Access Limitations: & No access limitations were encountered. \\
\hline
\end{tabular}
\begin{tabular}{|r|r|}
\hline \multicolumn{2}{|c|}{ ENVIRONMENTALLY SUSPECT PROJECT USE } \\
\hline \multicolumn{2}{|c|}{ PROJECT USE } \\
\hline Cellular Communications Equipment: & CURRENTLY LOCATED AT THE PROJECT \\
\hline Commercial Printing: & No \\
\hline Dry Cleaner: & No \\
\hline Emergency Generator or Diesel Fire Pump: & No \\
\hline Gasoline Station: & No \\
\hline Heavy Industrial Use: & No \\
\hline Landfill: & No \\
\hline Military Use: & No \\
\hline Oil Well: & No \\
\hline Photograph/X-Ray Developing: & No \\
\hline Vehicle Repair: & No \\
\hline
\end{tabular}
\begin{tabular}{|c|l|l|c|}
\hline \multicolumn{3}{|c|}{ CHRONOLOGICAL HISTORY OF PROJECT } \\
\hline YEARS & \multicolumn{1}{|c|}{ PROJECT USE } & TENANTS & \begin{tabular}{c} 
ENVIRONMENTAL \\
CONCERN
\end{tabular} \\
\hline Prior to 1938 & No historical data available. & Not applicable & No \\
\hline \(1938-1975\) & Vacant, non-arable land & Not applicable & No \\
\hline \(1979-\) Current & \begin{tabular}{l} 
Residential and vacant, non-arable \\
land
\end{tabular} & Not applicable & No \\
\hline
\end{tabular}
\begin{tabular}{|c|l|l|c|}
\hline \multicolumn{4}{|c|}{ ADJACENT PROPERTIES } \\
\hline DIRECTION & \multicolumn{1}{|c|}{ ADDRESSES } & PROPERTY USE / BUSINESS & \\
\hline North & 34119 Keller Flat Court & NAME & ENVIRONMENTAL CONCERN \\
\hline East & Not applicable & Single-family residence & No \\
\hline South & Not applicable & Vacant, non-arable land & No \\
\hline West & \(34220-34550\) Pourroy Road & Vacant, non-arable land & No \\
\hline
\end{tabular}

\subsection*{1.1 FINDINGS AND OPINIONS}

This assessment has revealed no evidence of recognized environmental conditions (RECs), historical recognized environmental conditions (HRECs), controlled recognized environmental conditions (CRECs), significant data gaps, or significant business environmental risks in connection with the Project, except as discussed below.

\section*{ASBESTOS}

\section*{Business Environmental Risk: Suspect ACM identified}

Based on the date of construction, there is a potential that asbestos containing materials (ACM) exist at the Project. The non-friable suspect ACM was observed in generally good condition and should be sampled prior to repair, renovation, or demolition activities.

These materials can be maintained in place if an Operations and Maintenance (O\&M) Program is developed and implemented. A properly designed O\&M Program is sufficient to maintain the materials in accordance with current regulatory standards. Based on the scope of work, these materials were not sampled.

\section*{LEAD IN DRINKING WATER}

\section*{Business Environmental Risk: Lead In Water}

The Project is served by a private well. No documentation regarding lead in water testing was provided to EMG. The well should be sampled if proposed for future use, or properly abandoned if the well is not intended to be used in the future.

\subsection*{1.2 RECOMMENDATIONS}

EMG recommends the following:
\begin{tabular}{|l|c|}
\hline \multicolumn{1}{|c|}{ RECOMMENDATION } & ESTIMATED COST \\
\hline \begin{tabular}{l} 
The development and implementation of an Asbestos O\&M Program. Costs indicated are for O\&M \\
Program Document development only. Comprehensive survey costs, if required, will be identified as a \\
result of O\&M Program implementation.
\end{tabular} & \(\$ 495\) \\
\hline \begin{tabular}{l} 
The well should be sampled if proposed for future use, or properly abandoned if the well is not intended to \\
be used in the future.
\end{tabular} & To Be Determined \\
\hline
\end{tabular}

\subsection*{1.3 CERTIFICATION}

EMG certifies that EMG has no undisclosed interest in the subject property, that EMG's relationship with the Client is at arms-length, and that EMG's employment and compensation are not contingent upon the findings or recommendations provided in the Report.

If you have any questions regarding this report, please contact Kelly Hoover at (800) 733-0660 x6279 or khoover@emgcorp.com.
Surveyed By: Kate Downey, Project Manager
Written By: Kate Downey, Project Manager
Reviewed By:


Kelly Hoover, Senior Environmental Consultant
I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Project. I have developed and performed the all appropriate inquiries in conformance with the standard and practices set forth in 40 CFR Part 312.

\subsection*{1.4 RELIANCE}

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of EMG. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to EMG.

\subsection*{2.0 SCOPE OF WORK}

\subsection*{2.1 PURPOSE}

The purpose of this report is to provide the Client the results of a commercially prudent and reasonable inquiry designed to identify recognized environmental conditions at the Project taking into account reasonably ascertainable information. In accordance with ASTM E1527-13, the level of environmental assessment was guided by several factors, including the type of property and the risk tolerance of the user.

The user informed EMG that the purpose of the assessment is for an acquisition.

\subsection*{2.2 SCOPE OF WORK}

The assessment was conducted utilizing generally accepted Phase I industry standards, using American Society for Testing and Materials (ASTM) Standard Practice E 1527-13.

This assessment is based on the evaluation of the information gathered, laboratory analyses of samples collected (when required), and accessibility at the time of the assessment.

The Scope of Work included an evaluation of:
- Interviews with individuals knowledgeable about the Project for the purpose of gathering information regarding the potential for contamination at the Project.
- Available pertinent documents obtained by EMG or provided by the client.
- Reasonably ascertainable federal, state, and local records in an effort to identify sites of known or suspected hazardous waste activity located at or near the Project.
- The Project history in an attempt to identify possible ownership(s) and/or uses, as identified through review of reasonably ascertainable standard historical sources.
- The physical characteristics of the Project, as identified through review of reasonably ascertainable topographic data, wetlands, soils, geology, and groundwater data.
- Current Project conditions (as applicable) as they pertain to the presence or absence of: facility storage tanks, drums, containers (above or below ground), etc., transformers and other electrical equipment which utilize fluid which may potentially contain PCBs, the use of hazardous materials/chemicals and petroleum products, and/or the generation, treatment, storage, or disposal of hazardous, regulated, or medical wastes.
- An evaluation of information contained in programs such as the NPL, CERCLIS, SHWS, RCRIS, SWF, LUST, and other governmental information systems within specific search distances of the Project. This evaluation was performed to identify sites that represent a recognized environmental condition. The regulatory agency report provided is based on an evaluation of the data collected and compiled by a contracted data research company. The search is designed to meet the requirements of ASTM Standard Practice E 1527-13. The information provided is assumed to be correct and complete.
- Visual observation of the adjacent properties to identify high-risk neighbors and the potential for known or suspected contamination to migrate onto the Project.

\subsection*{2.3 ASTM E1527 NON-SCOPE CONSIDERATIONS}

At the Client's request, the assessment included a screening approach for the following Non-ASTM Considerations, which are otherwise beyond the Scope of ASTM E1527-13.
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ NON-ASTM CONSIDERATIONS } \\
\hline \begin{tabular}{r} 
NON-ASTM \\
CONSIDERATION
\end{tabular} & \\
\hline SCOPE OF WORK
\end{tabular}

\subsection*{3.0 USER PROVIDED INFORMATION}

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments") (if desired), the user must provide certain information (if available) identified in the User Questionnaire to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

Within this Phase I Environmental Site Assessment, EMG's reference to the Client follows the ASTM guide's definition of user, that is, the party that retains EMG for the preparation of a baseline ESA of the Project. A user may include, without limitation, a purchaser, potential tenant, owner, existing or potential mortgagee, lender, or property manager of the Project.

\subsection*{3.1 USER QUESTIONNAIRE}

EMG submitted the following User Questionnaire to the user pursuant to the responsibilities described in Section 6 of ASTM Standard E 1527-13. All Appropriate Inquires (40 CFR Part 312) requires that these questions be answered by or on behalf of a party seeking to qualify for limited liability protections to CERCLA liability.

A completed User Questionnaire was not returned to EMG. The lack of this information represents a data gap. However, based on the other information obtained during the completion of this assessment, the lack of the User Questionnaire does not represent a significant data gap. A copy of the User Questionnaire is included in Appendix D.

\subsection*{3.2 ENVIRONMENTAL LIEN/AUL SEARCH}

The presence of an Activity and Use Limitations (AUL) at a property is an indication that there may be residual levels of hazardous substances or petroleum products present above unrestricted land use levels. Although Environmental Liens and AULs are often recorded with the property deed at the local land title office, in some cases they are filed in a separate environmental agency database or in project documentation, such as agency closure letters. ASTM E1527-13 does not require the environmental professional to undertake a review of recorded land title records and judicial records for environmental liens and AULs. Such a review is performed at the discretion of the user, based on their need to meet the requirements of 40 CFR 312.20 and 312.25.

The user did not engage EMG to review title and judicial records for environmental liens or AULs recorded against the Project. Furthermore, these documents were not provided to EMG for review. The lack of this information represents a data gap. However, based on the other information obtained during the completion of this assessment, the lack of the an Environmental AUL/Lien search does not represent a significant data gap.

\subsection*{3.3 PREVIOUS ENVIRONMENTAL ASSESSMENTS}

In accordance with ASTM E1527-13, EMG requested that the user provide copies of previous environmental assessments for review. Furthermore, EMG may have obtained prior environmental assessments and regulatory records from local, state, and federal regulatory agencies. The purpose of reviewing prior environmental assessments is to determine if any recognized environmental conditions have previously been identified. Documentation provided to EMG which is unrelated to the identification of recognized environmental conditions may not be reviewed.

EMG was not provided with any previously conducted environmental assessment reports for the Project.

\subsection*{4.0 PHYSICAL SETTING}

ASTM E1527-13 requires that the current 7.5-minute USGS Topographic Map (or equivalent) showing the area on which the Project is located be reviewed. Additional physical setting sources, such as soil survey maps, groundwater maps and geologic maps may be obtained and reviewed at the discretion of the environmental professional. The purpose of this review is to evaluate whether hazardous substances or petroleum products are likely to migrate to the Project.

\subsection*{4.1 TOPOGRAPHY}

The most recent version of the USGS Topographic Map available is discussed below. Historical USGS Topographic Maps, if available, are discussed in Section 6.
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ USGS TOPOGRAPHIC MAP REVIEW } \\
\hline Topographic Map Name: & Bachelor Mountain, California \\
\hline Topographic Map Year: & 2015 \\
\hline Upper Elevation (feet): & 1,465 \\
\hline Lower Elevation (feet): & 1,415 \\
\hline Surface Slope: & Highly variable \\
\hline Slope Direction: & Highly variable \\
\hline Slope Direction: & Southeast TOPOGRAPHY \\
\hline Nearest Surface Water Feature: & Unnamed intermittent creek \\
\hline Nearest Surface Water Feature & 1,300 feet \\
Distance: & \\
\hline Nearest Surface Water Feature & South \\
Direction: & \\
\hline
\end{tabular}

\subsection*{4.2 GEOLOGY}

The generalized geology of the Project area was researched using readily available geologic maps.
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ GENERALIZED GEOLOGY } \\
\hline Source: & \begin{tabular}{l}
\(1: 2,500,000\) scale Geology of the Conterminous United States map published by the USGS \\
and dated 1974
\end{tabular} \\
\hline Geologic Description: & Lower Mesozoic eugeosynclinal materials \\
\hline
\end{tabular}

\subsection*{4.3 HYDROGEOLOGY}

Groundwater conditions at the Project are estimated based on reasonably available data such as groundwater maps, previous subsurface investigations conducted at, or in the vicinity of the Project, and local conditions. Shallow groundwater flow is generally expected to follow the ground level slope of surface elevations towards the nearest open body of water. Estimated groundwater levels may vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures, or dewatering operations.
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ HYDROGEOLOGY } \\
\hline Source: & \begin{tabular}{l} 
Groundwater well data provided the National Water Information System published by the \\
USGS
\end{tabular} \\
\hline \begin{tabular}{r} 
Estimated Depth to Shallow \\
Groundwater:
\end{tabular} & \begin{tabular}{l} 
30-250 feet below ground surface \\
\hline Estimated Direction of Groundwater \\
Flow:
\end{tabular}
\end{tabular} \begin{tabular}{l} 
Southeast \\
\hline
\end{tabular}

\subsection*{4.4 SOILS}

Review of the Natural Resources Conservation Service (NRCS) Web Soil Survey identified the following soil type(s) at the Project:
\begin{tabular}{|l|l|l|l|}
\hline \multicolumn{1}{|c|}{ SOIL SERIES NAME } & \multicolumn{1}{c|}{ DRAINAGE } & \multicolumn{1}{c|}{ TEXTURE } & \multicolumn{1}{c|}{ DEPTH } \\
\hline Escondido & Well drained & Sandy loam & At least 5 inches \\
\hline Friant & Well drained & Sandy loam & At least 13 inches \\
\hline Garretson & Well drained & Sandy loam & At least 10 inches \\
\hline Lodo & Somewhat excessively drained & Gravelly loam & At least 8 inches \\
\hline
\end{tabular}

\subsection*{5.0 SITE RECONNAISSANCE}

The objective of the site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with the property. In accordance with ASTM E1527-13, EMG attempted to visually observe the periphery of the Project and all structures to the extent not obstructed by obstacles. In addition, EMG attempted to visually observe interior common areas, maintenance and repair areas, and a representative sample of occupant spaces. In general, EMG does not look under floors, above ceilings, behind walls, in confined spaces, in transformer vaults, or in other areas not considered to be safe to access.
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ SITE RECONNAISSANCE CONDITIONS } \\
\hline Date Completed: & May 26, 2016 \\
\hline EMG Project Manager: & Kate Downey \\
\hline Weather Conditions: & Sunny \\
\hline Temperature (F): & 70s \\
\hline Percent of Units Observed: & 100\% \\
\hline Access Limitations: & No access limitations were encountered. \\
\hline
\end{tabular}

\subsection*{5.1 UNITS OBSERVED}

The units observed at the Project are discussed below.

\section*{RESIDENTIAL UNITS OBSERVED}

34155 Winchester Road, 34155-A Winchester Road


Interior garage structure


Interior permanent residence


Interior mobile home residence

\subsection*{5.2 PROJECT USE}
\begin{tabular}{|r|r|}
\hline \multicolumn{2}{|c|}{ ENVIRONMENTALLY SUSPECT PROJECT USE } \\
\hline PROJECT USE & CURRENTLY LOCATED AT THE PROJECT \\
\hline Cellular Communications Equipment: & No \\
\hline Commercial Printing: & No \\
\hline Dry Cleaner: & No \\
\hline Emergency Generator or Diesel Fire Pump: & No \\
\hline Gasoline Station: & No \\
\hline Heavy Industrial Use: & Landfill:
\end{tabular}

\subsection*{5.3 HAZARDOUS MATERIALS AND PETROLEUM PRODUCTS}

Accessible interior and exterior areas of the Project were observed for the presence of hazardous materials and petroleum products.
EMG evaluated any observed manways, vent pipes, fill connections, concrete pads, and unknown saw cuts to determine if USTs are present at the Project, or if USTs were historically located at the Project. In addition, the Key Site Manager and other property management personnel were interviewed regarding the presence of USTs at the Project.

EMG observed the Project for the presence of potentially PCB-containing equipment such as electrical transformers and hydraulic lifts. Equipment installed after 1979 is unlikely to contain PCBs.

EMG observed the Project for visual evidence of petroleum and natural gas pipelines, such as pipeline markers.
\begin{tabular}{|r|c|}
\hline \multicolumn{2}{|c|}{ STORAGE AND USE OF HAZARDOUS MATERIALS AND PETROLEUM PRODUCTS } \\
\hline FEATURE & IDENTIFIED AT PROJECT \\
\hline Drums and Small Containers: & Yes. Further discussed below. \\
\hline Underground Storage Tanks (USTs): & No \\
\hline Aboveground Storage Tanks (ASTs): & Yes. Further discussed below. \\
\hline Oil Cooled Transformers: & No \\
\hline Hydraulic Equipment: & No \\
\hline Petroleum or Natural Gas Pipelines: & No \\
\hline
\end{tabular}
\begin{tabular}{|l|l|l|c|}
\hline \multicolumn{4}{|c|}{ DRUMS AND SMALL CONTAINERS } \\
\hline \multicolumn{1}{|c|}{ MATERIAL } & \multicolumn{1}{|c|}{ QUANTITY } & STORAGE LOCATION & \begin{tabular}{c} 
SPILLS OR \\
LEAKS
\end{tabular} \\
\hline \begin{tabular}{l} 
Janitorial and maintenance \\
supplies
\end{tabular} & Retail-size containers & \begin{tabular}{l} 
Janitor closets and other designated \\
areas
\end{tabular} & No \\
\hline
\end{tabular}

Review of the hazardous materials use and storage at the Project did not identify any recognized environmental conditions or environmental concerns with regards to the materials listed in the table above.


Janitorial supplies
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ ABOVEGROUND STORAGE TANKS } \\
\hline Tank \#: & 1 \& 2 \\
\hline Owner: & Project \\
\hline Year Installed: & 1979 or later \\
\hline Contents: & Propane \\
\hline Capacity: & 100-gallons \\
\hline Visually Observable: & Yes \\
\hline Weep Holes Present: & Not Applicable \\
\hline Secondary Containment: & No \\
\hline
\end{tabular}
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ ABOVEGROUND STORAGE TANKS } \\
\hline Location: & Behind buildings \\
\hline Tank Construction: & Single-wall steel \\
\hline Registered With State: & Not required \\
\hline Leaks Observed: & No \\
\hline Leaks Reported by POC: & No \\
\hline Conclusion: & \begin{tabular}{l} 
The Key Site Manager was unaware of any past releases from the ASTs. Furthermore, the ASTs \\
appeared to be in good condition, with no evidence of current or past releases.
\end{tabular} \\
\hline
\end{tabular}


Propane tank


Propane tank

\subsection*{5.4 WASTE GENERATION, STORAGE, AND DISPOSAL}

Visual observation for the generation, treatment, storage, and disposal of wastes was performed. The areas of waste generation and storage were observed for evidence of current and past releases.

Although a waste disposal regulatory compliance audit is beyond the scope of this assessment, general waste disposal procedures were evaluated to determine if any deficiencies exist that are likely to result in a release to the Project.
\begin{tabular}{|r|r|}
\hline \multicolumn{2}{|c|}{ WASTE GENERATION AND DISPOSAL } \\
\hline FEATURE & IDENTIFIED AT PROJECT \\
\hline Waste Generation: & Yes. Further discussed below. \\
\hline Septic Systems: & Yes. Further discussed below. \\
\hline Oil Water Separators: & No \\
\hline Unknown Drums or Containers: & No \\
\hline Waste Disposal Ponds or Lagoons: & No \\
\hline
\end{tabular}
\begin{tabular}{|l|l|l|c|}
\hline \multicolumn{3}{|c|}{ WASTE GENERATION } \\
\hline \multicolumn{1}{|c|}{ WASTE TYPE } & \multicolumn{1}{c|}{ DISPOSAL METHOD } & \multicolumn{1}{c|}{ STORAGE LOCATION } & SPILLS OR \\
LEAKS \\
\hline Domestic sewage & Septic system & Septic system & No \\
\hline Municipal trash & Contracted waste hauler & Trash bins & No \\
\hline
\end{tabular}

Review of waste storage and disposal information did not identify any recognized environmental conditions or environmental concerns with regards to the wastes listed in the table above.


Trash bins
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|r|}{ Type: } \\
\hline Wastes: & Domemestic sewage \\
\hline Year Installed: & 1979 \\
\hline Currently Active: & Yes \\
\hline Reported Condition: & Good \\
\hline Leach Field Location: & Rear of residences \\
\hline Tank Location: & Rear of residences \\
\hline Health Department Violations: & Records are not reasonably ascertainable, as defined by ASTM \\
\hline Conclusion: & \begin{tabular}{l} 
Based on the information above, the presence of the septic systems do not represent a recognized \\
environmental condition.
\end{tabular} \\
\hline
\end{tabular}


Approximate location of septic system

\subsection*{5.5 SURFACE AREAS}

The interior and exterior surface areas were observed for environmentally significant features such as wells, sumps, staining, and pits.
\begin{tabular}{|r|c|}
\hline \multicolumn{2}{|c|}{ SURFACE AREAS } \\
\hline FEATURE & IDENTIFIED AT PROJECT \\
\hline Floor Drains, Sumps and Pits: & No \\
\hline Pools of Liquid Waste: & No \\
\hline Surface Staining: & No \\
\hline Unusual or Noxious Chemical Odors: & No \\
\hline Strandfilling: & No \\
\hline Stressed Vegetation: & No \\
\hline Domestic Water Wells: & No \\
\hline Monitoring Wells: & Yes. Further discussed below. \\
\hline Irrigation Wells: & No \\
\hline Dry Wells: & No \\
\hline
\end{tabular}
\begin{tabular}{|l|c|c|l|}
\hline \multicolumn{4}{|c|}{ WELLS } \\
\hline TYPE OF WELL & \# OF WELLS & REGISTERED & LOCATION \\
\hline Water (potable) & 1 & No & Entrance of residences (central portion) \\
\hline
\end{tabular}


Water well and water storage tanks

\subsection*{5.6 UTILITIES, HEATING, AND COOLING}
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ UTILITIES } \\
\hline Domestic Water: & Domestic water well \\
\hline Electricity: & Public utility - Pacific Gas \& Electric \\
\hline Natural Gas: & Not applicable \\
\hline Domestic Sewer: & Septic system \\
\hline
\end{tabular}
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ HEATING AND COOLING } \\
\hline Type of Heating: & Propane units \\
\hline Type of Cooling: & Electric units \\
\hline
\end{tabular}


Condensing unit


Water heater and furnace

\subsection*{5.7 ADJACENT PROPERTY USE}

The adjacent properties were visually observed for evidence of recognized environmental conditions, such as property uses likely to result in a release, and visual evidence of surface migration of releases. The following adjacent properties were identified:
\begin{tabular}{|c|l|l|c|}
\hline \multicolumn{4}{|c|}{ ADJACENT PROPERTIES } \\
\hline DIRECTION & \multicolumn{1}{|c|}{ ADDRESSES } & PROPERTY USE / BUSINESS & \\
\hline North & 34119 Keller Flat Court & NAME & ENVIRONMENTAL CONCERN \\
\hline East & Not applicable & Single-family residence & No \\
\hline South & Not applicable & Vacant, non-arable land & No \\
\hline West & \(34220-34550\) Pourroy Road & Vacant, non-arable land & No \\
\hline
\end{tabular}

Review of the adjacent properties did not identify any visible evidence of a release. Furthermore, no releases were identified at the adjacent properties based on review of the regulatory database report (Section 7.1.2). Therefore, the adjacent property uses do not represent a recognized environmental condition.


North adjacent single family residence


East adjacent Winchester Road followed by vacant land


South adjacent vacant land


West adjacent single family residences

\subsection*{5.8 INTERVIEWS}

\subsection*{5.8.1 KEY SITE MANAGER}

EMG attempted to interview the Key Site Manager as part of this assessment. In addition, a Questionnaire was provided to the Key Site Manager to assist EMG in determining if recognized environmental conditions exist at the Project. A copy of the Key Site Manager Questionnaire is included in Appendix D.
\begin{tabular}{|c|c|c|c|}
\hline \multicolumn{4}{|c|}{KEY SITE MANAGER INTERVIEWS} \\
\hline NAME & RELATIONSHIP TO PROPERTY & YEARS WITH PROPERTY & TELEPHONE NUMBER \\
\hline William R. Liesman & Owner & 28 & 951-333-3544 \\
\hline
\end{tabular}

The Key Site Manager did not identify any recognized environmental conditions or environmental concerns with the current or historical use of the Project.

\subsection*{5.8.2 CURRENT OCCUPANTS}

EMG made a reasonable attempt to interview all major occupants and also those other occupants whose operations are likely to indicate a recognized environmental condition.

No occupants of the Project were available or would agree to an interview. The lack of occupant interviews represents a data gap. However, based on the conditions observed in the accessed areas, discussions with the site contact, and review of other available information, the lack of this information does not represent a significant data gap.

\subsection*{5.8.3 CURRENT OWNER}

EMG submitted an Owner Questionnaire to the user in an effort to identify the owner of the Project who could be interviewed to provide information regarding proceedings involving the Project.

A completed Owner Questionnaire was not returned to EMG. The lack of this information represents a data gap. However, based on the other information obtained during the completion of this assessment, the lack of the User Questionnaire does not represent a significant data gap. A copy of the Owner Questionnaire is included in Appendix D.

\subsection*{5.8.4 PAST OWNERS AND OCCUPANTS}

No past owners of the Project, who likely would have material information regarding recognized environmental conditions at the Project, were identified.

\subsection*{5.8.5 NEARBY OWNERS AND OCCUPANTS}

The Project was not an abandoned property with evidence of unauthorized uses or uncontrolled access; therefore, interviews were not conducted with adjacent or nearby property owners or occupants.

\subsection*{6.0 HISTORICAL USE INFORMATION}

The purpose of the historical review is to determine the previous uses of the Project and surrounding area in order to identify the likelihood of past uses having led to a recognized environmental condition. Historical sources that are both reasonably ascertainable, and likely to be useful are reviewed in an attempt to document the historical use of the Project and surrounding areas dating back to 1940, or the first developed use, whichever is earlier.

Copies of representative historical maps/aerial photographs are included in Appendix C. Other historical documentation, such as City Directory abstracts, copies of building department records, and ownership records are included in Appendix F, when available.

The following standard historical sources were researched:
\begin{tabular}{|r|l|l|}
\hline \multicolumn{2}{|c|}{ STANDARD HISTORICAL SOURCES } \\
\hline DATA TYPE & \multicolumn{1}{|c|}{ SOURCE } & \multicolumn{1}{c|}{ YEARS COVERED } \\
\hline Aerial Photographs: & ERIS & \(1938,1953,1968,1975,1980,1996,2005,2014\) \\
\hline Fire Insurance (Sanborn) Maps: & ERIS & Not available \\
\hline USGS Topographic Maps: & USGS & \(1953,1973,2012,2015\), \\
\hline Local Street Directories: & Hemet Library & Not available \\
\hline Building Department Records: & Riverside County Building Department & 1997 - Current \\
\hline Fire Department Records: & Riverside County Fire Department & Pending response from agency \\
\hline Zoning/Land Use Records: & Riverside County Planning Department & 1997 - Current \\
\hline Property Tax Files and Land Title & Riverside County Assessor & Current \\
\hline Records: & & \(1987-\) Current \\
\hline Key Site Manager Interview: & Pre-Survey Questionnaire & Not applicable \\
\hline Other Historical Sources: & Not applicable & \\
\hline
\end{tabular}

EMG was not able to obtain standard historical sources that document the Project history in five year intervals. Furthermore, EMG was not able to document the use of the Project back to the first developed use, or back to 1940, whichever is earlier. The lack of this information represents a data gap. However, based on the other information obtained during the completion of this assessment, the lack of this information does not represent a significant data gap.

\subsection*{6.1 PROJECT HISTORICAL USE}

Based on review of the historical resources identified in Section 6.0, the following chronological history was developed for the Project.
\begin{tabular}{|c|l|l|c|}
\hline \multicolumn{4}{|c|}{ CHRONOLOGICAL HISTORY OF PROJECT } \\
\hline YEARS & \multicolumn{1}{|c|}{ PROJECT USE } & \multicolumn{1}{|c|}{ TENANTS } & \begin{tabular}{c} 
ENVIRONMENTAL \\
CONCERN
\end{tabular} \\
\hline Prior to 1938 & No historical data available. & Not applicable & No \\
\hline \(1938-1975\) & Vacant, non-arable land & Not applicable & No \\
\hline \(1979-\) Current & \begin{tabular}{l} 
Residential and vacant, non-arable \\
land
\end{tabular} & Not applicable & No \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline \multicolumn{3}{|c|}{ OWNERSHIP HISTORY OF PROJECT } \\
\hline YEAR PURCHASED & OWNER NAME & ENVIRONMENTAL CONCERN \\
\hline & & No \\
\hline
\end{tabular}

\subsection*{6.2 OFF-SITE HISTORICAL USE}

Based on review of the historical resources identified in Section 6.0, the following chronological history was developed for the adjacent properties.
\begin{tabular}{|c|c|c|}
\hline \multicolumn{3}{|c|}{CHRONOLOGICAL HISTORY OF ADJACENT PROPERTIES} \\
\hline YEARS & ADJACENT PROPERTY USE & ENVIRONMENTAL CONCERN \\
\hline \multicolumn{3}{|c|}{NORTH} \\
\hline Prior to 1938 & No historical data available. & No \\
\hline 1938-1980s & Vacant, non-arable land & No \\
\hline 1980s - Current & Vacant, non-arable land and residential & No \\
\hline \multicolumn{3}{|c|}{EAST} \\
\hline Prior to 1938 & No historical data available. & No \\
\hline 1938 - Current & Vacant, non-arable land & No \\
\hline \multicolumn{3}{|c|}{SOUTH} \\
\hline Prior to 1938 & No historical data available. & No \\
\hline 1938 - Current & Vacant, non-arable land & No \\
\hline \multicolumn{3}{|c|}{WEST} \\
\hline Prior to 1938 & No historical data available. & No \\
\hline 1938-1980s & Vacant, non-arable land & No \\
\hline 1980s - Current & Residential & No \\
\hline
\end{tabular}

Review of the historical adjacent property uses did not identify visible evidence of a release. Furthermore, no releases were identified at the adjacent properties based on review of the regulatory database report (Section 7.1.2). Therefore, the historical adjacent property uses do not represent a recognized environmental condition.

\subsection*{7.0 ENVIRONMENTAL RECORDS REVIEW}

The purpose of the records review is to obtain and review records that will help identify recognized environmental conditions. ASTM E1527-13 requires the review of reasonably ascertainable records from standard sources as defined in Section 8.2.1 of ASTM E1527-13. Additional records sources, such as local fire department records, local building department records, and local environmental health department records may be obtained and reviewed at the discretion of the environmental professional.

The availability of record information varies widely, depending on the source. Reasonably ascertainable records are those records that are publicly available, obtainable within reasonable time and cost constraints, and practically reviewable. In addition, the records must be provided by the agency within 20 calendar days of receiving a request, at no more than a nominal cost intended to cover the source's cost of retrieving and duplicating the information.

\subsection*{7.1 REGULATORY DATABASE REVIEW}

EMG obtained a regulatory database report from a commercial database provider in an effort to determine if the Project is a listed regulatory site and whether there are any mappable regulatory database sites within the search distances specified by ASTM E1527-13. EMG attempted to field-verify the locations of the identified regulatory sites, as well as confirm distances and locations relative to the Project using available mapping software. Therefore, the distances and/or directions noted in this section may not match the Database Report. In addition, EMG reviewed the unmappable sites in the database report, cross-referencing addresses and site names.

In accordance with ASTM E1527-13, regulatory files and/or records associated with standard environmental record sources may be obtained and reviewed when the files and/or records are reasonably ascertainable, the files/records are expected to contain significant information for the purpose of identifying recognized environmental conditions, and an alternative source of the information is not available. Furthermore, review of regulatory files and/or records may be limited by the scope of work. Unless otherwise noted in Section 1.1, further review of regulatory agency files and/or records is not considered to be warranted based on the general nature of the regulatory database listing, the level of detail provided in the regulatory database, the availability of information from alternative sources, and/or the low likelihood that the agency files and/or records will contain information indicating the presence of a recognized environmental condition.

A copy of the full regulatory database report is included in Appendix H .

\subsection*{7.1.1 PROJECT REGULATORY DATABASE REVIEW}

The search for sites listed on regulatory databases did not identify any listings for the Project.

\subsection*{7.1.2 OFF-SITE REGULATORY DATABASE REVIEW}

The search for sites listed on regulatory databases in the area surrounding the Project did not identify any sites within the specified search radii.

\subsection*{7.1.3 VAPOR MIGRATION}

Indoor air quality concerns are generally excluded from the scope of ASTM E1527-13 and this assessment. However, the migration of vapors caused by a release of hazardous substances or petroleum products to the environment can represent a recognized environmental condition in certain conditions.

For the purposes of this assessment, the potential for migrating vapors to represent a recognized environmental condition was evaluated using a limited screening method based on technical guidance documents from the US EPA and ASTM E2600-15 Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions. In addition, screening tools created by regulatory agencies may be used to evaluate the significance of a release with respect to the vapor migration and/or vapor intrusion potential.

EMG's vapor migration screening is not a human health risk assessment and is not intended to comply with regulatory requirements that might exist for the evaluation of vapor migration.

Based on the review of regulatory database records in Section 7.1.1 and 7.1.2, no vapor migration concerns were identified.

\subsection*{7.2 LOCAL AGENCY RECORDS}

The following additional environmental records were reviewed to supplement the standard environmental record sources discussed in Sections 7.1.1 and 7.1.2.

Reasonably ascertainable records for the Project may be reviewed for evidence of recognized environmental conditions and other environmental concerns such as underground storage tanks, significant hazardous materials use, the presence of septic systems, and/ or the presence of wells.
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ BUILDING DEPARTMENT } \\
\hline Name of Agency: & Riverside County Building Department \\
\hline Contact Name/Telephone: & (951) 955-1800 \\
\hline Review Method: & Online records review \\
\hline Records Date Back To: & 1997 - Current \\
\hline Summary of Records Reviewed: & No environmentally significant information was identified \\
\hline Environmentally Significant & None identified \\
Information: & \\
\hline
\end{tabular}
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ FIRE DEPARTMENT } \\
\hline Name of Agency: & Riverside County Fire Department \\
\hline Contact Name/Telephone: & (951) 943-4970 \\
\hline Review Method: & \begin{tabular}{l} 
A written request for information has been submitted. A response is currently pending. A copy \\
of the request is included in Appendix F.
\end{tabular} \\
\hline Records Date Back To: & Pending response from agency \\
\hline Summary of Records Reviewed & Pending response from agency \\
\hline Environmentally Significant & Pending response from agency \\
Information: & \\
\hline
\end{tabular}
\begin{tabular}{|r|l|}
\hline \multicolumn{2}{|c|}{ PLANNING/ZONING DEPARTMENT } \\
\hline Name of Agency: & Riverside County Planning Department \\
\hline Contact Name/Telephone: & \((760)\) 863-8277 \\
\hline Review Method: & Online records review. \\
\hline Records Date Back To: & 1997 - Current \\
\hline Current Zoning: & RR - Rural Residential \\
\hline Historical Zoning: & Not available \\
\hline Environmentally Significant & No environmentally significant information was identified \\
Information: & \\
\hline
\end{tabular}

\subsection*{8.0 ASTM E1527 NON-SCOPE CONSIDERATIONS}

The items discussed in this section are outside the scope of ASTM E1527-13. These are included at the discretion of the user based upon the scope of work.

\subsection*{8.1 ASBESTOS}

In accordance with the scope of work, EMG performed a screening to document the presence of known and/or suspect asbestos containing materials (ACM) at the Project. This screening approach is not a comprehensive (i.e., AHERA-Style) asbestos survey, nor is it intended to fulfill the NESHAP requirements for demolition or renovation purposes. All materials listed in Appendix \(G\) of the United States Environmental Protection Agency (USEPA) publication Managing Asbestos in Place (the "Green Book") are considered suspect.

Some non-friable building products, such as sheet vinyl floor tile, vinyl floor tile, floor tile mastic, asbestos-cement board, and roofing materials can still be manufactured with asbestos and installed in the United States. However, U.S. manufacturers have largely excluded asbestos fibers from their building products since 1981. In addition to a visual assessment, EMG reviewed provided documentation to determine if asbestos has been previously documented at the Project.
\begin{tabular}{|c|c|c|}
\hline \multicolumn{3}{|c|}{ SUSPECT ASBESTOS CONTAINING MATERIALS } \\
\hline MATERIAL & FRIABLE & CONDITION \\
\hline Roofing materials & No & Good \\
\hline Vinyl composition tile & No & Good \\
\hline Mastic & No & Good \\
\hline Wallboard/joint compound & No & Good \\
\hline
\end{tabular}

Based on the scope of work, sampling of suspect asbestos containing materials was not performed. Refer to Section 1.1 for further discussion.

\subsection*{8.2 RADON GAS}

Radon originates from the natural (radioactive) breakdown of uranium in soil, rock and water and is the second leading cause of lung cancer in the United States. Radon can move up through the ground and into living spaces through cracks and other holes in the foundation. The USEPA has developed the EPA Map of Radon Zones to assist National, State, and local organizations in implementing radon-resistant building codes. This map assigns each county in the U.S. to one of three zones based on radon potential. The USEPA uses a continuous exposure level of \(4.0 \mathrm{pCi} / \mathrm{L}\) (picoCuries per liter of air) as an action level at which additional action is recommended.

For the purposes of this assessment, the radon zone and the use of the Project have been used to determine the level of risk associated with radon. However, the USEPA and the Surgeon General recommend testing all homes for radon, regardless of geographic location.

\section*{EPA RADON ZONE}

Zone 2 (Moderate Potential) - Counties have a predicted average indoor radon screening level between 2 and \(4 \mathrm{pCi} / \mathrm{L}\).

Radon sampling was not performed based on the Scope of Work.

\subsection*{8.3 LEAD BASED PAINT}

All paint applied prior to 1978 is considered suspect. The basis for this determination is taken from the Lead Paint Poisoning Act passed by the Congress of the United States that banned the use of lead paint starting January 1, 1978. This screening approach does not
comply with Requirements for Disclosure of Known Lead-Based Paint and/or Lead-Based Paint Hazards in Housing. This approach does not constitute a pre-occupancy survey or the basis of attainment of "Lead Free" certification.

Generally, due to the date of construction, the potential use of lead-based paint was minimized due to regulatory requirements and sound business practice. Based on the date of construction and the Scope of Work, no samples were collected. No further action or investigation is recommended regarding lead-based paint.

\subsection*{8.4 LEAD IN DRINKING WATER}

Lead is commonly used in household plumbing materials and water service lines. Exposure to lead in drinking water above the USEPA action level can result in adverse health effects in children and adults. Lead is rarely found in source water, but enters tap water through corrosion of plumbing materials. Homes built before 1986 are more likely to have lead pipes, fixtures and solder. The most common problem is with brass or chrome-plated brass faucets and fixtures which can leach significant amounts of lead into the water. The USEPA action level for lead-in-drinking water is 15 parts per billion (ppb).

The Project is served by a private well. No documentation regarding lead in water testing was provided to EMG. Refer to Section 1.1 for further discussion.

\subsection*{8.5 MOISTURE CONDITIONS}

EMG performed a limited visual and olfactory assessment for evidence of moisture conditions in readily accessible interior areas of the Project. In addition, the Key Site Manager was interviewed regarding the presence of current and historical moisture conditions. This assessment was not designed to discover all areas which may be affected by moisture conditions. Rather, it is intended to provide an indication of significant moisture conditions observed during the site visit. Moisture conditions may be present in areas not observed, such as pipe chases, HVAC systems, and behind enclosed walls and ceilings. De minimis moisture conditions, such as small, isolated, water stains on ceiling tiles, and mildew at bathtubs and sinks are considered to be routine maintenance issues and are not addressed in this Report.

EMG did not observe visual or olfactory indications of significant moisture conditions in readily accessible interior areas of the Project. Furthermore, the Key Site Manager did not report any significant current or historical moisture conditions at the Project.

\subsection*{8.6 WETLANDS}

For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." A wetlands delineation is beyond the scope of this assessment. However, review of National Wetlands Inventory (NWI) data, provided by the United States Fish and Wildlife Service, indicated the following:
\begin{tabular}{|c|c|}
\hline \multicolumn{2}{|c|}{ WETLANDS REVIEW } \\
\hline PROJECT & \multicolumn{1}{c|}{ ADJACENT PROPERTIES } \\
\hline Review of the NWI data did not identify any wetlands. & Review of the NWI data did not identify any wetlands. \\
\hline
\end{tabular}

No wetlands were identified. No further action or investigation is recommended regarding wetlands.

\subsection*{8.7 FLOOD ZONE}

FEMA identifies flood hazards, assesses flood risks and partners with states and communities to provide accurate flood hazard and risk data to guide them to mitigation actions.Flood hazard mapping is the basis for the National Flood Insurance Program (NFIP) and flood insurance requirements. FEMA maintains and updates data through Flood Insurance Rate Maps (FIRMs) and risk assessments. FIRMs
include statistical information such as data for river flow, storm tides, hydrologic/hydraulic analyses and rainfall and topographic surveys. Review of the FIRM indicated the following:
\begin{tabular}{|l|l|}
\hline \multicolumn{2}{|c|}{ FLOOD ZONE MAP REVIEW } \\
\hline \multicolumn{1}{|c|}{ MAP DATE } & \multicolumn{1}{c|}{ PROJECT FLOOD ZONE } \\
\hline Not applicable & \begin{tabular}{l} 
The entire Project is located in an area of undetermined flood hazard that does not appear on a Flood \\
Insurance Rate Map or Flood Hazard Boundary Map where flooding is possible.
\end{tabular} \\
\hline
\end{tabular}

The flood zone designation is provided for informational purposes only. A determination of the need for flood insurance is beyond the scope of this assessment.

\subsection*{9.0 LIMITATIONS, KEY TERMS, AND REFERENCES}

\subsection*{9.1 LIMITATIONS}

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent Environmental Professional in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained within this report that has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment.

Factual information regarding operations, conditions, and test data provided by the Client or the Client's representative has been assumed to be correct and complete. The conclusions presented within this report are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

EMG's ESA cannot wholly eliminate the uncertainty regarding the presence of recognized environmental conditions and environmental business risk. The report is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the Project. The report is limited in budget and scope. The nature of subsurface soil and ground water at the Project cannot be confirmed, given the limited budget and scope of this ESA. The report is not and should not be considered a warranty or guarantee about the presence or absence of environmental contaminants which might affect the Project. It should be understood that EMG's suggested remedy may be determined under time constraints or may be formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the noted environmental conditions.

\subsection*{9.2 REFERENCES}

References are listed below. Additional references may be present within the applicable report sections.

\section*{Physical Setting}
\(71 / 2\) minute USGS Topographic Quadrangle (included in Appendix C)
1:2,500,000 scale Geology of the Conterminous United States map published by the USGS and dated 1974
Natural Resources Conservation Service (NRCS) Web Soil Survey

\section*{Regulatory Records}

Database Report, Ecolog ERIS Ltd. (included in Appendix H)

\section*{Key Site Manager Interview}

Key Site Manager Questionnaire, (included in Appendix D)

\section*{Historical References}
\begin{tabular}{|r|l|l|}
\hline \multicolumn{2}{|c|}{ STANDARD HISTORICAL SOURCES } \\
\hline DATA TYPE & \multicolumn{1}{|c|}{ SOURCE } & \multicolumn{1}{c|}{ YEARS COVERED } \\
\hline Aerial Photographs: & ERIS & \(1938,1953,1968,1975,1980,1996,2005,2014\) \\
\hline Fire Insurance (Sanborn) Maps: & ERIS & Not available \\
\hline USGS Topographic Maps: & USGS & \(1953,1973,2012,2015\), \\
\hline
\end{tabular}
\begin{tabular}{|r|l|l|}
\hline \multicolumn{2}{|c|}{ STANDARD HISTORICAL SOURCES } \\
\hline DATA TYPE & \multicolumn{1}{|c|}{ SOURCE } & \multicolumn{1}{c|}{ YEARS COVERED } \\
\hline Local Street Directories: & Hemet Library & Not available \\
\hline Building Department Records: & Riverside County Building Department & 1997 - Current \\
\hline Fire Department Records: & Riverside County Fire Department & Pending response from agency \\
\hline Zoning/Land Use Records: & Riverside County Planning Department & 1997 - Current \\
\hline Property Tax Files and Land Title & Riverside County Assessor & Current \\
\hline Records: & & \(1987-\) Current \\
\hline Oey Site Manager Interview: & Pre-Survey Questionnaire & Not applicable \\
\hline
\end{tabular}

\subsection*{9.3 KEY TERMS}

Business environmental risk - A risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations. For the purposes of this assessment, a significant business environmental risk is both included in the agreed upon scope of work and requires further action at this time.

Controlled recognized environmental condition - A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Data gap - The lack of or inability to obtain information required by ASTM E 1527-13 despite good faith efforts is considered a data gap. A data gap is considered significant if it affects the ability of the environmental professional to identify recognized environmental conditions.

De minimis condition - A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis conditions are not recognized environmental conditions nor controlled recognized environmental conditions.

Environmental Professional - A person meeting the education, training, and experience requirements set forth in 40 CFR 312.10(b).
Historical recognized environmental condition - A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g. property use restriction, AULS, institutional controls, or engineering controls), at the time the Phase I ESA is conducted (e.g., if there has been a change in the regulatory criteria). If the EP considers this past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusion section of the report as a REC.

Material threat - A physically observable or obvious threat which is reasonably likely to lead to a release that, in the opinion of the environmental professional, is threatening and might result in impact to public health or the environment.

Practically reviewable - Information that is provided by the source in a manner and in a form that, upon examination, yields information relevant to the property without the need for extraordinary analysis of irrelevant data.

Release - Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant), with certain exclusions as defined in 42 U.S.C. 9601 (22).

Reasonably ascertainable - Information that is publicly available, obtainable from its source within reasonable time and cost constraints, and practically reviewable.

Recognized environmental condition - The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property 1) due to any release to the environment; 2 ) under conditions indicative of a release to the environment; or 3 ) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.

Standard environmental record sources - Environmental records contained in various regulatory databases, with search distances defined by ASTM E1527-13, unless otherwise specified by client in the scope of work.

Standard historical sources - Reasonably ascertainable records, including aerial photographs, fire insurance maps, property tax files, recorded land title records, USGS topographic maps, local street directories, building department records, and zoning/land use records.

\section*{APPENDIX A:}

\section*{PHOTOGRAPHS}

\begin{tabular}{|c|c|}
\hline PHOTO \\
\(\# 5\) & MOBILE HOME STRUCTURE \\
\hline
\end{tabular}



\begin{tabular}{|c|l|}
\hline PHOTO & APPROXIMATE LOCATION OF SEPTIC \\
\#14 & SYSTEM \\
\hline
\end{tabular}



\section*{APPENDIX B:}

FIELD SKETCH

Field Sketch


\section*{APPENDIX C:}

MAPS AND AERIAL PHOTOGRAPHS

\section*{TOPOGRAPHIC MAP}


\section*{WETLANDS MAP}


TAX MAP




HISTORIC TOPOGRAPHIC MAP


AERIAL PHOTOGRAPH


\section*{AERIAL PHOTOGRAPH}


\section*{AERIAL PHOTOGRAPH}


\section*{AERIAL PHOTOGRAPH}


\section*{AERIAL PHOTOGRAPH}


\section*{AERIAL PHOTOGRAPH}


\section*{APPENDIX D:}

QUESTIONNAIRES
engineering environmental capital planning project management

\section*{KEY SITE MANAGER QUESTIONNAIRE}

Name of person completing questionnaire:

Association with property:
Length of association with property:
Date:
Phone Number:
Property Name:
EMG Project Number:

William R. Liesman
Owner/Trustee
28 years
5/20/2016
951-333-3544

34155 Winchester Road
120191.16R000-001.135

Directions: Please answer all questions to the best of your knowledge and in good faith. Mark the column corresponding to the appropriate response. Additional details necessary to explain any yes or unknown responses should be provided in the "Comments" column. Note: U/NR indicates "Unknown" or "No Response".
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{2}{|r|}{QUESTION} & \multicolumn{3}{|l|}{RESPONSE} & COMMENTS \\
\hline & & Y & N & U/NR & \\
\hline 1A. & Is the Project used for an industrial use? & & X & & \\
\hline 1B. & Are any adjoining properties used for an industrial use? & & X & & \\
\hline 2 A . & To the best of your knowledge, has the Project been used for an industrial use in the past? & & X & & \\
\hline 2 B . & To the best of your knowledge, has any adjoining properties been used for an industrial use in the past? & & X & & \\
\hline 3A. & Is the Project used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility? & & X & & \\
\hline 3B. & Is any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility? & & X & & \\
\hline 4A. & To the best of your knowledge, has the Project been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility? & & X & & \\
\hline
\end{tabular}
engineering environmental capital planning project management
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{2}{|r|}{QUESTION} & \multicolumn{3}{|l|}{RESPONSE} & \multirow[t]{2}{*}{COMMENTS} \\
\hline & & Y & N & U/NR & \\
\hline 4B. & To the best of your knowledge, has any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility? & & x & & \\
\hline 5 A . & Are there currently any automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than five gallons in volume or fifty gallons in the aggregate, stored on or used at the Project? & & x & & \\
\hline 5B. & To the best of your knowledge, have there been previously any automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than five gallons in volume or fifty gallons in the aggregate, stored on or used at the Project? & & x & & \\
\hline 6 A . & Are there currently any industrial drums (typically 55 gallon) or sacks of chemicals located on the Project? & & x & & \\
\hline 6 B . & To the best of your knowledge, have there been previously any industrial drums (typically 55 gallon) or sacks of chemicals located on the Project? & & x & & \\
\hline 7A. & Are there currently any groundwater monitoring wells or other groundwater wells (i.e., potable drinking water wells) located on the Project? & x & & & One well with pump and storage for 5,000 gallons serves dwelling and mobile \\
\hline 7B. & To the best of your knowledge, have there been previously any groundwater monitoring wells or other groundwater wells (i.e., potable drinking water wells) located on the Project? & x & & & Well has been on the property at the same site since at least the late 1970s \\
\hline 8 A . & Has fill dirt been brought onto the Project which originated from a contaminated site? & & x & & \\
\hline 8 B . & Has fill dirt been brought onto the Project which is of an unknown origin? & & x & & \\
\hline 9 A . & Are there currently any pits, ponds or lagoons located on the Project in connection with waste treatment or waste disposal? & & x & & \\
\hline 9 B . & To the best of your knowledge, have there been previously any pits, ponds or lagoons located on the Project in connection with waste treatment or waste disposal? & & x & & \\
\hline 10A. & Is there currently, any stained soil on the Project? & & x & & \\
\hline 10B. & To the best of your knowledge, has there been previously any stained soil on the Project? & & x & & \\
\hline 11A. & Are there currently any registered or unregistered storage tanks (above or underground) located on the Project? & X & & & Two 2500 gallon water storage tanks \\
\hline
\end{tabular}
engineering environmental capital planning project management
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{2}{|r|}{QUESTION} & \multicolumn{3}{|l|}{RESPONSE} & COMMENTS \\
\hline & & Y & N & U/NR & \\
\hline 11B. & To the best of your knowledge, have there been previously any registered or unregistered storage tanks (above or underground) located on the Project? & x & & & As above since 2000 \\
\hline 12A. & Are there currently any vent pipes, fill pipes or access ways indicating a fill pipe protruding from the ground on the Project or adjacent to any structure located on the Project? & & X & & \\
\hline 12B. & To the best of your knowledge, have there been previously any vent pipes, fill pipes or access ways indicating a fill pipe protruding from the ground on the Project or adjacent to any structure located on the Project? & & x & & \\
\hline 13A. & Are there currently any flooring, drains, or walls located at the Project that are stained by substances other than water or are emitting foul odors? & & X & & \\
\hline 13B. & To the best of your knowledge, have there been previously any flooring, drains, or walls located at the Project that are stained by substances other than water or are emitting foul odors? & & x & & \\
\hline 14A. & If the Project is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system? & & x & & \\
\hline 14B. & If the Project is served by a private well or non-public water system, has the well been designated as contaminated by any government environmental/health agency? & & x & & \\
\hline 15A. & Have you been informed of the past existence of hazardous substances or petroleum products with respect to the Project or any facility located on the Project? & & X & & \\
\hline 15B. & Have you been informed of the current existence of hazardous substances or petroleum products with respect to the Project or any facility located on the Project? & & x & & \\
\hline 16A. & Are there any environmental liens or governmental notification relating to past or current violations of environmental laws with respect to the Project or any facility located on the Project? & & x & & \\
\hline 16B. & Have you been informed of the past existence of environmental violations with respect to the Project or any facility located on the Project? & & x & & \\
\hline 16C. & Are you aware of any pending, threatened, or past litigation relevant to hazardous substances of petroleum products in, on or from the property? & & x & & \\
\hline
\end{tabular}
engineering environmental capital planning project management
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{2}{|r|}{QUESTION} & \multicolumn{3}{|l|}{RESPONSE} & \multirow[t]{2}{*}{COMMENTS} \\
\hline & & Y & N & U/NR & \\
\hline 16D. & Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the property? & & x & & \\
\hline 16E. & Are you aware of any notices from any governmental entity regarding any possible violation or environmental laws or possible liability relating to hazardous substances or petroleum products? & & x & & \\
\hline 17. & Have there been any environmental site assessments of the Project that indicated the presence of hazardous substances or petroleum products on, or contamination of, the Project or recommended further assessment of the Project? & & X & & \\
\hline 18. & Does the Project discharge waste water on or adjacent to the project, other than storm water, into a storm water sewer system? & & X & & \\
\hline 19. & Does the Project discharge waste water on or adjacent to the project, other than storm water, or into a sanitary system? & & X & & \\
\hline 20. & Have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the Project? & & x & & \\
\hline 21. & Is there a transformer, capacitor or any hydraulic equipment for which there are any records indicating the presence of PCBs? & & X & & \\
\hline 22. & Is there now or has there ever been any asbestos-containing materials (ACM), in any application, on the Project? & & x & & \\
\hline 23. & Has there ever been any asbestos-containing materials testing conducted on the Project? & & x & & \\
\hline 24. & Is there an asbestos Operations and Maintenance (O\&M) program in place at the Project? & & x & & \\
\hline 25. & Is there now or has there ever been any lead-based paint (LBP) applications on the Project? & & x & & \\
\hline 26. & Has there ever been lead-based paint testing conducted on the Project? & & X & & \\
\hline 27. & Is there a Lead Paint Operations and Maintenance (O\&M) Program in place at the Project? & & X & & \\
\hline 28. & Has the water at the Project ever been tested for lead? & X & & & In the 1980s. No lead ever found \\
\hline 29. & Has Radon testing ever been conducted at the Project? & & x & & \\
\hline 30. & Are there any other Operations and Maintenance (O\&M) programs in place that we should be made aware of? & & x & & \\
\hline
\end{tabular}
engineering environmental capital planning project management


Name (please print):

\section*{William R. Liesman}

Date (MM/DD/YYYY): 05/20/2016

\section*{Signature:}

\section*{William R. Liesman}
engineering | environmental \(\mid\) capital planning | project management

\section*{ASTM E1527-13 USER QUESTIONNAIRE PHASE I ENVIRONMENTAL SITE ASSESSMENT}

EMG has been retained to conduct a Phase I Environmental Site Assessment (ESA) on your behalf as contracted in EMG Project \#112427.15P. The Phase I ESA will involve site observations, interviews, and a review of available documentation. To ensure the success of the assessment, and in accordance with the ASTM E1527-13 Scope of Work, we are required to ask the following questions to the User of the report seeking to fulfill the User Requirements of the Standard. Please complete and return this questionnaire to Courtney Bartlett via email at cbartlett@emgcorp.com or via fax at 410-785-6220 (within two days of receipt).
\begin{tabular}{|c|c|}
\hline & Date: \\
\hline Company name: & \\
\hline Property Name/Street Address: & \\
\hline Property City/State/Zip: & \\
\hline Name of person completing questionnaire: & Phone Number: \\
\hline Role/Title: & Fax Number: \\
\hline Length of association with property: & E-mail address: \\
\hline Please check one: & User: \(\square \quad\) User Representative: \(\square\) \\
\hline
\end{tabular}

\section*{Signature:}

Directions: Please answer all questions to the best of your knowledge and in good faith. Mark the column corresponding to the appropriate response. Additional details necessary to explain any yes or unknown responses should be provided in the "Comments" column. Note: \(U\) indicates "Unknown", \(N R\) indicates "No Response" and " \(N / A\) " indicates not applicable.
\begin{tabular}{|l|l|l|l|l|l|l|}
\hline \multicolumn{2}{|c|}{ QUESTION } & \multicolumn{2}{|c|}{ RESPONSE } & \multicolumn{2}{|c|}{ COMMENTS } \\
\hline \multicolumn{2}{|c|}{} & Y & N & U & NR & \\
\hline 1 & \begin{tabular}{l} 
Are you aware of any pending, threatened, or past litigation relevant to \\
hazardous substances or petroleum products in, on, or from the property?
\end{tabular} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline 2 & \begin{tabular}{l} 
Are you aware of any pending, threatened, or past administrative \\
proceedings relevant to hazardous substances or petroleum products in, \\
on or from the property?
\end{tabular} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline 3 & \begin{tabular}{l} 
Are you aware of any notices from any governmental entity regarding any \\
possible violation of environmental laws or possible liability relating to \\
hazardous substances or petroleum products?
\end{tabular} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline
\end{tabular}

\section*{emg}
engineering |environmental \(\mid\) capital planning \(\mid\) project management
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{3}{|r|}{QUESTION} & \multicolumn{4}{|c|}{RESPONSE} & \multirow[t]{2}{*}{COMMENTS} \\
\hline & & & Y & N & U & NR & \\
\hline 4 & \multicolumn{2}{|l|}{Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline 5 & \multicolumn{2}{|l|}{Are you aware of any Activity and Use Limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline 6 & \multicolumn{2}{|l|}{As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline 7 & \multicolumn{2}{|l|}{Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline 8 & \multicolumn{2}{|l|}{Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline & 8 (a) & Do you know the past uses of the property? & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline & 8 (b) & Do you know of specific chemicals that are present or once were present at the property? & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline & 8 (c) & Do you know of spills or other chemical releases that have taken place at the property? & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline & 8 (d) & Do you know of any environmental cleanups that have taken place at the property? & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline 9 & \multicolumn{2}{|l|}{As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline
\end{tabular}

If you have access to any of the following helpful documents, please indicate them below and then send them to EMG via standard mail or e-mail along with this questionnaire. Mailing address: 10461 Mill Run Circle, Suite 1100, Owings Mills, MD 21117

\section*{Helpful Documents to be forwarded EMG:}
\(\square\) Environmental site assessment reports (i.e., Phase I, Phase II, tank testing results, radon, lead paint, or asbestos testing, etc.)
\(\square\) Environmental compliance audit reports; risk assessments; and recorded Activity and Use Limitations (AULs)
\(\square\) Environmental permits (i.e., solid waste disposal, hazardous waste disposal, wastewater, NPDES, underground injection, etc.)
\(\square\) Registrations for underground storage tanks (USTs) and aboveground storage tanks (ASTs)
engineering \(\mid\) environmental \(\mid\) capital planning \(\mid\) project management

\section*{Registrations for underground injection systems}Material safety data sheetsCommunity right-to-know planSafety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans, etcReports regarding hydrogeological or geotechnical conditions on the property and surrounding area

Notices/correspondence from any agency relating to past/current violations of environmental laws, or liens encumbering the propertyHazardous waste generator notices or reportsOther:

\title{
emg
}
engineering | environmental \(\mid\) capital planning \(\mid\) project management

\section*{ASTM E1527-13 OWNER QUESTIONNAIRE PHASE I ENVIRONMENTAL SITE ASSESSMENT}

EMG has been retained to conduct a Phase I Environmental Site Assessment (ESA) on your property as contracted in EMG Project \#112427.15P. The Phase I ESA will involve site observations, interviews, and a review of available documentation. To ensure the success of the assessment, and in accordance with the ASTM E1527-13 Scope of Work, we are required to ask the following questions to the Owner or Owner representative. Please complete and return this questionnaire to Courtney Bartlett via email at cbartlett@emgcorp.com or via fax at 410-785-6220 (within two days of receipt).

Date:

\section*{Company name:}

Property Name/Street Address:
Property City/State/Zip:
\begin{tabular}{|c|c|}
\hline Name of person completing questionnaire: & Phone Number: \\
\hline Role/Title: & Fax Number: \\
\hline Length of association with property: & E-mail address: \\
\hline Please check one: & Owner: \(\square\) Owner Representative: \(\square\) \\
\hline
\end{tabular}

\section*{Signature:}

Directions: Please answer all questions to the best of your knowledge and in good faith. Mark the column corresponding to the appropriate response. Additional details necessary to explain any yes or unknown responses should be provided in the "Comments" column. Note: \(U\) indicates "Unknown", NR indicates "No Response" and "N/A" indicates not applicable.
\begin{tabular}{|l|l|l|l|l|l|l|}
\hline \multicolumn{2}{|c|}{ QUESTION } & \multicolumn{2}{|c|}{ RESPONSE } & \multicolumn{2}{c|}{ COMMENTS } \\
\hline \multicolumn{1}{|c|}{\begin{tabular}{l} 
Are you aware of any pending, threatened, or past litigation relevant \\
to hazardous substances or petroleum products in, on, or from the \\
property?
\end{tabular}} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & N & U \\
\hline 2 & \begin{tabular}{l} 
Are you aware of any pending, threatened, or past administrative \\
proceedings relevant to hazardous substances or petroleum \\
products in, on or from the property?
\end{tabular} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline 3 & \begin{tabular}{l} 
Are you aware of any notices from any governmental entity regarding \\
any possible violation of environmental laws or possible liability \\
relating to hazardous substances or petroleum products?
\end{tabular} & \(\square\) & \(\square\) & \(\square\) & \(\square\) & \\
\hline
\end{tabular}

Interviews with Owners and Occupants: Section 10 of the ASTM E1527-13 Standard recommends that in addition to the three specific questions above, the Environmental Professional shall attempt to interview owners, operators, and occupants of the property to obtain information indicating recognized environmental conditions in connection with the property. As such, EMG is providing a Pre-Survey Questionnaire under separate cover to the Key Site Manager or other site representative as designated by either the current owner or the intended User of the assessment data.
engineering | environmental \(\mid\) capital planning | project management

If you have access to any of the following helpful documents, please indicate them below and then send them to EMG via standard mail or e-mail along with this questionnaire. Mailing address: 10461 Mill Run Circle, Suite 1100, Owings Mills, MD 21117

\section*{Helpful Documents to be forwarded EMG:}Environmental site assessment reports (i.e., Phase I, Phase II, tank testing results, radon, lead paint, or asbestos testing, etc.)Environmental compliance audit reports; risk assessments; and recorded Activity and Use Limitations (AULs)
Environmental permits (i.e., solid waste disposal, hazardous waste disposal, wastewater, NPDES, underground injection, etc.)
Registrations for underground storage tanks (USTs) and aboveground storage tanks (ASTs)Registrations for underground injection systemsMaterial safety data sheetsCommunity right-to-know planSafety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans, etcReports regarding hydrogeological or geotechnical conditions on the property and surrounding area
Notices/correspondence from any agency relating to past/current violations of environmental laws, or liens encumbering the propertyHazardous waste generator notices or reports
Other:

\section*{APPENDIX E:}

\section*{LABORATORY ANALYTICAL RESULTS}

\section*{No Documents Associated With This Appendix}

\section*{APPENDIX F:}

Peter Aldana, County Assessor

**The information provided here is deemed reliable, but is not guaranteed.

Peter Aldana, County Assessor

**The information provided here is deemed reliable, but is not guaranteed.

\title{
FIRE INSURANCE MAP RESEARCH RESULTS
}

Date: 2016-05-19

\section*{Order Number:20160518126 \\ 34155 Winchester Road, Riverside, CA, 92596}

\begin{abstract}
ERIS has searched our in-house collection of close to 1 million Fire Insurance Maps for the address at 34155 Winchester Road, Riverside, CA, 92596.
\end{abstract}

Please note that no information was found for your site or adjacent properties.

If you have any questions regarding the enclosed information, please do not hesitate to contact us.

Individual Fire Insurance Maps for the subject property and/or adjacent sites are included with the ERIS environmental database report to be used for research purposes only and cannot be resold for any other commercial uses other than for use in a Phase I environmental assessment.

Address: 38 Lesmill Road Unit 2, Toronto, ON M3B 2 T5
Phone: 416-510-5204 Fax: 416-510-5133
info@erisinfo.com www.erisinfo.com

EMG is an environmental consulting firm conducting an investigation on behalf of the property owner of current and historical conditions which could potentially impact the environmental condition of the following property:

34155 Winchester Road
Winchester, CA 92596
Through the Freedom of Information Act (FOIA), we request any available information on file which is related to potential environmental issues concerning the above-referenced property. Specifically, we request your assistance by providing us with information concerning existing or historical conditions for the above-referenced property, including:
1) How far back are records maintained by this Department?
2) Are there any required Department environmental permits, registrations, or notifications, and if any, the compliance status and any reported violations (including violation status)?
3) Are there any petroleum product/hazardous material storage tanks, both aboveground and underground?
4) Are there any releases of petroleum products and/or hazardous materials?

Any follow-up documentation may be returned via email, faxed to 410.785.6220, or emailed to:

\section*{rfi@emgcorp.com}

If you need additional information to complete this request, please contact me at 800.733.0660 x6547. Thank you for your prompt attention to this matter.

Sincerely, Kate Downey
Project Manager
EMG

\section*{APPENDIX G:} PREVIOUS ENVIRONMENTAL ASSESSMENTS

\section*{No Documents Associated With This Appendix}

\section*{APPENDIX H:}

\section*{DATABASE REPORT}

\begin{tabular}{ll} 
Project Property: & \begin{tabular}{l}
34155 Winchester Road \\
34155 Winchester Road \\
Riverside CA 92596 \\
\(120191.16 R 000-001.13\)
\end{tabular} \\
Project No: & Database Report \\
Report Type: & 20160518126 \\
Order No: & EMG, Inc \\
Requested by: & May 19, 2016
\end{tabular}

\section*{Ecolog ERIS Ltd.}

Environmental Risk Information
Service Ltd. (ERIS)
A division of Glacier Media Inc.
P: 1.866.517.5204
E: info@erisinfo.com
www.erisinfo.com

\section*{Table of Contents}
Table of Contents ..... 1
Executive Summary ..... 2
Executive Summary: Report Summary .....  3
Executive Summary: Site Report Summary - Project Property ..... 8
Executive Summary: Site Report Summary - Surrounding Properties ..... 9
Executive Summary: Summary by Data Source ..... 10
Map. ..... 11
Aerial. ..... 14
Detail Report ..... 15
Unplottable Summary ..... 16
Unplottable Report ..... 18
Appendix: Database Descriptions ..... 31
Definitions ..... 50

\section*{Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY}

Reliance on information in Report: This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as database review of environmental records.

License for use of information in Report: No page of this report can be used without this cover page, this notice and the project property identifier. The information in Report(s) may not be modified or re-sold.

Your Liability for misuse: Using this Service and/or its reports in a manner contrary to this Notice or your agreement will be in breach of copyright and contract and ERIS may obtain damages for such mis-use, including damages caused to third parties, and gives ERIS the right to terminate your account, rescind your license to any previous reports and to bar you from future use of the Service.

No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by EcoLog Environmental Risk Information Services Ltd ("ERIS") using various sources of information, including information provided by Federal and State government departments. The report applies only to the address and up to the date specified on the cover of this report, and any alterations or deviation from this description will require a new report. This report and the data contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein and does not constitute a legal opinion nor medical advice. Although ERIS has endeavored to present you with information that is accurate, EcoLog ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of EcoLog ERIS is limited to the monetary value paid for this report.

Trademark and Copyright: You may not use the ERIS trademarks or attribute any work to ERIS other than as outlined above. This Service and Report(s) are protected by copyright owned by EcoLog ERIS Ltd. Copyright in data used in the Service or Report(s) (the "Data") is owned by EcoLog ERIS or its licensors. The Service, Report(s) and Data may not be copied or reproduced in whole or in any substantial part without prior written consent of EcoLog ERIS.

\title{
Executive Summary
}

\section*{Property Information:}

Project Property:

Project No:

Coordinates:
\begin{tabular}{ll} 
Latitude: & 33.624545 \\
Longitude: & -117.098753 \\
UTM Northing: & \(3,720,531.94\) \\
UTM Easting: & \(490,840.40\) \\
UTM Zone: & UTM Zone 11S
\end{tabular}

Elevation:

Order Information:

Order No:
Date Requested:
Requested by:
Report Type:

\section*{Ancillary Products:}

Aerial Photographs
Fire Insurance Maps

34155 Winchester Road
34155 Winchester Road Riverside CA 92596
120191.16R000-001.13

Zone 1 s
1,458 FT

20160518126
May 18, 2016
EMG, Inc
Database Report

Historical Aerials
US Fire Insurance Maps

\section*{Executive Summary: Report Summary}

Database

\section*{Standard Environmental Records}

Federal
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline NPL & \(Y\) & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline PROPOSED NPL & \(Y\) & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline DELETED NPL & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SEMS & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SEMS ARCHIVE & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline CERCLIS & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline CERCLIS NFRAP & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline CERCLIS LIENS & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline RCRA CORRACTS & \(Y\) & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline RCRA TSD & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline RCRA LQG & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline RCRA SQG & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline RCRA CESQG & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline RCRA NON GEN & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline FED ENG & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline FED INST & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline ERNS 1982 TO 1986 & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline ERNS 1987 TO 1989 & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline ERNS & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline FED BROWNFIELDS & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline MLTS & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline
\end{tabular}

State
\begin{tabular}{lllllllll} 
RESPONSE & \(Y\) & 1 & 0 & 0 & 0 & 0 & 0 \\
ENVIROSTOR & \(Y\) & 1 & 0 & 0 & 0 & 0 & 0 \\
SWF/LF & \(Y\) & .5 & 0 & 0 & 0 & 0 & - \\
HWP & \(Y\) & 1 & 0 & 0 & 0 & 0 & 0 \\
LDS & \(Y\) & .5 & 0 & 0 & 0 & 0 & 0 & 0 \\
LUST & \(Y\) & .5 & 0 & 0 & 0 & 0 & 0 & 0
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Database & Searched & Search Radius & Project Property & Within
\[
0.12 m i
\] & \[
\begin{aligned}
& 0.12 m i \text { to } \\
& 0.25 \mathrm{mi}
\end{aligned}
\] & \[
\begin{aligned}
& 0.25 \mathrm{mi} \text { to } \\
& 0.50 \mathrm{mi}
\end{aligned}
\] & \[
\begin{aligned}
& 0.50 \mathrm{mi} \text { to } \\
& 1.00 \mathrm{mi}
\end{aligned}
\] & Total \\
\hline DLST & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline AST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline DELISTED TNK & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline UST CLOSURE & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline HHSS & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline LUR & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline HLUR & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline DEED & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline VCP & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline CLEANUP SITES & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline WIP & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline
\end{tabular}

\section*{Tribal}
\begin{tabular}{lllllllll} 
INDIAN LUST & \(Y\) & .5 & 0 & 0 & 0 & 0 & - \\
INDIAN UST & \(Y\) & .25 & 0 & 0 & 0 & - & 0 \\
DELISTED ILST & \(Y\) & .5 & 0 & 0 & 0 & 0 & - \\
DELISTED IUST & \(Y\) & .25 & 0 & 0 & 0 & - & 0
\end{tabular}

\section*{County}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline ALAMEDA LOP & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline ALAMEDA UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline AMADOR CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline BUTTE CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline CALAVERAS CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline CALAVERAS LF & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline CALAVERAS LUST & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline COLUSA CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline CONTRACO CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline DELNORTE CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline ELDORADO CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline FRESNO CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline HUMBOLDT CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline IMPERIAL CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline INYO CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline KERN CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline KERN UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline KINGS CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline LAKE CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline ELSEGUNDO UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline TORRANCE UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline LA HMS & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Database & Searched & Search Radius & Project Property & \[
\begin{aligned}
& \text { Within } \\
& 0.12 m i
\end{aligned}
\] & \[
\begin{aligned}
& 0.12 \mathrm{mi} \text { to } \\
& 0.25 \mathrm{mi}
\end{aligned}
\] & \[
\begin{aligned}
& 0.25 \mathrm{mi} \text { to } \\
& 0.50 \mathrm{mi}
\end{aligned}
\] & \[
\begin{aligned}
& 0.50 \mathrm{mi} \text { to } \\
& 1.00 \mathrm{mi}
\end{aligned}
\] & Total \\
\hline LA LONGB UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline LA SWF & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline MADERA CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline MARIN CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline MERCED CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline MONO CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline MONTEREY CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline NAPA UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline NEVADA CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline ORANGE AST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline ORANGE UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline PLACER CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline RIVERSIDE LOP & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline RIVERSIDE UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SACRAMENTO HAZ & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SACRAMENTO TOX & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SANBERN CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANDIEGO HAZ & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANDIEGO SAM & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SANDIEGO SWF & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SANFRAN AST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANFRAN CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANFRAN LOP & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SANFRAN UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANJOAQUIN AST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANJOAQUIN UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANJOAQUIN HW & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SANMATEO CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANMATEO LOP & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SANTACLARA CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANTACLARA LO & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SANTACRUZ CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SHASTA CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANLUISOB CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SOLANO CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SOLANO LOP & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SOLANO UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SONOMA CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SONOMA LOP & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline SONOMA PETAL & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SUTTER CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Database & Searched & \begin{tabular}{l}
Search \\
Radius
\end{tabular} & Project Property & Within
\[
0.12 m i
\] & \[
\begin{aligned}
& 0.12 m i ~ t o ~ \\
& 0.25 m i
\end{aligned}
\] & \[
\begin{aligned}
& 0.25 \mathrm{mi} \text { to } \\
& 0.50 \mathrm{mi}
\end{aligned}
\] & \[
\begin{aligned}
& 0.50 \mathrm{mi} \text { to } \\
& 1.00 \mathrm{mi}
\end{aligned}
\] & Total \\
\hline TUOLUMNE CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline VENTURA CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline OXNARD CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline VENTURA INUST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline VENTURA HLUFT & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline YOLO UST & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline YUBA CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline BKRSFIELD CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SANTACLARA GIL & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline ALPINE CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline GLENN CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline LASSEN CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline MARIPOSA CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline SISKIYOU CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline STANISLAUS CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline TRINITY CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline TULARE CUPA & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline
\end{tabular}

\section*{Additional Environmental Records}

\section*{Federal}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline FINDS/FRS & \(Y\) & \(P O\) & 0 & - & - & - & - & 0 \\
\hline TRIS & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline HMIRS & \(Y\) & . 125 & 0 & 0 & - & - & - & 0 \\
\hline NCDL & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline ODI & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline IODI & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline TSCA & \(Y\) & . 125 & 0 & 0 & - & - & - & 0 \\
\hline HIST TSCA & \(Y\) & . 125 & 0 & 0 & - & - & - & 0 \\
\hline FTTS ADMIN & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline FTTS INSP & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline PRP & \(Y\) & \(P O\) & 0 & - & - & - & - & 0 \\
\hline SCRD DRYCLEANER & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline ICIS & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline FED DRYCLEANERS & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline
\end{tabular}

\section*{State}
\begin{tabular}{lccccccc} 
\\
DRYCLEANERS & \(Y\) & .25 & 0 & 0 & 0 & - & - \\
INSP COMP ENF & \(Y\) & 1 & 0 & 0 & 0 & 0 & 0 \\
CDL & \(Y\) & .125 & 0 & 0 & - & - & 0 \\
SCH & \(Y\) & 1 & 0 & 0 & 0 & 0 & 0 \\
CHMIRS & \(Y\) & \(P O\) & 0 & - & - & 0 & - \\
SWAT & \(Y\) & .5 & 0 & 0 & 0 & 0 & 0
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Database & Searched & Search Radius & Project Property & \[
\begin{aligned}
& \text { Within } \\
& \text { 0.12mi }
\end{aligned}
\] & \[
\begin{aligned}
& 0.12 \mathrm{mi} \text { to } \\
& 0.25 \mathrm{mi}
\end{aligned}
\] & \[
\begin{aligned}
& 0.25 \mathrm{mi} \text { to } \\
& 0.50 \mathrm{mi}
\end{aligned}
\] & \[
\begin{aligned}
& 0.50 \mathrm{mi} \text { to } \\
& 1.00 \mathrm{mi}
\end{aligned}
\] & Total \\
\hline HAZNET & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline CDO/CAO & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline HIST CHMIRS & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline HIST MANIFEST & \(Y\) & PO & 0 & - & - & - & - & 0 \\
\hline
\end{tabular}

Tribal
No Tribal additional environmental record sources available for this State.

County
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline LA SML & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline RIVERSIDE HZH & \(Y\) & . 125 & 0 & 0 & - & - & - & 0 \\
\hline RIVERSIDE HWG & \(Y\) & . 125 & 0 & 0 & - & - & - & 0 \\
\hline SANJOAQUIN HM & \(Y\) & . 125 & 0 & 0 & - & - & - & 0 \\
\hline VENTURA HAZR & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline HW INACTIVE & \(Y\) & . 5 & 0 & 0 & 0 & 0 & - & 0 \\
\hline DELISTED COUNTY & \(Y\) & . 25 & 0 & 0 & 0 & - & - & 0 \\
\hline
\end{tabular}

\footnotetext{
* PO - Property Only
* 'Property and adjoining properties' database search radii are set at 0.25 miles.
}

\section*{Executive Súmmary: Site Report Súmmary - Prōject Property}
\begin{tabular}{llll} 
Map & DB & Company/Site Name & Address \\
Key & & & Dir/Dist mi \begin{tabular}{c} 
Elev \\
diff ft
\end{tabular} Nage \\
Number
\end{tabular}

No records found in the selected databases for the project property.

\section*{Executive Súmmary: Site Report Súmmary - Súrrounding Properties}
\begin{tabular}{llll} 
Map \\
Key & DB & Company/Site Name & Address
\end{tabular} Dir/Dist mi Elev \begin{tabular}{c} 
Page \\
Diff ft
\end{tabular}

No records found in the selected databases for the surrounding properties.

\section*{Executive Súmmary: Súmmary by Dāta Source}

No records found in the selected databases for the project property or surrounding properties.
\(117^{\circ} 5^{\prime} \mathrm{W}\)



\section*{Map : 0.25 Mile Radius}

Order No: 20160518126
Address: 34155 Winchester Road, Riverside, CA, 92596



\section*{Aerial}

\section*{Detail Report}
\begin{tabular}{llll} 
Map Key & \begin{tabular}{l} 
Number of \\
Records
\end{tabular} & \begin{tabular}{l} 
Direction/ \\
Distance \(m i\)
\end{tabular} & Elevation
\end{tabular}\(\quad\) Site \(\quad\) DB

No records found in the selected databases for the project property or surrounding properties.

\title{
Unplottable Súmmary
}

Total: 15 Unplottable sites
\begin{tabular}{|c|c|c|c|c|c|}
\hline DB & Company Name/Site Name & Address & City & Zip & ERIS ID \\
\hline CDL & & ANTELOPE ROAD, 1/4 MILE S. OF KELLER & MURRIETA CA & 92592 & 820126139 \\
\hline CLEANUP SITES & \begin{tabular}{l}
DOUBLE BUTTE \\
LANDFILL (CLOSED)
\end{tabular} & Grand Ave; 600 Ft W Winchester & WINCHESTER CA & & 820150507 \\
\hline ENVIROSTOR & ELEMENTARY SCHOOL NO. 10 & BEELER ROAD/PATTON AVENUE & WINCHESTER CA & 92596 & 820293357 \\
\hline ENVIROSTOR & PROPOSED ELEMENTARY SCHOOL NO. 10-A & NORTHEAST CORNER ELLIOTT ROAD AND PAT ROAD & WINCHESTER CA & 92596 & 820300702 \\
\hline HHSS & ALIVE POLARITYFLEETMAINT SH & \begin{tabular}{l}
29480 MURRIETA HOT \\
SPRINGS RD WINCHESTER RD
\end{tabular} & MURRIETA CA & 92362 & 822979831 \\
\hline HHSS & LAWRENCE T LASAGNA & 30885 NICOLAS RD WINCHESTER RD & MURRIETA CA & 92362 & 822953352 \\
\hline LDS & \begin{tabular}{l}
DOUBLE BUTTE \\
LANDFILL (CLOSED)
\end{tabular} & GRAND AVE; 600 FT W WINCHESTER & WINCHESTER CA & & 820224599 \\
\hline RCRA SQG & NORTH ORANGE COAST PAINTING & WINCHESTER RD 1 MILE E OF HWY HUNTER POINT HOUSING COMPLEX & FRENCH VALLEY CA & 92563 & 810613800 \\
\hline RIVERSIDE HZH & Sprint Cell Site RV54XC505 & 36625 Pourroy Rd & Winchester CA & 92596 & 820088238 \\
\hline RIVERSIDE HZH & T-Mobile West Corp(IE25829A) & 36627 Pourroy Rd & Murrieta CA & 92563 & 820086836 \\
\hline RIVERSIDE HZH & EMWD Pourroy Lift Station & Pourroy Rd & Murrieta CA & 92563 & 820085330 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|}
\hline SCH & PROPOSED ELEMENTARY SCHOOL NO. 10-A & NORTHEAST CORNER ELLIOTT ROAD AND PAT ROAD & WINCHESTER CA & 92596 & 820263437 \\
\hline SCH & ELEMENTARY SCHOOL NO. 10 & BEELER ROAD/PATTON AVENUE & WINCHESTER CA & 92596 & 820264673 \\
\hline SWAT & RIVERSIDE COUNTYDOUBLE BUTTE LANDFILL & \begin{tabular}{l}
GRAND AVE 600 FT. W. WINCHESTER RD. \\
WINCHESTER, CA 92396
\end{tabular} & CA & & 822570421 \\
\hline SWF/LF & Double Butte Disposal Site & Grand Ave; 600 Ft W Winchester & Winchester CA & & 820220593 \\
\hline
\end{tabular}

\section*{Unplottable Report}

Site:
ANTELOPE ROAD, 1/4 MILE S. OF KELLER MURRIETA CA 92592
\begin{tabular}{llll} 
Clue: & 1996-01-004 & Date: & 1/2/1996 \\
Lab Type: & L & & County: \\
Lab Type Description: & & Illegal Drug Lab - location where an illegal drug lab was operated or drug lab equipment and/or \\
& & materials were stored.
\end{tabular}

Site: DOUBLE BUTTE LANDFILL (CLOSED) Grand Ave; 600 Ft W Winchester WINCHESTER CA CLEANUP SITES

Global ID:
Case Type:
Status:
Status Date:
RB Case Number:
LOC Case Number:
CUF Case:
County:
Latitude:
Longitude:
Lead Agency:
Case Worker:
Local Agency:
File Location:
Potential Cntm of Concrn:
Potential Media Affected:

\section*{Site History:}

The Double Butte Sanitary Landfill is owned and was operated by the Riverside County Waste Management Department. The site is located in Section 20, T5S, R2W, Riverside County, California. It was operated as a Class III non-hazardous municipal solid waste landfill from 1973 to 1995 . The landfill covers about 580 acres, of which 112 acres were filled with wastes. The landfill site lies in the San Jacinto Ground Water Basin near Winchester and west of Hemet, California. It is divided into four fill areas along the eastern margin of the main valley and one other small fill area in the southwest corner. The types of waste received consisted of 42 percent residential, 42 percent commercial, 11 percent demolition, and 5 percent special. The site underwent closure from November 1995 through May 1997. The Riverside County Waste Management Dept. is currently conducting a Corrective Action Program for groundwater monitoring at the site.

\section*{Activities}

Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
--
Action Type:

\section*{Date:}

Action:
--
Action Type:

\section*{RESPONSE}

1988-01-19 00:00:00
Site Assessment Report
ENFORCEMENT
1994-04-22 00:00:00
Waste Discharge Requirements
ENFORCEMENT
1998-11-20 00:00:00
Waste Discharge Requirements
--
ENFORCEMENT

Date:

\section*{Action:}

Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
--
Action Type:

\section*{Date:}

Action:
--
Action Type:

\section*{Date:}

Action:
--
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:

1998-12-07 00:00:00
Waste Discharge Requirements
ENFORCEMENT
1999-02-11 00:00:00
Staff Letter
--
ENFORCEMENT
1999-06-07 00:00:00
Staff Letter
--
ENFORCEMENT
2000-03-16 00:00:00
Staff Letter
ENFORCEMENT
2000-06-07 00:00:00
Staff Letter
ENFORCEMENT
2000-10-11 00:00:00
Staff Letter
ENFORCEMENT
2002-02-08 00:00:00
Staff Letter
ENFORCEMENT
2002-10-01 00:00:00
13267 Requirement
--
ENFORCEMENT
2002-10-10 00:00:00
Clean-up and Abatement Order
--
ENFORCEMENT
2003-09-19 00:00:00
Staff Letter
--
ENFORCEMENT
2004-08-30 00:00:00
Staff Letter
--
2006-12-29 00:00:00
Staff Letter
ENFORCEMENT
2009-07-29 00:00:00
Staff Letter
RESPONSE
2010-10-31 00:00:00
Monitoring Report - Semi-Annually
ENFORCEMENT
2011-02-16 00:00:00
Staff Letter
RESPONSE
2011-04-30 00:00:00
Monitoring Report - Semi-Annually

Action Type:
Date:
Action:

\section*{--}

\section*{Action Type:}

\section*{Date:}

Action:
--
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
--
Action Type:
Date:
Action:
Action Type:
Date:
Action:

\section*{--}

Contact Information

\section*{--}

Contact Type:
Contact Name: Organization Name:
Address:
City:
Email:
Phone Number:

RESPONSE
2011-04-30 00:00:00
Monitoring Report - Annually
--
RESPONSE
2011-10-31 00:00:00
Monitoring Report - Semi-Annually
--
RESPONSE
2011-12-31 00:00:00
Monitoring Report - Annually
--
ENFORCEMENT
2012-07-03 00:00:00
Staff Letter
--
ENFORCEMENT
2012-10-16 00:00:00
Technical Correspondence / Assistance / Other
--
ENFORCEMENT
2012-12-19 00:00:00
Technical Correspondence / Assistance / Other
--
ENFORCEMENT
2013-03-07 00:00:00
Technical Correspondence / Assistance / Other
--
--
Regional Board Caseworker
JOANNE LEE
SANTA ANA RWQCB (REGION 8)
3737 MAIN STREET, SUITE 500
RIVERSIDE
jplee@waterboards.ca.gov
--

Site: ELEMENTARY SCHOOL NO. 10 BEELER ROAD/PATTON AVENUE WINCHESTER CA 92596

Estor/EPA ID:
Site Code:
Cleanup Status:
Site Type:
Potential Media Affected:
Past Uses Caused Contam:
APN:
National Priorities List:
Cleab up Oversight Agenci:
Special Program:
Funding:
Acres:
School District:
Assembly District:
Senate District:
Zip:

60000105
404639
NO FURTHER ACTION AS OF 6/1/2006
SCHOOL
NO MEDIA AFFECTED
AGRICULTURAL - ROW CROPS
461-18-0036
NO
DTSC - SITE CLEANUP PROGRAM - LEAD
VOLUNTARY CLEANUP PROGRAM
SCHOOL DISTRICT
12 ACRES
HEMET UNIFIED SCHOOL DISTRICT
67
28
92596

POTENTIAL CONTAMI:
METALS: Arsenic, Lead, Total Chromium (1:6 ratio \(\mathrm{Cr} \mathrm{VI}: \mathrm{Cr}\) III)
ORGANOCHLORINE PESTICIDES (8081 OCPS): Chlordane, DDD, DDE, DDT, Dieldrin, Endrin

\section*{SITE HISTORY:}

The approximately 12-acre Site is surrounded by vacant land, slated for residential housing. The Site has been historically utilized for agricultural activities, indicating potential chemicals of concern.

\section*{Facility Information}
--
Status:
Summary Link:

\section*{--}

\section*{Completed Activities}

\section*{Doc Link:}

Area Name:

\section*{Sub Area:}

Document Type:
Date Completed:
Comments:
Activity Type:
--
Doc Link:
Area Name:
Sub Area:
Document Type:
Date Completed:
Comments:
Activity Type:
Doc Link:
Area Name:
Sub Area:
Document Type: Date Completed: Comments:
Activity Type:

SCHOOL EVALUATION
NO FURTHER ACTION
http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000105
--
http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60000105\&doc_id=60088 79

Preliminary Endangerment Assessment Report
1/18/2006
NFA
Completed Activities
--
--

Site: PROPOSED ELEMENTARY SCHOOL NO. 10-A NORTHEAST CORNER ELLIOTT ROAD AND PAT ROAD WINCHESTER CA 92596

ENVIROSTOR

Estor/EPA ID:
Site Code:
Cleanup Status:
Site Type:
Potential Media Affected:
Past Uses Caused Contam:
APN:
National Priorities List:
Cleab up Oversight Agenci:
Special Program:
Funding:
Acres:
School District:
Assembly District:
Senate District:
Zip:

60001559
404867
NO FURTHER ACTION AS OF 1/19/2012
SCHOOL
NO MEDIA AFFECTED
NONE, WAREHOUSING
480-030-025, 480-030-026
NO
DTSC - SITE CLEANUP PROGRAM - LEAD
RESPONSIBLE PARTY
17.42 ACRES

MENIFEE UNION SCHOOL DISTRICT
67
28
92596

\section*{POTENTIAL CONTAMI:}

LEAD

\section*{SITE HISTORY:}

The Site is currently vacant undeveloped land. Dry land grain farming was condcted on the Site in the late 1970s, early 1980s. Two residential dwellings were located on the Site between about 1986 and 2006, as well as what appears to be a barn and horse stables. Since abut 2006, the Site has been vacant.

\section*{Facility Information}
--
Program Type:
SCHOOL EVALUATION
Status: NO FURTHER ACTION
Summary Link:
http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60001559

\section*{Completed Activities}
--
Doc Link:
http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60001559\&doc_id=60280 911
Area Name:

\section*{Sub Area:}

\section*{Document Type:}

Phase 1
Date Completed:
Comments:

Activity Type: 11/15/2011
The Report was considered to be a Phase I Addendum due to the inclusion of samping results for lead from lead-based paint and OCPs from termiticides. DTSC approved the Phase I Addendum with a No Further Action determination Completed Activities

\section*{Site: ALIVE POLARITY-FLEETMAINT SH}

29480 MURRIETA HOT SPRINGS RD WINCHESTER RD MURRIETA CA 92362
HHSS
County:
Pdf File Url: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001f88d.pdf

\section*{Site: LAWRENCE T LASAGNA}

30885 NICOLAS RD WINCHESTER RD MURRIETA CA 92362
County:
Pdf File UrI:
http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001f7ab.pdf

Site: DOUBLE BUTTE LANDFILL (CLOSED)
GRAND AVE; 600 FT W WINCHESTER GRAND AVE; 600 FT W WINCHESTER WINCHESTER CA

Facility ID:
Site Facility Type:
Cleanup Status:
Cleanup Status Detail:
Cleanup History Link:
Report Link:
File Location:
County:
DWR Grndwtr Sub Basin:
RB Watershed:
Future LU Reptd at Closure:
Potential Contaminants:
Beneficial Use:
Post Closure Site Mgmt R:

L10004864228
LAND DISPOSAL SITE
OPEN - CLOSED/WITH MONITORING
OPEN - CLOSED/WITH MONITORING AS OF 1/1/1965
http://geotracker.waterboards.ca.gov/profile_report_include.asp?global_id=L10004864228\&tabnam e=regulatoryhistory
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=L10004864228
RIVERSIDE
San Jacinto Valley - Perris - Winchester (802.13)
NONE SPECIFIED
NONE SPECIFIED

\section*{SITE HISTORY:}

The Double Butte Sanitary Landfill is owned and was operated by the

Riverside County Waste Management Department. The site is located in Section
20, T5S, R2W, Riverside County, California. It was operated
as a Class III non-hazardous municipal solid waste landfill from 1973 to 1995.
The landfill covers about 580 acres, of which 112 acres were filled with wastes. The landfill site lies in the San Jacinto Ground Water Basin near Winchester and west of Hemet, California. It is divided into four fill areas along the eastern margin of the main valley and one other small fill area in the southwest corner. The types of waste received consisted of 42 percent residential, 42 percent commercial, 11 percent demolition, and 5 percent special. The site underwent closure from November 1995 through May 1997.

The Riverside County Waste Management Dept. is currently conducting a Corrective Action Program for groundwater monitoring at the site.

\section*{Cleanup History}

\section*{Date:}

\section*{Status:}

NO STATUS HISTORY HAS BEEN ENTERED FOR THIS SITE

\section*{Regulatory Activities}
--

\section*{Action Type:}

Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:
--
Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:
--
--
ENFORCEMENT/ORDERS
Staff Letter
12/29/2006
12/29/2006
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6117145
--
ENFORCEMENT/ORDERS
Clean-up and Abatement Order
10/10/2002
10/10/2002
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6259547

\section*{OTHER REGULATORY ACTIONS}

Technical Correspondence / Assistance / Other
12/19/2012
12/19/2012
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6145595
--

\section*{ENFORCEMENT/ORDERS}

Staff Letter
2/16/2011
2/16/2011
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6128958
--
ENFORCEMENT/ORDERS
Staff Letter
2/8/2002
2/8/2002
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6119413
--
ENFORCEMENT/ORDERS

\section*{Staff Letter}

6/7/2000
6/7/2000
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6118924

Action Type:

\section*{Action:}

Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:
Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{Action Type:}

Action:
Action Date:
Received Issue Date:
Doc Link:
--
Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:
--
Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

ENFORCEMENT/ORDERS
Staff Letter
2/11/1999
2/11/1999
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6116256
--
RESPONSE REQUESTED - OTHER
Other Report / Document
12/10/2010

OTHER REGULATORY ACTIONS
Technical Correspondence / Assistance / Other
3/7/2013
3/7/2013
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6158974
--
RESPONSE REQUESTED - REPORTS
Monitoring Report - Annually
12/31/2011
1/3/2012

\section*{RESPONSE REQUESTED - REPORTS}

Monitoring Report - Semi-Annually
10/31/2010
10/31/2010
--
ENFORCEMENT/ORDERS
Staff Letter
7/29/2009
7/29/2009
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6116889

RESPONSE REQUESTED - REPORTS
Monitoring Report - Semi-Annually
4/30/2011
4/30/2011
--
ENFORCEMENT/ORDERS
Waste Discharge Requirements
12/7/1998
12/7/1998
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6030938

ENFORCEMENT/ORDERS
Waste Discharge Requirements
11/20/1998
11/20/1998
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6030937
--
OTHER REGULATORY ACTIONS
Technical Correspondence / Assistance / Other
10/16/2012
10/16/2012
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:
--
Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:
Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:
--
Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:
--
Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:
Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{--}

Action Type:
_id=6239315

\section*{ENFORCEMENT/ORDERS}

Staff Letter
7/3/2012
7/3/2012
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6128451

RESPONSE REQUESTED - REPORTS
Monitoring Report - Semi-Annually
10/31/2011
10/31/2011

\section*{ENFORCEMENT/ORDERS}

13267 Requirement
10/1/2002
10/1/2002
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6259548
--

\section*{ENFORCEMENT/ORDERS}

Staff Letter
3/16/2000
3/16/2000
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6118899

\section*{ENFORCEMENT/ORDERS}

Staff Letter
6/7/1999
6/7/1999
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6116708

\section*{ENFORCEMENT/ORDERS}

Staff Letter
8/30/2004
8/30/2004
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6117561

ENFORCEMENT/ORDERS
Waste Discharge Requirements
4/22/1994
4/22/1994
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6030933
--
RESPONSE REQUESTED - REPORTS
Monitoring Report - Annually
4/30/2011
4/30/2011
--
ENFORCEMENT/ORDERS
Staff Letter
10/11/2000
10/11/2000
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6118968

ENFORCEMENT/ORDERS

Action:
Action Date:
Received Issue Date:
Doc Link:

\section*{Action Type:}

Action:
Action Date:
Received Issue Date:
Doc Link:

Action Type:
Action:
Action Date:
Received Issue Date:
Doc Link:

Waste Discharge Requirements
11/20/1998
11/20/1998
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6030935
--
RESPONSE REQUESTED - REPORTS
Site Assessment Report
1/19/1988
1/19/1988
http://geotracker.waterboards.ca.gov/view_documents_all.asp?global_id=L10004864228\&doc_id=5 725994

\section*{ENFORCEMENT/ORDERS}

Staff Letter
9/19/2003
9/19/2003
http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228\&enforcement _id=6118511

Site: NORTH ORANGE COAST PAINTING
WINCHESTER RD 1 MILE E OF HWY HUNTER POINT HOUSING COMPLEX FRENCH
RCRA SQG VALLEY CA 92563
\begin{tabular}{ll} 
EPA Handler ID: & CA \\
Current Site Name: & NO \\
Generator Status Universe: & Sm \\
Land Type: & Priv \\
Activity Location: & CA \\
TSD Activity: & N \\
Mixed Waste Generator: & N \\
Importer Activity: & N \\
Transporter Activity: & N \\
Transfer Facility: & N \\
Recycler Activity: & N \\
Onsite Burner Exemption: & N \\
Furnace Exemption: & N \\
Underground Inject Activity: & N \\
Rece Waste From Off Site: & N
\end{tabular}

Rece Waste From Off Site:
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address:
Contact Name:
Contact Address:
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator:
Owner/Operator Name:
Owner/Operator Address:
Owner/Operator Phone:
Owner/Operator Type:
Date Became Current:
Date Ended Current:

N
CAR000120980
NORTH ORANGE COAST PAINTING
Small Quantity Generator
Private
CA
N
N
N
N
N
N

N

N

NAICS Information
Handler Information

Date Received:
Facility Name:
Classification:
20020516
NORTH ORANGE COAST PAINTING
Small Quantity Generator
Hazardous Waste Information
--
Waste Code:
Waste:
D001
IGNITABLE WASTE
--
--
Violation/Evaluation
Information

Site: \(\quad\) Sprint Cell Site RV54XC505
36625 Pourroy Rd Winchester CA 92596
RIVERSIDE HZH

Site: T-Mobile West Corp(IE25829A)
36627 Pourroy Rd Murrieta CA 92563
RIVERSIDE HZH

Site: EMWD Pourroy Lift Station
Pourroy Rd Murrieta CA 92563
RIVERSIDE HZH

Site: PROPOSED ELEMENTARY SCHOOL NO. 10-A
NORTHEAST CORNER ELLIOTT ROAD AND PAT ROAD WINCHESTER CA 92596
SCH

ESTOR/EPA ID:
Site Code:
Status:
Cleanup Status:
Program Type:
Site Type:
National Priorities List:
CI Up Oversight Agencies:
Special Program:
County:
Funding:
APN:
Past Use Caused Contam:
Potential Contam of Cncrn:
Potential Media Affected:
Acres:
School District:
Summary Link:
Assembly District:
Senate District:
Latitude:
Longitude:

60001559
404867
NO FURTHER ACTION
NO FURTHER ACTION AS OF 1/19/2012
SCHOOL EVALUATION
SCHOOL
NO
DTSC - SITE CLEANUP PROGRAM - LEAD
RIVERSIDE
RESPONSIBLE PARTY
480-030-025, 480-030-026
NONE, WAREHOUSING
LEAD
NO MEDIA AFFECTED
17.42 ACRES

MENIFEE UNION SCHOOL DISTRICT
http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60001559
67
28
33.6207
-117.1089

\section*{SITE HISTORY:}

The Site is currently vacant undeveloped land. Dry land grain farming was condcted on the Site in the late 1970s, early 1980s. Two
residential dwellings were located on the Site between about 1986 and 2006, as well as what appears to be a barn and horse stables. Since abut 2006, the Site has been vacant.

\section*{Completed Activities}
\begin{tabular}{|c|c|}
\hline -- & -- \\
\hline Date Completed: & 11/15/2011 \\
\hline Doc Link: & http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60001559\&doc_id=60280 911 \\
\hline \multicolumn{2}{|l|}{Area Name:} \\
\hline \multicolumn{2}{|l|}{Sub Area:} \\
\hline Document Type: & Phase 1 \\
\hline Comments: & The Report was considered to be a Phase I Addendum due to the inclusion of samping results for lead from lead-based paint and OCPs from termiticides. DTSC approved the Phase I Addendum with a No Further Action determination \\
\hline -- & -- \({ }^{\text {- }}\) \\
\hline \multicolumn{2}{|l|}{Site: ELEMENTARY SCHOOL NO. 10} \\
\hline \multicolumn{2}{|l|}{BEELER ROAD/PATTON AVENUE WINCHESTER CA 92596 SCH} \\
\hline ESTOR/EPA ID: & 60000105 \\
\hline Site Code: & 404639 \\
\hline Status: & NO FURTHER ACTION \\
\hline Cleanup Status: & NO FURTHER ACTION AS OF 6/1/2006 \\
\hline Program Type: & SCHOOL EVALUATION \\
\hline Site Type: & SCHOOL \\
\hline National Priorities List: & NO \\
\hline CI Up Oversight Agencies: & DTSC - SITE CLEANUP PROGRAM - LEAD \\
\hline Special Program: & VOLUNTARY CLEANUP PROGRAM \\
\hline County: & RIVERSIDE \\
\hline Funding: & SCHOOL DISTRICT \\
\hline APN: & 461-18-0036 \\
\hline Past Use Caused Contam: & AGRICULTURAL - ROW CROPS \\
\hline Potential Contam of Cncrn: & METALS: Arsenic, Lead, Total Chromium (1:6 ratio Cr VI:Cr III) \\
\hline & ORGANOCHLORINE PESTICIDES (8081 OCPS): Chlordane, DDD, DDE, DDT, Dieldrin, Endrin \\
\hline Potential Media Affected: & NO MEDIA AFFECTED \\
\hline Acres: & 12 ACRES \\
\hline School District: & HEMET UNIFIED SCHOOL DISTRICT \\
\hline Summary Link: & http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000105 \\
\hline Assembly District: & 67 \\
\hline Senate District: & 28 \\
\hline Latitude: & 33.6943 \\
\hline Longitude: & -117.1044 \\
\hline
\end{tabular}

\section*{SITE HISTORY:}

The approximately 12-acre Site is surrounded by vacant land, slated for residential housing. The Site has been historically utilized for agricultural activities, indicating potential chemicals of concern.

\section*{Completed Activities}
\begin{tabular}{ll}
-- & -- \\
Date Completed: & \(1 / 18 / 2006\) \\
Doc Link: & \(\mathrm{http}: / / w w w . e n v i r o s t o r . d t s c . c a . g o v / p u b l i c / f i n a l \_d o c u m e n t s 2 . a s p ? g l o b a l \_i d=60000105 \& d o c \_i d=60088\) \\
& 79 \\
Area Name: & \\
Sub Area: & Preliminary Endangerment Assessment Report \\
\begin{tabular}{l} 
Document Type: \\
Comments:
\end{tabular} & NFA \\
-- & -- \\
Date Completed: & \(10 / 19 / 2005\) \\
Doc Link: & \\
Area Name: & \\
\begin{tabular}{l} 
Sub Area: \\
Document Type: \\
Comments:
\end{tabular} & Preliminary Endangerment Assessment Workplan \\
& Tech Memo Approved
\end{tabular}
--

Date Completed:
Doc Link:
7/15/2005
http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60000105\&enforcement_i \(d=6007449\)
Area Name:
Sub Area:
Document Type: Environmental Oversight Agreement
Comments:

\section*{Site: RIVERSIDE COUNTY-DOUBLE BUTTE LANDFILL}

GRAND AVE 600 FT. W. WINCHESTER RD. WINCHESTER, CA 92396 CA

Rank:
SWIS Number:
Report Status Code:
Report Status:
Transcribe Source:
Site Classification Code:
Site Classification:
Activity Status Code:
Activity Description:
Character of Site Code:
Character of Site:
Size of Site Code:
Size of Site:
Proposal Status:
Site Leak:
Site Leak Desc:
Type of Leak:
Enforce Action:
Enforce Action Desc:
Waste Management Unit:
Waste Discharger Sys NO:
Initial Notif Date:
Proposal Due Date:
Report Due Date: 07/01/87
Anticipated Rprt Submit Dt: 01/19/88
Report Received Date:
01/27/88
Report Target Review Date: 02/01/91
Report Resubmitted Due Date: 01/01/91
Report Resubmitted Rcvd Dt: 08/19/88
Report Approval Date:
Anticip Proposal Submit Dt:
Proposal Received Date:
Proposal Target Review Date:
Proposal Status Code:
Proposal Resubmitted Due Dt:
Proposal Resubmitted
Received Due Date:
Proposal Accepted Date:
Exemption Questionnaire
Approved Date:
Waiver Approved Date:
Type of Leak Code:
DHS \& CWMB Notif Date:
Report Summ Sent Date:
Monitor Program Revise Date:
Revise WDR Target Date:
Hazardous Waste Surface:
Above Reg Level Surface:
Below Reg Level Surface:
Hazardous Waste Ground:

Above Reg Level Ground:
Below Reg Level Ground:
Hazardous Waste Vadose:
Above Reg Level Vadose:
Below Reg Level Vadose:
Surface:
Ground:
Vadose:
Operator Name:
REIVERSIDE COUNTY
Agency Name:
County Number:
County Name:
Regional Board Contact:
Region:
Remarks:

\section*{RIVERSIDE}

\section*{SANTA ANA REGION 8}

Requested follow up quarterly ground water monitoring necessary to complete the SWAT was received by March 1990. County has been requested to conduct Subchapter 15 water level/water quality monitoring, and advised that failure to do so will result in enforcement action. Target date for final report review is Feb.1, 1991. Time schedule for completion of work on remaining SWAT deficiencies has been requested by September 21, 1990. ACL is likely.

\section*{Site: Double Butte Disposal Site} Grand Ave; 600 Ft W Winchester Winchester CA

SWF/LF
\begin{tabular}{llll} 
SWIS NO: & 33-AA-0008 & Operator Phone: & 9514863200 \\
Permit Status: & Permitted & Operator Addr 1: & \\
Permit Date: & \(12 / 1 / 1992\) & \begin{tabular}{l} 
Operator Addr 2:
\end{tabular} & 14310 Frederick Street \\
Landuse Name: & & Operator City: & Moreno Valley \\
County: & Riverside & Operator State: & CA \\
Latitude: & 33.71862 & Operator Zip: & 92553 \\
Longitude: & -117.10652 & Operator: & County Of Riverside Waste Mgmt Dept \\
GIS Source: & Map & &
\end{tabular}

Owner
\begin{tabular}{ll}
-- & -- \\
Owner: & County Of Riverside Waste Mgmt Dept \\
Phone: & 9514863200 \\
Address1: & \\
Address2: & 14310 Frederick Street \\
City: & Moreno Valley \\
State: & CA \\
Zip: & 92553 \\
--- & - \\
Unit & -- \\
-- & Disposal \\
Category: & 01 \\
Unit No.: & Solid Waste Disposal Site \\
Activity: & Permitted \\
Regulatory Status: & Closed \\
Operational Status: & Quarterly \\
Inspection Frequency: & Contaminated soil,Mixed municipal \\
Accepted Waste: & Financial Assurance Responsibilities \\
Program Type: & \(9 / 17 / 1994\) \\
Closure Date: & Actual \\
Closure Type: & 500 \\
Thorough Put: & Tons/day \\
Thorough Put Units: & \\
Capacity: & \(\$ 580.00\) \\
Acreage: & \(\$ 93.00\) \\
Disposal Acreage: & 312000 \\
Remaining Capacity: & II \\
WDRNO: &
\end{tabular}

\title{
Appendix: Database Descriptions
}

Ecolog Environmental Risk Information Services Ltd (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:
"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

\section*{Standard Environmental Record Sources}

\section*{Federal}

\section*{National Priority List:}

NPL
National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.
Government Publication Date: Feb 11, 2016

\section*{National Priority List - Proposed:}

PROPOSED NPL Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.
Government Publication Date: Feb 11, 2016

\section*{Deleted NPL:}

DELETED NPL
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.
Government Publication Date: Feb 11, 2016

\section*{SEMS List 8R Active Site Inventory:}

SEMS
The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

\section*{Government Publication Date: Mar 07, 2016}

SEMS List 8R Archive Sites:
SEMS ARCHIVE
The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

\section*{Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS:}

CERCLIS
Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

\section*{Government Publication Date: Oct 25, 2013}

\section*{CERCLIS - No Further Remedial Action Planned:}

CERCLIS NFRAP
An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.
Government Publication Date: Oct 25, 2013

\section*{CERCLIS Liens:}

CERCLIS LIENS A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Jan 30, 2014

\section*{RCRA CORRACTS-Corrective Action:}

RCRA CORRACTS
RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.
Government Publication Date: Mar 14, 2016
RCRA non-CORRACTS TSD Facilities:
RCRA TSD
RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).
Government Publication Date: Mar 14, 2016
RCRA Generator List:
RCRA LQG
RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.
Government Publication Date: Mar 14, 2016

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

\section*{Government Publication Date: Mar 14, 2016}

\section*{RCRA Conditionally Exempt Small Quantity Generators List:}

RCRA CESQG
RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Conditionally Exempt Small Quantity Generators (CESQG) generate 100 kilograms or less per month of hazardous waste or one kilogram or less per month of acutely hazardous waste.
Government Publication Date: Mar 14, 2016

\section*{RCRA Non-Generators:}

RCRA NON GEN
RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste. Government Publication Date: Mar 14, 2016

\section*{Federal Engineering Controls-ECs:}

FED ENG
Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, subsurface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Jul 30, 2014

\section*{Federal Institutional Controls- ICs:}

FED INST
Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency ) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.
Government Publication Date: Jul 30, 2014

\section*{Emergency Response Notification System:}

ERNS 1982 TO 1986
Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.
Government Publication Date: 1982-1986

\section*{Emergency Response Notification System:}

ERNS 1987 TO 1989
Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

\footnotetext{
Government Publication Date: 1987-1989
}

\section*{The Assessment, Cleanup and Redevelopment Exchange System (ACRES)}

\section*{Brownfield Database:}

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Apr 05, 2016
Material Licensing Tracking System (MLTS):
MLTS
A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC.
Government Publication Date: Oct 7, 2014

\section*{State}

\section*{State Response Sites:}

RESPONSE
A list of identified confirmed release sites where the Department of Toxic Substances Control (DTSC) is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. This database is state equivalent NPL.

\section*{Government Publication Date: Feb 03, 2016}

\section*{EnviroStor Database:}

ENVIROSTOR
The EnviroStor Data Management System is made available by the Department of Toxic Substances Control (DTSC). Includes Corrective Action sites, Tiered Permit sites, Historical Sites and Evaluation/Investigation sites. This database is state equivalent CERCLIS.
Government Publication Date: Dec 31, 2015

\section*{Solid Waste Information System (SWIS):}

SWF/LF
The Solid Waste Information System (SWIS) database made available by the Department of Resources Recycling and Recovery (CalRecycle) contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.

\section*{Government Publication Date: Apr 28, 2016}

\section*{EnviroStor Hazardous Waste Facilities:}

A list of hazardous waste facilities including permitted, post-closure and historical facilities found in the Department of Toxic Substances Control (DTSC) EnviroStor database.

\section*{Government Publication Date: Apr 21, 2016}

\section*{Land Disposal Sites:}

Land Disposal Sites in GeoTracker, the State Water Resources Control Board (SWRCB)'s data management system. The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units. Waste management units include waste piles, surface impoundments, and landfills.
Government Publication Date: Apr 25, 2016

\section*{Historical Hazardous Substance Storage Information Database:}

HHSS
The Historical Hazardous Substance Storage database contains information collected in the 1980s from facilities that stored hazardous substances. The information was originally collected on paper forms, was later transferred to microfiche, and recently indexed as a searchable database. When using this database, please be aware that it is based upon selfreported information submitted by facilities which has not been independently verified. It is unlikely that every facility responded to the survey and the database should not be expected to be a complete inventory of all facilities that were operating at that time. This database is maintained by the California State Water Resources Control Board's (SWRCB) Geotracker.
Government Publication Date: Aug 27, 2015

\section*{Site Mitigation and Brownfields Reuse Program Facility Sites with Land Use Restrictions:}

LUR
The Department of Toxic Substances Control (DTSC) Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents land use restrictions that are active. Some sites have multiple land use restrictions.
Government Publication Date: Mar 4, 2016

\section*{Restrictions:}

The Department of Toxic Substances Control (DTSC) Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

\section*{Government Publication Date: Mar 29, 2016}

\section*{Deed Restrictions and Land Use Restrictions:}

DEED
List of Deed Restrictions, Land Use Restrictions and Covenants in GeoTracker made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency. A deed restriction (land use covenant) may be required to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

\section*{Government Publication Date: Mar 29, 2016}

\section*{Voluntary Cleanup Program:}

VCP
List of sites in the Voluntary Cleanup Program made available by the Department of Toxic Substances and Control (DTSC). The Voluntary Cleanup Program was designed to respond to lower priority sites. Under the Voluntary Cleanup Program, DTSC enters site-specific agreements with project proponents for DTSC oversight of site assessment, investigation, and/or removal or remediation activities, and the project proponents agree to pay DTSC's reasonable costs for those services.
Government Publication Date: Apr 7, 2016

\section*{GeoTracker Cleanup Sites Data:}

CLEANUP SITES
A list of cleanup sites in the state of California made available by The State Water Resources Control Board (SWRCB) of the California Environmental Protection Agency (EPA). SWRCB tracks leaking underground storage tank cleanups as well as other water board cleanups.

\section*{Government Publication Date: Mar 21, 2016}

\section*{Well Investigation Program Case List:}

The Well Investigation Program (WIP) was developed by the State Water Resources Control Board (SWRCB) to locate, assess and remediate sources of solvent contamination impacting drinking water wells. This list contains WIP cases (active and historical) for the San Gabriel and San Fernando Valley area and was provided by the Los Angeles Regional Water Quality Control Board.
Government Publication Date: Nov 13, 2015

\section*{Tribal}

Leaking Underground Storage Tanks (LUSTs) on Indian Lands:
INDIAN LUST
LUSTs on Tribal/Indian Lands in Region 9, which includes California.
Government Publication Date: Aug 28, 2014
Underground Storage Tanks (USTs) on Indian Lands:
INDIAN UST
USTs on Tribal/Indian Lands in Region 9, which includes California.

Delisted Tribal Leaking Storage Tanks:
DELISTED ILST
Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.
Government Publication Date: Jan 31, 2016

\section*{County}

\section*{Alameda County LOP Sites List:}

ALAMEDA LOP
A list of Leaking Underground Storage Tanks (LUST) facilities in Alameda County. This list is made available by Alameda County Department of Environmental Health (ACEH). ACEH implements a Local Oversight Program (LOP) under contract with the State Water Resources Control Board to provide regulatory oversight of the investigation and cleanup of soil and groundwater contamination from leaking petroleum USTs.
Government Publication Date: Apr 6, 2016

\section*{Alameda County UST List:}

ALAMEDA UST
A list of all registered Underground Storage Tanks (USTs) in the County of Alameda. The list is made available by Alameda County Department of Environmental Health.
Government Publication Date: Apr 6, 2016

\section*{Amador County CUPA List:}

AMADOR CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Amador County. This list is made available by Amador County Environmental Health Department which is the CUPA for Amador County and administers a consolidated hazardous materials program.
Government Publication Date: Mar 21, 2016

\section*{Butte County CUPA List:}

BUTTE CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Butte County. This list is made available by Butte County Public Health Department, Environmental Health Division which was certified by the California Environmental Protection Agency as the CUPA for Butte County.

\section*{Government Publication Date: Mar 22, 2016}

\section*{Calaveras County CUPA Facilities List:}

CALAVERAS CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Calaveras. This list is made available by Calaveras County Environmental Health Department which has been certified by CaIEPA to implement the Unified program as a CUPA.
Government Publication Date: Mar 15, 2016
Calaveras County Landfills List:
CALAVERAS LF
A list of landfills in Calaveras County. This list is made available by Calaveras County Environmental Health Department which has been designated as the CUPA for the County.
Government Publication Date: Mar 15, 2016
Calaveras County UST Remediation Sites: CALAVERAS LUST
A list of Leaking Underground Storage Tank (LUST) facilities in Calaveras County. This list is made available by Calaveras County Environmental Health Department. Local Implementing Agency (LIA) provides oversight of site remediation with soil contamination while CaIEPA - California Regional Water Quality Control Board - Central Valley Region oversees remediation of sites with groundwater contamination.
Government Publication Date: Mar 15, 2016
Colusa County CUPA List:
COLUSA CUPA
A list of facilities associated with Business Plan and Hazardous Generator programs in the County of Colusa. This list is made available by Colusa County Environmental Health which was certified by the California Environmental Protection Agency as Certified Unified Program Agency for Colusa County.

\section*{Contra Costa County CUPA List:}

CONTRACO CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Contra Costa. This list is made available by Contra Costa County which has been certified by CaIEPA to implement the Unified program as a CUPA.
Government Publication Date: Apr 27, 2016

\section*{Del Norte County CUPA Facility List:}

DELNORTE CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Del Norte County. This list is made available by Del Norte County Environmental Health Division which is the designated CUPA for the county.

\section*{Government Publication Date: Jan 22, 2016}

\section*{EI Dorado County CUPA Facility List:}

ELDORADO CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in El Dorado County. This list is made available by El Dorado County Department of Environmental Management - Hazardous Waste Division which is approved by CalEPA as CUPA for El Dorado County.
Government Publication Date: Dec 28, 2015
Fresno County CUPA/Solid Waste Programs Resource List:
FRESNO CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Fresno County. This list is made available by Fresno County Department of Environmental Health Division which is approved by Cal-EPA as CUPA for the County.
Government Publication Date: Jan 05, 2016

\section*{Humboldt County CUPA Facility List:}

HUMBOLDT CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Humboldt County. This list is made available by Humboldt County Division of Environmental Health which is approved by the State Secretary for Environmental Protection as CUPA for the County.
Government Publication Date: Feb 9, 2016

\section*{Imperial County CUPA Facility List:}

IMPERIAL CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Imperial County. This list is made available by the California Department of Toxic Substances Control (DTSC) which is appointed as CUPA for Imperial County.
Government Publication Date: Apr 28, 2016

\section*{Inyo County CUPA Facility List:}

INYO CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Inyo. This list is made available by the Inyo County Environmental Health Services Department which has been certified by CaIEPA to implement the Unified program as a CUPA.
Government Publication Date: Jul 16, 2014

\section*{Kern County CUPA List:}

KERN CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Kern. This list is made available by Kern County Environmental Health Services Department which has been certified by CalEPA to implement the Unified program as a CUPA for Kern County.
Government Publication Date: May 19, 2015
Kern County UST List:
KERN UST
A list of all registered and inactive Underground Storage Tanks in the County of Kern. The list is made available by Kern County Environmental Health Division.
Government Publication Date: May 19, 2015

\section*{Los Angeles County - Torrance City Underground Storage Tanks:}

TORRANCE UST
A list of registered Underground Storage Tank (UST) sites in Torrance City of Los Angeles County. This list is made available by Torrance City Office of Clerk.
Government Publication Date: Mar 29, 2016

\section*{Los Angeles County HMS List:}

LA HMS
This list contains sites that have or had permits for Industrial Waste, Underground Storage Tanks, or Storm water in the County of Los Angeles. This list is made available by the County of Los Angeles Department of Public Works.
Government Publication Date: Feb 9, 2016
Los Angeles County Long Beach UST List:
LA LONGB UST
A list of all registered active Underground Storage Tanks in the City of Long Beach of Los Angeles County. The list is made available by Long Beach Certified Unified Program Agency.
Government Publication Date: Jan 6, 2016
Los Angeles County Solid Waste Sites:
LA SWF
List of permitted solid waste facilities, closed landfills, historical dumpsites and other solid waste sites in Los Angeles County, made available by the Department of Public Works in Los Angeles County.
Government Publication Date: Apr 20, 2016

\section*{Madera County CUPA Facility List:}

MADERA CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Madera County. This list is made available by Madera County Environmental Health Department which is CUPA for the entire county.

\section*{Government Publication Date: Sep 16, 2015}

\section*{Marin County CUPA List:}

MARIN CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Marin. This list is made available by Marin County which has been certified by CaIEPA to implement the Unified program as a CUPA. Government Publication Date: Jan 19, 2016

\section*{Merced County CUPA Facilities List:}

MERCED CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Merced. This list is made available by Merced County which has been certified by CalEPA to implement the Unified program as a CUPA for the entire county.
Government Publication Date: Jan 15, 2016

\section*{Mono County CUPA Facility List:}

MONO CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Mono County. This list is made available by Mono County Environmental Health Department which has been certified by CalEPA to implement the Unified program as a CUPA for the entire county.
Government Publication Date: Apr 7, 2016 is made available by Monterey County Hazardous Materials Management Services which is designated as the CUPA in Monterey County.

\section*{Napa County UST List:}

NAPA UST
A list of all registered active Underground Storage Tanks (USTs) in the County of Napa. This list is made available by Napa County Environmental Health Division.
Government Publication Date: Mar 09, 2016

\section*{Nevada County CUPA Facility List:}

NEVADA CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Nevada County. This list is made available by Nevada County Department of Environmental Health which is the CUPA for all cities and unincorporated areas within Nevada County.
Government Publication Date: Apr 18, 2016
Orange County Aboveground Petroleum Storage Tank Listing:
orange ast
A list of Aboveground Petroleum Storage Tank (APST) facilities inspected by Orange County Certified Unified Program Agency (CUPA) Under the Aboveground Petroleum Storage Act (APSA). This list is made available by the Environmental Health Division of Orange County Health Care Agency.
Government Publication Date: Apr 01, 2016

\section*{Orange County Underground Storage Tanks Listing:}

ORANGE UST
A list of registered Underground Storage Tank (UST) sites in Orange County. This list is made available by Orange County Health Care Agency (OCHCA), Environmental Health Division which oversees the underground storage tank inspection program in most of the cities of Orange County, with the exception of Anaheim, Fullerton, and Orange. Government Publication Date: Apr 01, 2016

\section*{Placer County CUPA Facilities List:}

PLACER CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Placer County. This list is made available by Placer County Environmental Health which is designated CUPA for all areas of the county except for the City of Roseville.
Government Publication Date: Apr 19, 2016

\section*{Riverside County Local Oversight Program List:}

RIVERSIDE LOP
A list of Leaking Underground Storage Tank (LUST) facilities in Riverside County. This list is made available by Riverside County Department of Environmental Health. Environmental Cleanup Program provides oversight of assessments and cleanups at properties that have been, or may have been, contaminated with hazardous substances from LUSTs or releases associated with other commercial/industrial use.

\section*{Government Publication Date: Feb 17, 2016}

\section*{Riverside County Underground Storage Tanks List:}

RIVERSIDE UST
A list of registered Underground Storage Tank (UST) sites in Riverside County. This list is made available by Riverside County Department of Environmental Health. The Hazardous Materials Management Branch (HMMB) regulates and oversees the inspections of constructions, repairs, upgrades, system operation and removal of UST systems.
Government Publication Date: Feb 17, 2016
Sacramento County Master Hazardous Materials Facility List:
SACRAMENTO HAZ
A list of Hazardous Materials Facilities in Sacramento County. This list is made available by Sacramento County Environmental Management Department which has been designated as the Certified Unified Program Agency (CUPA) for the County.
Government Publication Date: Nov 2, 2015

Sacramento County Environmental Management Department (EMD)'s Toxic Site Cleanup List includes sites where unauthorized releases of potentially hazardous materials have occurred. The EMD's Site Assessment \& Mitigation Program, also referred to as Toxic Site Cleanup Program, provides mandated regulatory oversight of the assessment and remediation of properties on which there has been a release of hazardous materials to soil and/or groundwater.

\section*{Government Publication Date: May 2, 2016}

\section*{San Bernardino County CUPA List:}

SANBERN CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Bernardino County.
This list is made available by San Bernardino County Fire Department which is the CUPA for all areas of the County except the city of Victorville.
Government Publication Date: Apr 13, 2016
San Diego County Hazardous Materials Management Division Database:
SANDIEGO HAZ
A list of facilities with Unified Program Facility Permit in San Diego County. This list has been made available by County of San Diego Environmental Health.
Government Publication Date: Apr 20, 2016
San Diego County Site Assessment and Mitigation Investigation Sites:
SANDIEGO SAM
List of sites which have undergone a Site Assessment and Mitigation investigation. This list is made available by the County of San Diego Department of Environmental Health.
Government Publication Date: Apr 20, 2016
San Diego County Solid Waste Facility List:
SANDIEGO SWF
A list of open and closed Solid Waste Facilities in the County of San Diego. The list is made available by San Diego
County Department of Environmental Health.
Government Publication Date: Feb 10, 2016
San Francisco County Aboveground Storage Tanks List:
SANFRAN AST
A list of Aboveground Storage Tanks (ASTs) facilities inspected by San Francisco Department of Public Health's (SFDPH) Hazardous Materials and Waste Program. Aboveground storage containers or tanks include oil-filled equipment (such as hydraulic systems/reservoirs and heat transfer systems) which have a petroleum storage capacity of 55 gallons or greater.

\section*{Government Publication Date: Mar 12, 2016}

\section*{San Francisco County CUPA Facilities List:}

SANFRAN CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Francisco County.
This list is made available by San Francisco County Hazardous Materials and Waste Program which is the CUPA for all areas of the County.
Government Publication Date: Mar 12, 2016
San Francisco County LOP Sites:
SANFRAN LOP
A list of Underground Storage Tank (UST) release sites in the County of San Francisco. This list is made available by San Francisco County Department of Public Health Environmental Health Protection Branch.
Government Publication Date: Oct 6, 2015

\section*{San Francisco County UST List:}

SANFRAN UST
A list of all registered Underground Storage Tanks (USTs) in the County of San Francisco. This ist is made available by San Francisco County Environmental Health Division. The Hazardous Materials and Waste Program provides regulatory oversight for the construction, operation, repair and removal of USTs in San Francisco.
Government Publication Date: Mar 12, 2016
San Joaquin County Aboveground Tank List:
SANJOAQUIN AST
A list of Aboveground Storage Tanks (ASTs) inspected by San Joaquin County Environmental Health Department (SJCEHD) under Aboveground Petroleum Storage Act (APSA).
Government Publication Date: Jan 29, 2016

A list of all registered Underground Storage Tanks in the County of San Joaquin. The list is made available by San Joaquin County Environmental Health Division.
Government Publication Date: Jan 29, 2016

\section*{San Joaquin Hazardous Waste Facilities:}

SANJOAQUIN HW
A list of Hazardous Waste Facilities in San Joaquin County. This list is made available by San Joaquin County Environmental Health Department which has been designated as the CUPA for the County.
Government Publication Date: Jan 29, 2016

\section*{San Mateo County CUPA Facilities List:}

SANMATEO CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Mateo County. This list is made available by San Mateo County Environmental Health Department which has been designated as the CUPA for the County.
Government Publication Date: May 2, 2016

\section*{San Mateo County LOP List:}

SANMATEO LOP
A list of Leaking Underground Storage Tank (LUST) facilities in San Mateo County. This list is made available by San Mateo County Environmental Health Services Division.

\section*{Government Publication Date: Jan 27, 2016}

\section*{Santa Clara County CUPA Facilities List:}

SANTACLARA CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Santa Clara County. This list is made available by Santa Clara County Department of Environmental health (DEH). DEH's Hazardous Materials Compliance Division (HMCD) is CUPA for the county with jurisdiction within the Cities of Los Altos Hills, Monte Sereno, and Saratoga; and in all unincorporated areas of Santa Clara County, including Moffett Field, San Martin, and Stanford. Government Publication Date: Mar 3, 2016

Santa Clara Local Oversight Program Listing:
SANTACLARA LO
A list of Leaking Underground Storage Tanks (LUST) facilities in Santa Clara County Provided by Santa Clara Department of Environmental Health (DEH). Since July 1, 2004 the DEH has served as the oversight agency for investigations and clean-up of petroleum releases from underground storage tanks through implementation of the Local Oversight Program (LOP) contract with the State Water Resources Control Board.
Government Publication Date: Apr 20, 2016

\section*{Santa Cruz County CUPA Facility List:}

SANTACRUZ CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Santa Cruz County. This list is made available by Santa Cruz County Environmental Health Services (EHS) Division which has been designated as the CUPA for the County.

\section*{Government Publication Date: Apr 20, 2016}

\section*{Shasta County CUPA Facility List:}

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Shasta County. This list is made available by Shasta County Environmental Health Division which has been designated as the CUPA for Shasta County by CaIEPA.
Government Publication Date: Feb 16, 2016
San Luis Obispo County CUPA Facilities List:
SANLUISOB CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Luis Obispo County. This list is made available by County of San Luis Obispo Environmental Health Services Division which has been designated as the CUPA for the County.
Government Publication Date: Apr 21, 2016

\section*{Government Publication Date: Apr 28, 2016}

\section*{Solano County Local Oversight Program List:}

SOLANO LOP
A list of Leaking Underground Storage Tank (LUST) facilities in the Solano County. This list is made available by the Solano County Environmental Health Services. Since April 1993, the State Water Resources Control Board has contracted with the County of Solano to provide regulatory oversight for the cleanup of LUSTs under Local Oversight Program (LOP) contract.
Government Publication Date: Apr 28, 2016
Solano County Underground Storage Tanks List:
SOLANO UST
A list of all registered Underground Storage Tanks (USTs) in the County of Solano. The list is made available by Solano County Environmental Health Services Division. There are an estimated 190 facilities throughout the county that are subject to the regulatory requirements of the UST program.
Government Publication Date: Apr 28, 2016

\section*{Sonoma County CUPA Facilities List:}

SONOMA CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Sonoma County. This list is made available by Sonoma County Hazardous Materials (HazMat) Division which has been designated as the CUPA for the County.
Government Publication Date: Jan 11, 2016

\section*{Sonoma County LOP Site List:}

SONOMA LOP
A list of Leaking Underground Storage Tank (LUST) facilities in Sonoma County. This list is made available by Sonoma County Department of Health Services. Sonoma County Local Oversight Program (LOP) oversees the investigation and cleanup of fuel releases from underground storage tanks in all areas of the County with the exception of the Cities of Santa Rosa and Healdsburg.
Government Publication Date: Apr 01, 2016

\section*{Sonoma County Petaluma City CUPA Facilities:}

SONOMA PETAL A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Petaluma City. This list is made available by Petaluma Fire Prevention Bureau which is the CUPA for Petaluma City in Sonoma County.
Government Publication Date: May 21, 2015

\section*{Sutter County CUPA List:}

SUTTER CUPA
A list of facilities associated with Aboveground Petroleum Storage Tank (APSA) regulation, Hazardous Materials Business Plan (HMBP) Program and Underground Storage Tank (UST) regulation of Certified Unified Program Agency (CUPA) programs in Sutter County. This list is made available by Sutter County Enviornmental Health Division which has been designated as the CUPA for the County.
Government Publication Date: Dec 8, 2015

\section*{Tuolumne County CUPA Facility List:}

TUOLUMNE CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Tuolumne County. This list is made available by Tuolumne County Environmental Health which is the CUPA for all areas of the County.
Government Publication Date: May 2, 2016

\section*{Ventura County CUPA Facilities List:}

VENTURA CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Ventura County. This list is made available by Ventura County Environmental health Division.
Government Publication Date: Mar 28, 2016

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Oxnard City. This list is made available by Oxnard City Fire Department which is the CUPA for Oxnard City in Ventura County.
Government Publication Date: May 04, 2016
Ventura County Inactive Underground Storage Tanks Sites:
VENTURA INUST
A list of inactive Underground Storage Tank (UST) sites in Ventura County. This list is made available by Ventura County Environmental Health Division.
Government Publication Date: Apr 20, 2016
Ventura County Leaking Underground Fuel Tanks - Historic:
VENTURA HLUFT
A historical list of cleanup oversight of the Leaking Underground Fuel Tank (LUFT) program provided by Ventura County Environmental Health Division. All new and existing underground fuel storage tank releases are now referred to the Los Angeles Regional Water Quality Control Board.
Government Publication Date: May 31, 2008

\section*{Yolo County UST List:}

YOLO UST
A list of registered Underground Storage Tank (UST) sites in Yolo County. This list is made available by Yolo County Environmental Health Department which regulates the construction, operation, repair and removal of USTs throughout Yolo County.
Government Publication Date: Apr 20, 2016

\section*{Yuba County CUPA Facilities List:}

YUBA CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Yuba County. This list is made available by Yuba County Environmental Health Division which is the CUPA for all areas of the County.

\section*{Government Publication Date: Jan 29, 2016}

\section*{City of Bakersfield CUPA List:}

BKRSFIELD CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the City of Bakersfield. This list is made available by the City of Bakersfield Fire Department.
Government Publication Date: Mar 07, 2016

\section*{Gilroy City CUPA Facilities List:}

SANTACLARA GIL
The Gilroy City Fire Marshal's office maintains a list of CUPA Facilities located in Gilroy City. Government Publication Date: Jan 19, 2016

\section*{Alpine County CUPA List:}

ALPINE CUPA
The Alpine County Health Department has been certified by Cal / EPA to implement the Unified program and maintains a list of Certified Unified Program Agency (CUPA) facilities.
Government Publication Date: Feb 24, 2015

\section*{Glenn County CUPA List:}

GLENN CUPA
The Glenn County Air Pollution Control District is the Administering Agency and the Certified Unified Program Agency (CUPA) for Glenn County with responsibility for regulating hazardous materials handlers, hazardous waste generators, underground storage tank facilities, above ground storage tanks, and stationary sources handling regulated substances. Government Publication Date: May 02, 2016

\section*{Lassen County CUPA List:}

LASSEN CUPA
The Environmental Health Program of Lassen County tracks Certified Unified Program Agencies (CUPA) facilities.
Government Publication Date: May 9, 2016
Mariposa County CUPA List:
MARIPOSA CUPA
Mariposa County Health Department, Environmental Health Services, is certified by Cal-EPA as the Certified Unified Program Agency (CUPA) that administers specific hazardous materials/hazardous waste programs.
Government Publication Date: Apr 8, 2016 Program Agency (CUPA) regulates underground tanks, hazardous materials (including but not limited to: hazardous substances, hazardous waste, and any material which a handler or the CUPA has reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

\section*{Government Publication Date: Oct 14,2015}

\section*{Stanislaus County CUPA List:}

STANISLAUS CUPA
The Environmental Resources Department of Stanislaus County maintains a list of Certified Unified Program Agency (CUPA) facilities.
Government Publication Date: Jan 25, 2016

\section*{Trinity County CUPA List:}

TRINITY CUPA
On January 1, 2005, the Department of Toxic Substances Control (DTSC) was authorized by the California Environmental Protection Agency (Cal/EPA) as the Trinity County Certified Unified Program Agency (CUPA). This CUPA list was made available by the DTSC.
Government Publication Date: Apr 15, 2016

\section*{Tulare County CUPA List:}

TULARE CUPA
The Certified Unified Program Agency (CUPA) unifies and consolidates under one roof the various requirements for businesses handling hazardous materials, generating or treating hazardous wastes, or operating aboveground or underground storage tanks. CUPA thereby enhances consistency, reduces duplication, and simplifies compliance for the regulated public. The Tulare County Environmental Health Division was certified as a CUPA in December, 1996.
Government Publication Date: Dec 3, 2015

\section*{Additional Environmental Record Sources}

\section*{Federal}

\section*{Facility Registry Service/Facility Index:}

FINDS/FRS
The US Environmental Protection Agency (EPA)'s Facility Registry System (FRS) is a centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. FRS creates highquality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, data collected from EPA's Central Data Exchange registrations and data management personnel.
Government Publication Date: Sep 24, 2015

\section*{Toxics Release Inventory (TRI) Program:}

TRIS
The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.
Government Publication Date: Dec 31, 2014
Hazardous Materials Information Reporting System:
HMIRS
US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.
Government Publication Date: Dec 8, 2015

The U.S. Department of Justice ("the Department") provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.
Government Publication Date: Sep 5, 2015

\section*{Inventory of Open Dumps, June 1985:}

ODI
The Resource Conservation and Recovery Act (RCRA of the Act) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

\section*{Government Publication Date: Jun 1985}

\section*{EPA Report on the Status of Open Dumps on Indian Lands:}

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified ongressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.
Government Publication Date: Dec 31, 1998

\section*{Toxic Substances Control Act:}

TSCA
The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).
Government Publication Date: Jun 30, 2014

\section*{Hist TSCA:}

HIST TSCA
The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

\section*{Government Publication Date: 2006}

\section*{FTTS Administrative Case Listing:}

FTTS ADMIN
An administrative case listing from the Federal Insecticide, Fungicide, \& Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.
Government Publication Date: Jan 19, 2007

\section*{FTTS Inspection Case Listing:}

FTTS INSP
An inspection case listing from the Federal Insecticide, Fungicide, \& Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.
Government Publication Date: Jan 19, 2007

Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.
Government Publication Date: Nov 12, 2013

\section*{State Coalition for Remediation of Drycleaners Listing:}

SCRD DRYCLEANER
The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. It is comprised of states with established drycleaner remediation programs. Coalition members are states with mandated programs and funding for drycleaner site remediation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

\section*{Government Publication Date: Jan 1, 2016}

\section*{Integrated Compliance Information System (ICIS):}

ICIS
The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE\&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE\&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance program activities. These activities include Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.
Government Publication Date: Dec 17, 2015

\section*{Drycleaner Facilities:}

FED DRYCLEANERS
A list of drycleaner facilities from the Integrated Compliance Information System (ICIS). The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.
Government Publication Date: Feb 11, 2016

\section*{State}

\section*{Drycleaner Facilities:}

DRYCLEANERS
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial, linen supply, commericial laundry, dry cleaning and pressing machines - Coin Operated Laundry and Dry Cleaning. This is provided by the Department of Toxic Substance Control.
Government Publication Date: Feb 22, 2016

\section*{EnviroStor Inspection, Compliance, and Enforcement:}

INSP COMP ENF
A list of permitted facilities with inspections and enforcements tracked in the Department of Toxic Substance Control (DTSC) EnviroStor.
Government Publication Date: Mar 14, 2016
Clandestine Drug Lab Sites:
The Department of Toxic Substances Control (DTSC) maintains a listing of drug lab sites. DTSC is responsible for removal and disposal of hazardous substances discovered by law enforcement officials while investigating illegal/clandestine drug laboratories.
Government Publication Date: Dec 31, 2015
School Property Evaluation Program Sites:
A list of sites registered with The Department of Toxic Substances Control (DTSC) School Property Evaluation and Cleanup (SPEC) Division. SPEC is responsible for assessing, investigating and cleaning up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new school.
Government Publication Date: Dec 7, 2015 both the impacts that leakage from solid waste disposal sites (SWDS) may have upon waters of the State and the actions taken to address such leakage.
Government Publication Date: Dec 31, 1995

\section*{Hazardous Waste Manifest Data:}

HAZNET
A list of hazardous waste manifests received each year by Department of Toxic Substances Control (DTSC). The volume of manifests is typically \(900,000-1,000,000\) annually, representing approximately 450,000-500,000 shipments.
Government Publication Date: Oct 2,2015
Cease and Desist Orders and Cleanup and Abatement Orders: wastes, or sediment that do not contain hazardous materials, but the Water Boards' database does not distinguish between these types of orders.
Government Publication Date: Feb 28, 2012
Historical California Hazardous Material Incident Report System (CHMIRS):
HIST CHMIRS
A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS) prior to 1993. This list has been made available by the California Office of Emergency Services (OES).
Government Publication Date: Jan 1, 1993

\section*{Historical Hazardous Waste Manifest Data:}

HIST MANIFEST
A list of historic hazardous waste manifests received by the Department of Toxic Substances Control (DTSC) from year the 1980 to 1992. The volume of manifests is typically \(900,000-1,000,000\) annually, representing approximately 450,000 - 500,000 shipments.

Government Publication Date: Dec 31, 1992

\section*{Tribal}

No Tribal additional environmental record sources available for this State.

\section*{County}

Los Angeles County Site Mitigation List: LA SML A Site Mitigation List in the County of Los Angeles. The list is made available by Los Angeles County Fire Department. Site mitigation is handled by the Site Mitigation Unit (SMU) which facilitates completion of site clean-up projects of contaminated sites in an expeditious manner in all cities of the Los Angeles County except El Segundo, Glendale, Long Beach, Santa Fe Springs, and Vernon.
Government Publication Date: Jun 23, 2015

\section*{Riverside County Hazardous Waste Generator Sites List:}

RIVERSIDE HWG
A list of Hazardous Waste Generator Sites in the County of Riverside. This list is made available by Riverside County Department of Environmental Health which has been designated as the CUPA for the County.
Government Publication Date: Feb 17, 2016
San Joaquin County Hazardous Materials Facilities List:
SANJOAQUIN HM
A list of Hazardous Materials Facilities in San Joaquin County. This list is made available by San Joaquin County Environmental Health Department which has been designated as the CUPA for the County.

\section*{Government Publication Date: Jan 29, 2016}

Ventura County Hazardous Material Release (Prop 65) Sites:
VENTURA HAZR
A historic list of hazardous material releases from the Hazardous Material Release Report collected by the Environmental Health Division of Ventura County. As per the department this report contains records from 1987 to 2014.
Government Publication Date: 1987-2014

\section*{Ventura County Inactive Hazardous Waste Sites:}

HW INACTIVE
A list of Inactive Hazardous Waste Sites in Ventura County collected by Ventura County's Environmental Health Division. Government Publication Date: Jun 26, 2015

Delisted County Records:
DELISTED COUNTY
Records removed from county or CUPA databases. Records may be removed from the county lists made available by the respective county departments because they are inactive, or because they have been deemed to be below reportable thresholds.
Government Publication Date: May 9, 2016

\section*{Definitions}

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries". All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:
'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.
'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.
'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at \#1. The project property will always have a map key of ' 1 ' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and were included as reference.

\section*{APPENDIX I:}

KEY PERSONNEL RESUMES

\section*{EMG Resume}

\section*{Kelly Hoover}

\author{
Senior Environmental Consultant
}

\section*{Education}

Bachelor of Science, Biology, University of Glasgow, Scotland, United Kingdom, 2002

\section*{Project Experience}

Industrial Development; Deland, FL - Ms. Hoover performed a Phase I Environmental Site Assessment of this 47.70 acre industrial facility that was constructed in phases between 1971 and 2002. Previous occupants had included an aluminum fence manufacturing company, and a defense related manufacturing facility, which developed ultralightweight camouflage nets, chemical and biological warfare alarms and detectors, carbon fiber resin reinforced aircraft components, and equipment/ordnance components.
Former Airport Property; Opa Locka, FL - Ms. Hoover performed a Phase I Environmental Site Assessment of this 176 acre airport property that had been developed to include an automobile dealership, a 150,000 square foot multiple tenant industrial building, a 500,000 square foot mail sorting and distribution center, and a gasoline station.
Marina Property; Fort Myers, FL - Ms. Hoover performed a Phase I Environmental Site Assessment of this 30 acre property that had been developed as a full-service marina since the early 1950s. Based upon findings of the assessment, a Phase II Subsurface Investigation was conducted, which revealed contaminants of concern above reportable levels. The report was critical in assisting the client make the appropriate business decision regarding the site.

Industry Tenure
Environmental: 2002
EMG: 2014

ReLAted Experience
- Phase I Environmental Site Assessment
- Transaction Screen Reports
- Asbestos Surveys
- Asbestos Management Plans
- Asbestos Project Design
- Indoor Air Quality (IAQ) Assessment
- Mold Assessment
- LEED IAQ Testing
- Industrial Hygiene Surveys
- Financial Portfolios
- Retail Portfolios

Industry Experience
- Government
- Office
- Industrial
- Housing/Multi-family
- Higher Education
- Hospitality
- Petroleum
- Financial
- Healthcare
- Retail/Wholesale

Active Licenses/Registrations
- Florida Mold Assessor
- Florida Asbestos Inspector
- Florida Asbestos Contractor Supervisor
- Florida Asbestos Management Planner
- Florida Asbestos Project Designer

Regional Location
Tampa, FL

\section*{Project Experience Cont.}

Marina Property; Key West, FL - Ms. Hoover performed a Phase I Environmental Site Assessment of a former marina in Key West, Florida as part of the refinance of the property. During review of regulatory files, Ms. Hoover identified that the Project was listed as a Leaking Underground Storage Tank (LUST) site; however, through file review determined that the LUST case had been attributed to the wrong property in error. Ms. Hoover was able to resolve the discrepancy with the regulators, which led to the release being rescinded and the case was closed prior to foreclosure.

\section*{EMG Resume}

\section*{Kate Downey}

Project Manager

\section*{Education}

Bachelor of Science, Biological Sciences, California Polytechnic State University, San Luis Obispo, 2010

\section*{Project Experience}

Auto Repair Center; Los Angeles, California - Ms. Downey conducted a Phase I Environmental Site Assessment for a large auto repair center. She reviewed previous investigations and on-site waste disposal records to create a thorough report with specific recommendations for the client. Her work helped EMG complete this project on schedule and within budget.
Retail Shopping Complex, Fresno, California; Fresno, California - Ms. Downey served as Project Manager for the Phase I ESA for a13-acre multi-tenant retail shopping center and identified two recognized environmental conditions in connection with the Project, through her review of monitoring reports and interviews with case managers. The client found her observations critical to their final business decision.
Fitness Center Portfolio; Multiple Cities, Missouri - Ms. Downey completed 17 consecutive on-site investigations for a multi-state fitness center portfolio, collecting data and contributing to the findings of the reports. Her on-site investigations helped EMG's staff write the ESA reports quickly and precisely.

Property Condition Assessment for Professional Office Tower; Los Angeles, California - Ms. Downey performed a PCA for a professional office tower with a complex HVAC central system, and multiple costs for a 12 year reserve term. Her detailed findings included ADA costs, HVAC and mechanical replacement costs and life/safety deficiencies. These findings were instrumental in the client's budgeting decisions.

Industry Tenure
Environmental: 2013
EMG: 2013

Related Experience
- A/E Project Manager since 2014

Industry Experience
- Hospitality
- Multifamily
- Automotive repair
- Industrial warehouses
- Assisted living
- Dry cleaners
- Vacant land
- Office
- Retail

Active Licenses/Registrations
- AHERA - Certified Building Inspector

Regional Location
Los Angeles, CA

\section*{Appendix}

This page intentionally left blank.

\section*{Appendix G Noise and Vibration Background and Modeling Data}

\section*{Noise Background and Modeling Data}

\section*{NOISE}

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

\section*{Noise Descriptors}

The following are brief definitions of terminology used in this chapter:
- Sound. A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- Noise. Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- Decibel (dB). A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals ( \(20 \mu \mathrm{~Pa}\) ).
- Vibration Decibel (VdB). A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second ( \(1 \times 10^{-6} \mathrm{in} / \mathrm{sec}\) ).
- A-Weighted Decibel (dBA). An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- Equivalent Continuous Noise Level ( \(\mathrm{L}_{\mathrm{eq}}\) ); also called the Energy-Equivalent Noise Level. The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the \(\mathrm{L}_{\mathrm{eq}}\) metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- Statistical Sound Level ( \(\mathbf{L}_{n}\) ). The sound level that is exceeded " \(n\) " percent of time during a given sample period. For example, the \(L_{50}\) level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The \(L_{10}\) level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The \(L_{90}\) is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."
- Day-Night Sound Level ( \(\mathbf{L}_{\mathrm{dn}}\) or \(\mathbf{D N L}\) ). The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- Community Noise Equivalent Level (CNEL). The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and \(L_{d n}\) values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive - that is, higher than the \(\mathrm{L}_{\mathrm{dn}}\) value). As a matter of practice, \(L_{d n}\) and CNEL values are interchangeable and are treated as equivalent in this assessment.
- Sensitive Receptor. Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

\section*{Characteristics of Sound}

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB , frequency or pitch is measured in Hertz \([\mathrm{Hz}]\) or cycles per second, and duration or time variations is measured in seconds or minutes.

\section*{Amplitude}

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.
\begin{tabular}{c|c} 
Table 1 Noise Perceptibility & Noise Level \\
\hline Change in dB & Threshold of human perceptibility \\
\hline\(\pm 3 \mathrm{~dB}\) & Clearly noticeable change in noise level \\
\hline\(\pm 5 \mathrm{~dB}\) & Half or twice as loud \\
\hline\(\pm 10 \mathrm{~dB}\) & Much quieter or louder \\
\hline\(\pm 20 \mathrm{~dB}\) & \\
\hline Source: Bies, David A. and Colin H. Hansen. 2009. Engineering Noise Control: Theory and Practice. 4th ed. New York: Spon Press. \\
\hline
\end{tabular}

\section*{Frequency}

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as \(20,000 \mathrm{~Hz}\), most people cannot hear above \(15,000 \mathrm{~Hz}\). In all cases, hearing acuity falls off rapidly above about \(10,000 \mathrm{~Hz}\) and below about 200 Hz .

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:
- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

\section*{Duration}

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called \(\mathrm{L}_{\mathrm{eq}}\) ), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the \(\mathrm{L}_{50}\) noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the \(\mathrm{L}_{2}, \mathrm{~L}_{8}\) and \(\mathrm{L}_{25}\) values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1,5 , and 15 minutes per hour, respectively. These " n " values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the \(\mathrm{L}_{\text {min }}\) and \(\mathrm{L}_{\text {max }}\). These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24 -hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level ( \(\mathrm{L}_{\mathrm{dn}}\) ). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The \(\mathrm{L}_{\mathrm{dn}}\) descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24 -hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or \(\mathrm{L}_{\mathrm{dn}}\) metrics are commonly applied to the assessment of roadway and airport-related noise sources.

\section*{Sound Propagation}

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance
from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA , at 100 feet the noise level would be 79 dBA , and at 200 feet it would be 73 dBA . This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

\section*{Psychological and Physiological Effects of Noise}

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA . Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, lessdeveloped areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.
\begin{tabular}{|c|c|c|}
\hline \multicolumn{3}{|l|}{Table 2 Typical Noise Levels} \\
\hline Common Outdoor Activities & Noise Level (dBA) & Common Indoor Activities \\
\hline Onset of physical discomfort & 120+ & \\
\hline & & \\
\hline & 110 & Rock Band (near amplification system) \\
\hline \multicolumn{3}{|l|}{Jet Flyover at 1,000 feet} \\
\hline & 100 & \\
\hline \multicolumn{3}{|l|}{Gas Lawn Mower at three feet} \\
\hline & 90 & \\
\hline \multirow[t]{2}{*}{Diesel Truck at 50 feet, at 50 mph} & & Food Blender at 3 feet \\
\hline & 80 & Garbage Disposal at 3 feet \\
\hline \multicolumn{3}{|l|}{Noisy Urban Area, Daytime} \\
\hline & 70 & Vacuum Cleaner at 10 feet \\
\hline Commercial Area & & Normal speech at 3 feet \\
\hline \multirow[t]{2}{*}{Heavy Traffic at 300 feet} & 60 & \\
\hline & & Large Business Office \\
\hline \multirow[t]{2}{*}{Quiet Urban Daytime} & 50 & Dishwasher Next Room \\
\hline & & \\
\hline Quiet Urban Nighttime & 40 & Theater, Large Conference Room (background) \\
\hline \multicolumn{3}{|l|}{Quiet Suburban Nighttime} \\
\hline & 30 & Library \\
\hline \multirow[t]{4}{*}{Quiet Rural Nighttime} & & Bedroom at Night, Concert Hall (background) \\
\hline & 20 & \\
\hline & & Broadcast/Recording Studio \\
\hline & 10 & \\
\hline & & \\
\hline \multirow[t]{2}{*}{Lowest Threshold of Human Hearing} & 0 & Lowest Threshold of Human Hearing \\
\hline & & \\
\hline
\end{tabular}

\section*{Vibration Fundamentals}

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square
root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). However, vibration is often presented and discussed in dB units in order to compress the range of numbers. In this analysis, PPV and RMS velocities are in in/sec, and vibration levels are in dB relative to 1 micro-inch per second (abbreviated as VdB). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration, therefore, man-made vibration problems are usually confined to relatively short distances from the source ( 500 to 600 feet or less).

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).
\begin{tabular}{|c|c|c|}
\hline \multicolumn{3}{|c|}{Human Reaction to Typical Vibration Levels} \\
\hline Vibration Level, PPV (in/sec) & Human Reaction & Effect on Buildings \\
\hline 0.006-0.019 & Threshold of perception, possibility of intrusion & Vibrations unlikely to cause damage of any type \\
\hline 0.08 & Vibrations readily perceptible & Recommended upper level of vibration to which ruins and ancient monuments should be subjected \\
\hline 0.10 & Level at which continuous vibration begins to annoy people & Virtually no risk of "architectural" (i.e. not structural) damage to normal buildings \\
\hline 0.20 & Vibrations annoying to people in buildings & Threshold at which there is a risk to "architectural" damage to normal dwelling - houses with plastered walls and ceilings \\
\hline 0.4-0.6 & Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges & Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage \\
\hline
\end{tabular}

Source: California Department of Transportation (Caltrans). 2004, June. Transportation- and Construction-Induced Vibration Guidance Manual. Prepared by ICF International.

Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to the construction site. Table 4 lists vibration levels for typical construction equipment (not all of which is expected to be used at the proposed project site).
\begin{tabular}{l|c|c} 
Table 4 4 Vibration Levels for Typical Construction Equipment \\
\hline \multicolumn{1}{c|}{ Equipment } & \begin{tabular}{c} 
Approximate Velocity \\
Level at 25 Feet (VdB)
\end{tabular} & \begin{tabular}{c} 
Approximate RMS \({ }^{1}\) \\
Velocity at 25 Feet (in/sec)
\end{tabular} \\
\hline Pile Driver (impact) Upper Range & 112 & 1.518 \\
\hline Pile Driver (impact) Lower Range & 104 & 0.644 \\
\hline Pile Driver (sonic) Upper Range & 105 & 0.734 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|}
\hline \multicolumn{4}{|l|}{Table \(4 \quad\) Vibration Levels for Typical Construction Equipment} \\
\hline \multicolumn{2}{|r|}{Equipment} & Approximate Velocity Level at 25 Feet (VdB) & Approximate RMS \({ }^{1}\)
Velocity at 25 Feet (in/sec) \\
\hline \multicolumn{2}{|l|}{Pile Driver (sonic) Lower Range} & 93 & 0.170 \\
\hline \multicolumn{2}{|l|}{Large Bulldozer} & 87 & 0.089 \\
\hline \multicolumn{2}{|l|}{Caisson Drilling} & 87 & 0.089 \\
\hline \multicolumn{2}{|l|}{Jackhammer} & 79 & 0.035 \\
\hline \multicolumn{2}{|l|}{Small Bulldozer} & 58 & 0.003 \\
\hline \multicolumn{2}{|l|}{Loaded Trucks} & 86 & 0.076 \\
\hline \multirow[t]{3}{*}{\[
\begin{aligned}
& \stackrel{\pi}{4} \\
& \stackrel{y}{6}
\end{aligned}
\]} & \begin{tabular}{l}
FTA - Human Annoyance (Residential Daytime) \\
FTA - Human Annoyance (Residential Nighttime) \\
FTA - Human Annoyance (Office)
\end{tabular} & \[
\begin{aligned}
& 78 \\
& 72 \\
& 84
\end{aligned}
\] & - \\
\hline & FTA - Structural Damage (Residential) & - & 0.20 \\
\hline & FTA - Structural Damage (Office) & - & 0.30 \\
\hline \multicolumn{3}{|l|}{Source: FTA 2006
1 RMS velocity calculated from vibration level (VdB) using the reference of 1 microinch/second.} & \\
\hline
\end{tabular}

As shown in Table 4, vibration generated by certain, vibration-intensive construction equipment has the potential to be substantial (should those particular items be employed at any given construction site), since these items have the potential to exceed the FTA criteria for structural damage of \(0.20 \mathrm{in} / \mathrm{sec}\).

\section*{Construction Equipment Noise Levels}

\section*{Construction Equipment}

Each stage of construction involves the use of different kinds of construction equipment and therefore has its own distinct noise characteristics. Noise levels from construction activities are dominated by the loudest piece of equipment and generally occur during the site preparation and grading phase, when bulldozers, backhoes, and graders are used. Table 5 shows the average noise levels from individual pieces of construction equipment. Table 6 shows the maximum operational noise levels of heavy construction equipment.

Table 5 Average Construction Equipment Noise Levels
\begin{tabular}{l|c}
\hline \multicolumn{1}{c|}{ Type of Equipment } & \begin{tabular}{c} 
Average Measured Sound Levels \\
(dBA at 50 feet)
\end{tabular} \\
\hline Pile Driver, Impact & 101 \\
\hline Pile Driver, Sonic & 96 \\
\hline Ballast Tamper & 83 \\
\hline Compactor & 82 \\
\hline Concrete Mixer & 85 \\
\hline Crane, Mobile & 83 \\
\hline Crane, Derrick & 88 \\
\hline Loader, Large & 85 \\
\hline Loader, Front-End & 79 \\
\hline Paver & 89 \\
\hline Scraper & 89 \\
\hline Jack Hammers & 88 \\
\hline Pneumatic Tools & 85 \\
\hline Pumps & 76 \\
\hline Dozer, Small & 80 \\
\hline
\end{tabular}
\begin{tabular}{l|c} 
Table 5 \(\quad\) Average Construction Equipment \\
\hline\(\quad\) Type of Equipment & \begin{tabular}{c} 
Average Measured Sound Levels \\
(dBA at 50 feet)
\end{tabular} \\
\hline Dozer, Large & 86 \\
\hline Hydraulic Backhoe & 85 \\
\hline Hydraulic Excavators & 82 \\
\hline Graders & 85 \\
\hline Air Compressors & 81 \\
\hline Trucks & 91 \\
\hline Source: Bolt, Beranek and Newman, 1971; FTA, 2006. \({ }^{1}\) & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline Type of Equipment & Range of Maximum Sound Levels Measured (dBA at 50 ft .) & Suggested Maximum Sound Levels for Analysis (dBA at 50 ft .) \\
\hline Jack Hammers & 75-88 & 82 \\
\hline Pneumatic Tools & 78-88 & 85 \\
\hline Pumps & 74-84 & 80 \\
\hline Dozers & 77-90 & 85 \\
\hline Pile Driver, Impact & 95-110 & 105 \\
\hline Pile Driver, Sonic & 90-105 & 100 \\
\hline Scrapers & 83-91 & 87 \\
\hline Haul Trucks & 83-94 & 88 \\
\hline Cranes & 79-86 & 82 \\
\hline Portable Generators & 71-87 & 80 \\
\hline Rollers & 75-82 & 80 \\
\hline Tractors & 77-82 & 80 \\
\hline Front-End Loaders & 77-90 & 86 \\
\hline Hydraulic Backhoe & 81-90 & 86 \\
\hline Hydraulic Excavators & 81-90 & 86 \\
\hline Graders & 79-89 & 86 \\
\hline Air Compressors & 76-89 & 86 \\
\hline Trucks & 81-87 & 86 \\
\hline
\end{tabular}

Construction equipment typically moves around on the project site and under variable power levels. Noise from construction equipment decreases by 6 to 7.5 dB with each doubling of distance between the source and receptor. \({ }^{2}\) For example, the noise levels from a bulldozer that generates 85 dBA at 50 feet would measure 79 dBA at 100 feet, 73 dBA at 200 feet, 67 dBA at 400 feet, and 61 dBA at 800 feet (conservatively using a 6 dB

\footnotetext{
\({ }^{1}\) Bolt, Beranek \& Newman (BBN); Noise Control for Buildings and Manufacturing Plants, 1987; Federal Transit Administration (FTA). 2006, May. Transit Noise and Vibration Impact Assessment. U.S. Department of Transportation (DoT). FTA-VA-90-100306.
\({ }^{2}\) As sound energy travels outward from the source, spreading loss accounts for a 6 dB decrease in noise level. Soft ground and atmospheric absorption effects can add another decrement of 1.5 dB (for a total of 7.5 dB per distance doubling).
}
per doubling of distance attenuation factor). Also, noise levels are typically reduced from this value due to usage factors \({ }^{3}\) as well as the barrier effects provided by the physical structures once erected.

\section*{Existing Setting}

The proposed buildout of the Temecula Valley Charter School is to be located in the census-designated-place (CDP) of French Valley; in unincorporated Riverside County. The proposed project site is located on the west side of Winchester Road (State Road 79) between Keller Road and Pourroy Road. The site encompasses approximately 15 acres and is mostly undeveloped except for residential uses in the westerly part of the project site. This residential area consists of two single-family residences, one garage, and two above-ground water tanks. The garage in the south-central part of the site, the mobile home, and the garage are to be demolished at commencement of the project, while the vacant single-family residence in the northwestern part of the site would be left as is.

The major existing noise source on the proposed project site is traffic noise from vehicles along Winchester Road (State Road 79). Other noise sources include aircraft noise from nearby airports/heliports and operational noise from residences in the vicinity of the project; including people talking and general property maintenance.

The project site is surrounded by rural residences to the west and north, vacant land to the south, and a mix of vacant and agricultural land to the east (beyond Winchester Road). The nearest residence to the project site (not including the vacant single family residence in the northwestern part of the site) is a single-family home just north of the western part of the site. There are also multiple single-family residences between 200 and 500 feet north of the proposed project site, and approximately 350 feet west of the proposed project site. This residential land surrounding the project site is considered rural residential, as there are less than 20 residences within a 1,000-foot radius around the project site.

\section*{REGULATORY FRAMEWORK}

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

\section*{Federal Regulations}

\section*{Federal Highway Administration}

The FHWA values are the maximum desirable values by land use type and area based on a "trade-off" of what is desirable and what is reasonably feasible. These values recognize that in many cases lower noise exposures would result in greater community benefits. The FHWA design noise levels are included in Table 4.

\footnotetext{
\({ }^{3}\) Usage factor is the percentage of time during the workday that the equipment is operating at full power (on which the reference noise ratings for typical average and typical maximum noise emissions are based).
}
\begin{tabular}{c|c|c|l} 
Table 4 & \multicolumn{4}{|c}{ FHWA Design Noise Levels } \\
\begin{tabular}{c} 
Activity \\
Category
\end{tabular} & \multicolumn{2}{|c|}{ Design Noise Levels \({ }^{1}\)} & \\
\cline { 2 - 3 } A & Leq (dBA) & \(\mathrm{L}_{10}\) (dBA) & \\
\hline A & \begin{tabular}{c}
57 \\
(exterior)
\end{tabular} & \begin{tabular}{c}
60 \\
(exterior)
\end{tabular} & \begin{tabular}{l} 
Lands on which serenity and quiet are of extraordinary significance and serve \\
an important public need and where the preservation of those qualities is \\
essential if the area is to continue to serve its intended purpose.
\end{tabular} \\
\hline B & \begin{tabular}{c}
67 \\
(exterior)
\end{tabular} & \begin{tabular}{c}
70 \\
(exterior)
\end{tabular} & \begin{tabular}{l} 
Picnic areas, recreation areas, playgrounds, active sports areas, parks, \\
residences, motels, hotels, schools, churches, libraries, and hospitals.
\end{tabular} \\
\hline C & \begin{tabular}{c}
72 \\
(exterior)
\end{tabular} & \begin{tabular}{c}
75 \\
(exterior)
\end{tabular} & \begin{tabular}{l} 
Developed lands, properties, or activities not included in Categories A or B, \\
above
\end{tabular} \\
\hline D & - & - & Undeveloped lands. \\
\hline E & \begin{tabular}{c}
52 \\
(interior)
\end{tabular} & \begin{tabular}{c}
55 \\
(interior)
\end{tabular} & \begin{tabular}{l} 
Residences, motels, hotels, public meeting rooms, schools, churches, \\
libraries, hospitals, and auditoriums.
\end{tabular} \\
\hline Source: FHWA &
\end{tabular}

Source: FHWA
1 Either \(L_{\text {eq }}\) or \(L_{10}\) (but not both) design noise levels may be used on a project.

\section*{U.S. Environmental Protection Agency}

In addition to FHWA standards, the United States Environmental Protection Agency (EPA) has identified the relationship between noise levels and human response. The EPA has determined that over a 24 -hour period, a \(L_{\text {eq }}\) of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an \(L_{\text {eq }}\) of 55 dBA and interior levels at or below 45 dBA . While these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community.

The EPA also set \(55 \mathrm{dBA} \mathrm{L}_{\mathrm{dn}}\) as the basic goal for exterior residential noise intrusion. However, other federal agencies, in consideration of their own program requirements and goals, as well as difficulty of actually achieving a goal of \(55 \mathrm{dBA} \mathrm{L}_{\mathrm{dn}}\), have settled on the \(65 \mathrm{dBA} \mathrm{L}_{\mathrm{dn}}\) level as their standard. At \(65 \mathrm{dBA} \mathrm{L}_{\mathrm{dn}}\), activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

\section*{Occupational Health and Safety Administration}

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Such limitations would apply to the operation of construction equipment and could also apply to any proposed industrial land uses. Noise exposure of this type is dependent on work conditions and is addressed through a facility's Health and Safety Plan, as required under OSHA, and is therefore not addressed further in this analysis.

\section*{California State Regulations}

The State regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise insulation standards and provides guidance for local land use compatibility.

The California Building Code (CBC), Title 24, Part 2, Volume 1, Chapter 12, Interior Environment, Section 1207.11.2, Allowable Interior Noise Levels, requires that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is evaluated as either the day-night average sound level (Ldn) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.

The California Green Building Standards Code (CALGreen), Chapter 5, Division, 5.5 has additional requirements for insulation that affect exterior-interior noise transmission for non-residential structures: Pursuant to section 5.507.4.1, Exterior Noise Transmission, Prescriptive Method, Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite sound transmission class (STC) rating of at least \(50 \mathrm{~L}_{\mathrm{dn}}\) or CNEL or a composite outdoor-indoor transmission class (OITC) rating of no less than \(40 \mathrm{~L}_{\mathrm{dn}}\) or CNEL with exterior windows of a minimum STC of 40 or OITC of 30 within a 65 dBA CNEL noise contour of an airport or within a 65 dBA CNEL or \(\mathrm{L}_{\mathrm{dn}}\) noise contour of a freeway, expressway, railroad, industrial source, or fixed-guideway source as determined by the noise element of the general plan. Where noise contours are not readily available, buildings exposed to a noise level of \(65 \mathrm{dBA} \mathrm{L}_{\text {eq }} 1\)-hour during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 L dn or CNEL (or OITC 35), with exterior windows of a minimum of STC 40 (or OITC 30).

Residential structures located within the noise contours identified above require an acoustical analysis showing that the structure has been designed to limit intruding noise in the prescribed allowable levels. To comply with these regulations, applicants for new the residential projects are required to submit an acoustical analysis report. The report is required to show topographical relationship of noise sources and dwelling site, identification of noise sources and their characteristics, predicted noise spectra at the exterior of the proposed dwelling structure considering present and future land usage, basis for the prediction (measured or obtained from published data), noise attenuation measures to be applied, and an analysis of the noise insulation effectiveness of the proposed construction showing that the prescribed interior noise level requirements are met. If interior allowable noise levels are met by requiring that windows be unopenable or closed, the design for the structure must also specify the means that will be employed to provide ventilation and cooling, if necessary, to provide a habitable interior environment.

Table 5, presents a land use compatibility chart for community noise prepared by the California Office of Noise Control. This table provides urban planners with a tool to gauge the compatibility of land uses relative to existing and future noise levels. Table 5 identifies 'normally acceptable', 'conditionally acceptable', 'normally unacceptable', and 'clearly unacceptable' noise levels for various land uses. The 'conditionally acceptable' and 'normally unacceptable' designations indicate that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated into the design. By comparison, a 'normally acceptable' designation indicates that standard construction can occur with no special noise reduction requirements.

Table 5 Community Noise and Land Use Compatibility


\footnotetext{
Source: California Office of Noise Control. Guidelines for the Preparation and Content of Noise Elements of the General Plan. February 1976. Adapted from the US EPA Office of Noise Abatement Control, Washington D.C. Community Noise. Prepared by Wyle Laboratories. December 1971.
}

\section*{County of Riverside Municipal Code}

\section*{Chapter 9.52 - NOISE REGULATION}

Sections: 9.52.010 - Intent.
At certain levels, sound becomes noise and may jeopardize the health, safety or general welfare of Riverside County residents and degrade their quality of life. Pursuant to its police power, the board of supervisors declares that noise shall be regulated in the manner described in this chapter. This chapter is intended to establish county-wide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are established.
(Ord. 847 § 1, 2006)

\subsection*{15.04.020 - General regulations}
F.

Construction noise.
1.

Whenever a construction site is within one-quarter of a mile of an occupied residence or residences, no construcition activities shall be undertaken between the hours of six p.m. and six a.m. during the months of June through September and between the hours of six p.m. and six a.m. during the months of October through May. Exceptions to these standards shall be allowed only with the written consent of the building official.
2.

The generation of construction noise other than as permitted in subsection \((F)(1)\) of this section, shall be a violation of this title, and the building official or his or her designee shall have the authority to undertake enforcement actions in accordance with the procedures, remedies and penalties for violations as provided for in Riverside County Ordinance No. 725 (Chapter 1.16 of this code), which is incorporated into this chapter by reference.

\section*{County of Riverside Noise Element}

\section*{(appended belon)}

\section*{Methodology}

The analysis of noise impacts considers project construction and operations noise as defined by the County of Riverside (for noise compatibility, construction noise impacts, and stationary noise impacts) and the Federal Transit Administration (FTA) methodology (for construction vibration impacts). The proposed project would have a significant adverse noise impact if the project results in any of the following:

\section*{Traffic Noise Levels}

The traffic noise thresholds are based on human tolerance to noise and are widely used for assessing traffic noise impacts. The threshold for increase in traffic noise levels is based on the potential for traffic noise to become considerably louder than the ambient noise level. In general, noise levels must increase by 10 dB in order to double ambient noise levels. An increase of 5 dB is readily perceptible to the public, and a 3 dB increase is barely perceivable to the average healthy human ear (Caltrans 2009). An audible noise level increase in projectrelated traffic noise of 3 dB or more is to be considered substantial and will be treated as a significant impact. Traffic noise analysis was conducted by [traffic org] on the major roadways in the vicinity of the project area. Based on the FHWA-RD77-108 roadway noise calculation method \({ }^{4}\), noise levels along nearby roadways were analyzed with respect to both existing traffic conditions and to traffic conditions estimated at full build-out of the project. These values were compared, and a noise level increase of 3 dB or more would signify a potential impact.

\section*{Stationary-Source Noise}

The stationary noise thresholds are based on a combination of the human tolerance to noise and local criteria for stationary noise sources as established by the County of Riverside for noise control. Nuisance noise criteria is found in the County' Noise Element which established an exterior threshold of \(65 \mathrm{dBA} \mathrm{L}_{\mathrm{eq}}\) for noise that occurs in daytime (7:00 AM to 10:00 PM) and \(45 \mathrm{dBA} \mathrm{L}_{\text {eq }}\) for noise that occurs in the nighttime (10:00 PM to 7:00 AM). Any project related operations that are expected to exceed the criteria included in the Riverside County Noise Element and Municipal Code will be treated as a noise impact.

\section*{Construction}

The potential for construction noise impacts to be objectionable depends on the magnitude of noise generated by the construction equipment, the frequency of noise sources during the construction day, and total duration of construction activities. The County Code regulates the timing of construction activities. The county of Riverside restricts construction activities to the daytime hours of 6:00 AM to 6:00 PM (Section 15.04.020 of the County Code). In order to calculate construction noise as it affects sensitive receptors, the FWHA Roadway Construction Noise Model calculation methodology was used. Using information provided by the County of Riverside, coupled with methodologies and inputs employed in the air quality assessment, the expected construction equipment mix was estimated and categorized by construction activity. FWHA RCNM includes reference noise levels for numerous equipment items, which were combined based on the equipment mix to establish a baseline noise levels per construction phase. Distances from construction activities were measured using aerial maps, and these distances were used to account for spreading loss between the source (construction activities) and receiver (sensitive receptor). Since this calculation does not account for shielding due to intervening buildings and structures, ground effects, or air absorption, the results of these calculations are conservative.

\section*{Vibration}

Based on the FTA vibration criteria, vibration annoyance impacts are considered significant when average vibration levels produced by construction equipment would produce excessive levels of vibration ( 78 VdB ) during the daytime at offsite vibration-sensitive structures. In addition, the vibration level at which there is a risk of architectural damage is based on the FTA criteria ( \(0.2 \mathrm{in} / \mathrm{sec}\) for typical wood-framed buildings or 0.5

\footnotetext{
\({ }^{4}\) Barry, T.M., and J. Regan. FHWA Traffic Noise Prediction Model. Report No. FHWA-RD-77-108. Washington, DC: Federal Highway Administration, December 1978.
}
in/sec for reinforced concrete, steel, or timber). The FTA Transit Noise and Vibration Impact Assessment Manual includes reference levels for numerous equipment items. Distances from construction activities were measured using aerial maps, and these distances were used to account for spreading loss between the source (construction equipment) and receiver (sensitive receptor). An impact due to vibration will occur if the measured vibration levels at any sensitive receiver exceeds the vibration criteria for that receiver.

\section*{Thresholds of Significance}

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:
N-1 Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

N-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

N-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

N-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

N-5 For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

N-6 For a project within the vicinity of a private airstrip, expose people residing or working the project area to excessive noise levels.

\section*{Calculations}
[insert calculation docs]

\section*{Bibliography}

Beranek, Leo. Noise and Vibration Control. Revised Edition. Institute of Noise Control Engineering. Washington, D.C. 1988.

Bies, David A. and Colin H. Hansen. 2009. Engineering Noise Control: Theory and Practice. 4th ed. New York: Spon Press.

Bolt, Beranek \& Newman (BBN); Noise Control for Buildings and Manufacturing Plants, 1987.
California Department of Transportation (Caltrans). 2006, August. Traffic Noise Analysis Protocol.
California Department of Transportation (Caltrans). 2009, November. Technical Noise Supplement ("TeNS"). Prepared by ICF International.

California Department of Transportation (Caltrans), Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office. 2004, June. Transportation- and Construction-Induced Vibration Guidance Manual. Prepared by ICF International.

California Department of Transportation (Caltrans), Division of Environmental Analysis. 2002, February. Transportation Related Earthborne Vibration (Caltrans Experiences). Technical Advisory, Vibration. TAV-02-01-R9601. Prepared by Rudy Hendricks.

California Supreme Court. California Building Industry Association v. Bay Area Air Quality Management District (2015) [Case No. S213478]

Federal Highway Administration (FHWA). 1978, December. Federal Highway Traffic Noise Prediction Model. U.S. Department of Transportation (DoT) Report No. FHWA-RD77-108.

Federal Highway Administration (FHWA). 2011, July. Noise Compatible Planning, a Federal Approach - The Audible Landscape. U.S. Department of Transportation (DoT), Federal Highway Administration (FRA), Office of Planning, Environment, \& Realty. Accessed at: http://www.fhwa.dot.gov/environment/noise/noise_compatible_planning/federal_approach/audib le_landscape/al04.cfm

Federal Transit Administration (FTA). 2006, May. Transit Noise and Vibration Impact Assessment. U.S. Department of Transportation (DoT). FTA-VA-90-1003-06.

Governor's Office of Planning and Research. 2003, October. State of California General Plan Guidelines.
Harris, Cyril M. Handbook of Acoustical Measurements and Noise Control, Third Edition. Acoustical Society of America. Woodbury, NY. 1998.

Society of Automotive Engineers, Inc. (SAE). 1971, October. House Noise - Reduction Measurements for Use in Studies of Aircraft Flyover Noise. AIR 1081.

Thalheimer, E., 2000, Construction Noise Control Program and Mitigation Strategy at the Central Artery/Tunnel Project. Institute of Noise Control Engineering.
U.S. Department of Housing and Urban Development (HUD). 1985, March. Noise Guidebook: A Reference Document for Implementing the Department of Housing and Urban Development's Noise Policy.
U.S. Environmental Protection Agency (EPA). 1978, November. Protective Noise Levels. EPA 550/9-79-100. (Condensed version of 1971 and 1974 documents.)

1974, March. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Washington, D.C.: U.S. EPA Office of Noise Abatement and Control

1971, December. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. Prepared by Bolt Beranek and Newman (Cambridge, MA) for the U.S. EPA Office of Noise Abatement and Control. Washington, D.C.

Barry, T.M., and J. Regan. FHWA Traffic Noise Prediction Model. Report No. FHWA-RD-77-108.
Washington, DC: Federal Highway Administration, December 1978.

This page intentionally left blank

\section*{Chapter 7 Noise Element}

\section*{TABLE OF CONTENTS \\ Chapter 7: Noise Element}
DEFINITIONS ..... N-1
INTRODUCTION ..... N-2
Addressing Noise Issues ..... N-2
Setting ..... N-3
NOISE SENSITIVE LAND USES ..... N-4
NOISE COMPATIBILITY ..... N-4
Noise Mitigation Strategies. ..... N-8
NOISE PRODUCERS ..... N-8
Location of Noise Producers ..... N-8
Agriculture ..... N-8
Stationary Noise ..... N-9
Community Noise Inventory ..... N-10
Wind Energy Conversion Systems (WECS) ..... N-11
Mobile Noise ..... N-11
Transportation ..... \(\mathrm{N}-12\)
Airports ..... \(\mathrm{N}-12\)
Chocolate Mountain Aerial Gunnery Range ..... N-13
Vehicular ..... \(\mathrm{N}-14\)
Mass Transit ..... \(\mathrm{N}-15\)
Rail ..... N-16
BUILDING AND DESIGN ..... \(\mathrm{N}-16\)
Natural Barriers and Landscaping ..... N-17
Temporary Construction ..... \(\mathrm{N}-17\)
Building and Design Techniques ..... \(\mathrm{N}-17\)
Mixed Use ..... \(\mathrm{N}-18\)
VIBRATION ..... N-19
NOISE INFORMATION MANAGEMENT ..... N-20
Mapping ..... \(\mathrm{N}-20\)
Noise Data Management ..... \(\mathrm{N}-20\)
Public Noise Information ..... N -21
LIST OF FIGURES
Figure N-1 Common Noise Sources and Noise Levels ..... N-4
LIST OF TABLES
Table N-1 Land Use Compatibility for Community Noise Exposure ..... N-7
Table N-2: Stationary Source Land Use Noise Standards \({ }^{1}\) ..... N-8
Table N-3: Human Reaction to Typical Vibration Levels ..... N-19

This page intentionally left blank.


\section*{Definitions}


The level of sound that impacts a property varies greatly during the day.
As an example, the sound near an airport may be relatively quiet when no airplane is taking off or landing, but will be extremely loud as a plane takes off. In order to deal with these variations, several noise indices have been developed, which measure how loud each sound is, how long it
lasts, and how often the sound occurs. The indices express all the sound occurring during the day as a single
average level, which if it occurred all day would convey the same sound energy to the site.

Following is a list of commonly used terms and abbreviations that may be found within this element or when discussing the topic of noise. This is an abbreviated glossary to be reviewed prior to reading the element. It is important to become familiar with the definitions listed in order to better understand the importance of the Noise Element within the County of Riverside General Plan. Since the disbanding of the State of California Office of Noise Control in the mid-1990, the State of California Office of Planning and Research General Plan Guidelines can offer further information on other noise-related resources.

Ambient Noise: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL (Community Noise Equivalent Level): The average equivalent Aweighted sound level during a 24 -hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.
\(\mathbf{d B}\) (Decibel): The unit of measure that denotes the ratio between two quantities that are proportional to power; the number of decibels corresponding to the ratio of the two amounts of power is based on a logarithmic scale.
dBA (A-weighted decibel): The A-weighted decibel scale discriminates upper and lower frequencies in a manner approximating the sensitivity of the human ear. The scale is based on a reference pressure level of 20 micropascals.

Intrusive Noise: That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency and time of occurrence, and tonal or informational content as well as the prevailing noise level.
\(\mathbf{L}_{10}\) : The A-weighted sound level exceeded \(10 \%\) of the sample time. Similarly, \(\mathrm{L}_{50}, \mathrm{~L}_{90}\), etc.


Sound refers to anything that is or may be perceived by the ear.

Noise is defined as "unwanted sound" because of its potential to disrupt sleep, rest, work, communication, and recreation, to interfere with speech communication, to produce physiological or psychological damage, and to damage hearing.
\(\mathbf{L}_{\text {eq }}\) (Equivalent energy level): The average acoustic energy content of noise during the time it lasts. The \(\mathrm{L}_{\mathrm{eq}}\) of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure, no matter what time of day they occur. The County of Riverside uses a 10 -minute \(\mathrm{L}_{\text {eq }}\) measurement.
\(\mathbf{L}_{\mathrm{dn}}\) (Day-Night Average Level): The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. Note: CNEL and Ldn represent daily levels of noise exposure averaged on an annual or daily basis, while Leq represents the equivalent energy noise exposure for a shorter time period, typically one hour.

Micropascal: The international unit for pressure, similar to pounds per square inch. 20 micropascals is the human hearing threshold. The scale ranges from zero for the average least perceptible sound to about 130 for the average pain level

Noise Contours: Lines drawn around a noise source indicating equal levels of noise exposure. CNEL and Ldn are the metrics used in this document to describe annoyance due to noise and to establish land use planning criteria for noise.

Before the alarm clock sounds, the lawn mower next door begins to roar. Then, while listening to the morning news on the radio, an airplane flies overhead and deadens all sound in the neighborhood. Once outside, the neighbor's stereo can be heard a block away. And during the morning commute, car horns, rumbling mufflers, and whirring motorcycles serenade motorists on the highway. Even in the most rural areas of Riverside County, the eternal battle between the efficiency of technology, and the noise it can create cannot be avoided.

As modern transportation systems continue to develop and human dependence upon machines continues to increase, the general level of noise in our day to day living environment rises. In Riverside County, residential areas near airports, freeways, and railroads are being adversely affected by annoying or hazardous noise levels. Other activities such as construction, operation of household power tools and appliances, and industry, also contribute to increasing background noise.

\section*{Addressing Noise Issues}

The Noise Element is a mandatory component of the General Plan pursuant to the California Planning and Zoning Law, Section 65302(f). The element must recognize the guidelines adopted by the Office of Planning and

\section*{Chapter 7 Noise Element}

Research pursuant to Section 46050.1 of the Health and Safety Code. It also can be utilized as a tool for compliance with the State of California's noise insulation standards.

The General Plan Noise Element provides a systematic approach to identifying and appraising noise problems in the community; quantifying existing and projected noise levels; addressing excessive noise exposure; and community planning for the regulation of noise. This element includes policies, standards, criteria, programs, diagrams, a reference to action items, and maps related to protecting public health and welfare from noise.

\section*{Setting}

Riverside County is a continuously evolving group of communities that relies heavily upon the modern technological conveniences of American society to thrive and succeed as a pleasant and desirable place to live and work. Without such necessities as air-conditioning, heating, generators, and cars, living in an urban, suburban, rural, desert, or mountainous environment becomes difficult, if not impossible. Fortunately, these amenities are available to the residents of Riverside County and are used every day, often all day long. Unfortunately, these technological advances can come at a high price to residents' and visitors' ears.

The philosophical view commonly held by Riverside County staff and residents is that noise, which may be perceived by some to be annoying, may not be noticed at all by others. It is also important to note that people who move into an area where a noise source already exists (such as near an existing highway) are often more tolerant of that noise source than when a new noise generator locates itself in an established area that may be noise-sensitive (such as a stadium that is constructed near an established community).

Noise within Riverside County is generated by numerous sources found near places where people live and work. These sources are of particular concern when the noise they generate reaches levels above the prevailing background noise. There are many different types of noise, including mobile, stationary, and construction-related, that affect noise-sensitive receptors such as residences, schools, and hospitals. Figure N-1, Common Noise Sources and Noise Levels, illustrates some noise producers that can be found within Riverside County, as well as their corresponding noise measurement. The following sections contain policies that address the issues of noise producers and their effects on noise-sensitive land uses.

Figure N-1 Common Noise Sources and Noise Levels


\section*{Noise Sensitive Land Uses}

A series of land uses have been deemed sensitive by the State of California. These land uses require a serene environment as part of the overall facility or residential experience. Many of these facilities depend on low levels of sound to promote the wellbeing of the occupants. These uses include, but are not necessarily limited to; schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas. Activities conducted in proximity to these facilities must consider the noise output, and ensure that they don't create unacceptable noise levels that may unduly affect the noise-sensitive uses. The following policies address issues related to noise-sensitive land uses.

\section*{Noise Compatibility}

The Noise Element of the General Plan is closely related to the Land Use Element because of the effects that noise has on sensitive land uses. Noise-producing land uses must be compatible with adjacent land uses in order for the Land Use Plan to be successful. Land uses that emit noise are measured in A-weighted decibels (dBA) or Community Noise Equivalent Level (CNEL). If existing land uses emit noise above a certain level, they are not

\section*{Chapter 7 Noise Element}
compatible with one another, and therefore noise attenuation devices must be used to mitigate the noise to acceptable levels indoors and outdoors. In cases of new development, the placement of noise-sensitive land uses is integral to a successful community. Table N-1, Land Use Compatibility for Community Noise Exposure, reveals the noise acceptability levels for different land uses. Areas around airports may have different or more restrictive noise standards than those cited in Table N-1 (See Policy N 1.3 below). The following policies protect noise-sensitive land uses from noise emitted by outside sources, and prevent new projects from generating adverse noise levels on adjacent properties.

\section*{Policies:}

N \(1.1 \quad\) Protect noise-sensitive land uses from high levels of noise by
restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used. (AI 107)

N 1.2 Guide noise-tolerant land uses into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors or within the projected noise contours of any adjacent airports. (AI 107)

N \(1.3 \quad\) Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL:

The General Plan policy and implementation item reference system:

LU 1.3: Identifies which element contains the Policy, in this case the Land Use Element, and the sequential number.
Al 1 and AI 4: Reference to the relevant Action Items contained in the Implementation Program found in Appendix K.
- Schools.
- Hospitals.
- Rest Homes.
- Long Term Care Facilities.
- Mental Care Facilities.
- Residential Uses.
- Libraries.
- Passive Recreation Uses.
- Places of Worship.

According to the State of California Office of Planning and Research General Plan Guidelines, an acoustical study may be required in cases where these noise-sensitive land uses are located in an area of 60 CNEL or greater. Any land use that is exposed to levels higher than 65 CNEL will require noise attenuation measures.

Areas around airports may have different noise standards than those cited above. Each Area Plan affected by a public-use airport includes one or more Airport Influence Areas, one for each airport. The applicable noise compatibility criteria are fully set forth in Appendix L-1 and summarized in the Policy Area section of the affected Area Plan. (AI 105)

N 1.4 Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys. (AI 106, 109)

N 1.5 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County. (AI 105, 106, 108)

N 1.6 Minimize noise spillover or encroachment from commercial and industrial land uses into adjoining residential neighborhoods or noise-sensitive uses. (AI 107)

N 1.7 Require proposed land uses, affected by unacceptably high noise levels, to have an acoustical specialist prepare a study of the noise problems and recommend structural and site design features that will adequately mitigate the noise problem. (AI 106, 107)

N 1.8 Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses, except when dealing with noise emissions from wind turbines. Please see the Wind Energy Conversion Systems section for more information. (AI 108)

Table N-1
Land Use Compatibility for Community Noise Exposure

\section*{LAND USE CATEGORY}

COMMUNITY NOISE EXPOSURE LEVEL Ldn or CNEL, dBA

Residential-Low Density
Single Family, Duplex, Mobile Homes

Residential-Multiple Family

Transient Lodging-Motels, Hotels

Schools, Libraries, Churches, Hospitals, Nursing Homes

Auditoriums, Concert Halls, Amphitheaters

Sports Arena, Outdoor Spectator Sports


Playgrounds, Neighborhood Parks


\section*{Noise Mitigation Strategies}

Many land uses emit noise above state-mandated acceptable levels. The noise emitted from a land use must be mitigated to acceptable levels indoors and outdoors in order for other, more noise-sensitive land uses to locate in proximity to these noise producers. There are a number of ways to mitigate noise and the following policies suggest some possible solutions to noise problems.

\section*{Policies:}

N 2.1 Create a County Noise Inventory to identify major noise generators and noise-sensitive land uses, and to establish appropriate noise mitigation strategies. (AI 105)

N 2.2 Require a qualified acoustical specialist to prepare acoustical studies for proposed noise-sensitive projects within noise impacted areas to mitigate existing noise. (AI 105, 107)

N 2.3 Mitigate exterior and interior noises to the levels listed in Table N -2 below to the extent feasible, for stationary sources: (AI 105)

Table N-2:
Stationary Source Land Use Noise Standards \({ }^{1}\)
\begin{tabular}{l|c|c}
\hline \multicolumn{1}{c}{ Land Use } & Interior Standards & Exterior Standards \\
\hline Residential & & \\
10:00 p.m. to 7:00 a.m. & 40 Leq (10 minute) & 45 Leq (10 minute) \\
7:00 a.m. to 10:00 p.m. & 55 Leq (10 minute) & 65 Leq (10 minute) \\
\hline
\end{tabular}

1 These are only preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health.

\section*{Noise Producers}

\section*{Location of Noise Producers}

\section*{66 \\ Good neighbors keep their noise to themselves.}

99

The communities of Riverside County need a variety of land uses in order to thrive and succeed. These land uses may provide jobs, clean water, ensure safety, ship goods, and ease transportation woes. But they may also emit high levels of noise throughout the day. These noise-producing land uses can complement a community when the noise they emit is properly mitigated. The following policies suggest a series of surveys and analyses to correctly identify the proper noise mitigating procedures in order to promote the continued success of the communities of Riverside County.

\section*{Agriculture}

One of the major economic thrusts of Riverside County is the agricultural industry. The Riverside County Right-to-Farm Ordinance conserves, protects, and encourages the development, improvement, and continued viability of agricultural land and industries for the long-term production of food and other agricultural products, and for the economic well-being of Riverside County's residents. The Right-to-Farm Ordinance also attempts to balance the rights of farmers to produce food and other agricultural products with the rights of non-farmers who own,

\section*{Chapter 7 Noise Element}
occupy, or use land within or adjacent to agricultural areas. The Riverside County Right-to-Farm Ordinance also works to reduce the burden of Riverside County's agricultural resources by limiting the circumstances under which agricultural operations may be deemed a nuisance. Policies within this section address the potential noise issues that may be raised in regards to agricultural production.

\section*{Policies:}

N 3.1 Protect Riverside County's agricultural resources from noise complaints that may result from routine farming practices, through the enforcement of the Riverside County Right-to-Farm Ordinance. (AI 105, 107)

N 3.2 Require acoustical studies and subsequent approval by the Planning Department and the Office of Industrial Hygiene, to help determine effective noise mitigation strategies in noise-producing areas. (AI 105)

N 3.3 Ensure compatibility between industrial development and adjacent land uses. To achieve compatibility, industrial development projects may be required to include noise mitigation measures to avoid or minimize project impacts on adjacent uses. (AI 107)

N 3.4 Identify point-source noise producers such as manufacturing plants, truck transfer stations, and commercial development by conducting a survey of individual sites. (AI 106)

N 3.5 Require that a noise analysis be conducted by an acoustical specialist for all proposed projects that are noise producers. Include recommendations for design mitigation if the project is to be located either within proximity of a noise-sensitive land use, or land designated for noisesensitive land uses. (AI 109)

N 3.6 Discourage projects that are incapable of successfully mitigating excessive noise. (AI 107)
N 3.7 Encourage noise-tolerant land uses such as commercial or industrial, to locate in areas already committed to land uses that are noise-producing. (AI 107)

\section*{Stationary Noise}

A stationary noise producer is any entity in a fixed location that emits noise. Stationary noise producers are common in many noise-sensitive areas. Motors, appliances, air conditioners, lawn and garden equipment, power tools, and generators are often found in residential neighborhoods, as well as on or near the properties of schools, hospitals, and parks. These structures are often a permanent fixture and are required for the particular land use. Industrial and manufacturing facilities are also stationary noise producers that may affect sensitive land uses. Furthermore, while noise generated by the use of motor vehicles over public roads is preempted from local regulation, the County of Riverside considers the use of these vehicles to be a stationary noise source when operated on private property such as at a truck terminal or warehousing facility. The emitted noise from the producer can be mitigated to acceptable levels either at the source or on the adjacent property through the use of proper planning, setbacks, blockwalls, acoustic-rated windows, dense landscaping, or by changing the location of the noise producer. The following policies identify mechanisms to measure and mitigate the noise emitted from stationary noise producers.

\section*{Community Noise Inventory}

There are a series of noise producers within Riverside County that bear special recognition. These uses may be important parts of the economic health of Riverside County, but they still emit noise from time to time. Some of the special noise producers within Riverside County include, but are not limited to the Riverside Raceway, surface mining, truck transfer stations in the Mira Loma area, manufacturing facilities, and natural gas transmission pipelines.

Three high pressure natural gas transmission pipelines are located in the community of Cabazon (within the Pass Area Plan), and a series of valve stations are placed along the pipeline throughout the community. The pipelines supply a major portion of the non-transportation energy supply for Southern California. The depressurization of mainline valves at the valve stations for emergency or maintenance reasons can result in noise levels exceeding \(140 \mathrm{~dB} \mathrm{~L}_{\text {eq }}\) at a distance of 50 feet from the source for more than an hour at a time. The pipelines are not located in heavily populated areas; however, should higher-intensity uses be approved in the area in the future, possible relocation of one or more pipelines or valves may be necessary.

\section*{Policies:}

N \(4.1 \quad\) Prohibit facility-related noise received by any sensitive use from exceeding the following worstcase noise levels: (AI 105)
a. \(45 \mathrm{dBA}-10\)-minute \(\mathrm{L}_{\mathrm{eq}}\) between 10:00 p.m. and 7:00 a.m.
b. \(65 \mathrm{dBA}-10-\mathrm{min} u t e \mathrm{~L}_{\mathrm{eq}}\) between 7:00 a.m. and 10:00 p.m.

N 4.2 Develop measures to control non-transportation noise impacts. (AI 105)
N 4.3 Ensure any use determined to be a potential generator of significant stationary noise impacts be properly analyzed and ensure that the recommended mitigation measures are implemented. (AI 105, 106, 109)

N 4.4 Require that detailed and independent acoustical studies be conducted for any new or renovated land uses or structures determined to be potential major stationary noise sources. (AI 105)

N 4.5 Encourage major stationary noise-generating sources throughout the County of Riverside to install additional noise buffering or reduction mechanisms within their facilities to reduce noise generation levels to the lowest extent practicable prior to the renewal of conditional use permits or business licenses or prior to the approval and/or issuance of new conditional use permits for said facilities. (AI 105, 107) frequency tone with no harmonic content (e.g. hum). \(\quad\) N 4.6

Establish acceptable standards for residential noise sources such as, but not limited to, leaf blowers, mobile vendors, mobile stereos and stationary noise sources such as home appliances, air conditioners, and swimming pool equipment. (AI 105)

\section*{Chapter 7 Noise Element}

N 4.7 Evaluate noise producers for the possibility of pure-tone producing noises. Mitigate any pure tones that may be emitted from a noise source. (AI 106, 107)

N 4.8 Require that the parking structures, terminals, and loading docks of commercial or industrial land uses be designed to minimize the potential noise impacts of vehicles on the site as well as on adjacent land uses. (AI 106, 107)

\section*{Wind Energy Conversion Systems (WECS)}

Wind energy is a unique resource found only in a portion of Riverside County. Wind Energy Conversion Systems (WECS) are used to harness the energy found in strong gusts of wind. In order to fully capitalize on this special commodity, a large number of wind turbines have been placed in a portion of the Coachella Valley and San Gorgonio Pass within Riverside County. There are some residential areas spread throughout Riverside County that may also capitalize on wind-generated power. Though there is minimal residential development in the immediate areas where these windmills are located, the potential for noise and ground-borne vibration in neighboring developed areas may occur. The Wind Implementation Monitoring Program, designed and implemented by Riverside County, guides the policy direction for this area.

\section*{Policies:}

N 5.1 Enforce the Wind Implementation Monitoring Program (WIMP).
N 5.2 Encourage the replacement of outdated technology with more efficient technology with less noise impacts. (AI 105)

\section*{Mobile Noise}

Mobile noise sources may be one of the most annoying noise producers in a community because they are louder than background noises and more intense than many acceptable stationary noise sources. Though the noise emitted from mobile sources is temporary, it is often more disturbing because of its abruptness, especially single noise-producing events such as vehicle backfires. Common mobile noise sources include on-road vehicles, aircraft, and trains. The policies in this section identify common mobile noise sources, and suggest mitigation techniques to reduce the annoyance and burden of mobile


Please see the Circulation Element for further policies regarding transportation and noise related issues. noise sources on noise-sensitive receptors.

\section*{Policies:}

N 6.1 Consider noise reduction as a factor in the purchase of County maintenance equipment and their use by County contractors and permittees. (AI 108)

N 6.2 Investigate the feasibility of retrofitting current County-owned vehicles and mechanical equipment to comply with noise performance standards consistent with the best available noise reduction technology. (AI 108)

N 6.3 Require commercial or industrial truck delivery hours be limited when adjacent to noise-sensitive land uses unless there is no feasible alternative or there are overriding transportation benefits. (AI 105, 107)

N 6.4 Restrict the use of motorized trail bikes, mini-bikes, and other off-road vehicles in areas of the county except where designated for that purpose. Enforce strict operating hours for these vehicles in order to minimize noise impacts on sensitive land uses adjacent to public trails and parks. (AI 105, 108)

\section*{5}

The following airports are located within or have a direct effect on Riverside County. Please see Appendix L-1 for a map with each airport=s noise contours. Also see the area plans and airport land use plans for more specific airport-related policies:
- Banning Municipal Airport
- Bermuda Dunes Airport
- Blythe Airport
- Chino Airport
- Corona Municipal Airport
- Chiriaco Summit Airport
- Jacqueline Cochran Regional Airport
- Flabob Airport
- French Valley Airport
- Hemet-Ryan Airport
- March Joint Air Reserve Base/March Inland Port
- Palm Springs International Airport
- Perris Valley Airport
- Riverside Municipal Airport
- Skylark Airport

\section*{Transportation}

The most common mobile noise sources in Riverside County are transportation-related. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a higher sustained noise level in proximity to areas sensitive to noise exposure. Rail and aircraft operations, though less frequent, may generate extremely high noise levels that can be disruptive to daily activities. Though mass transit has not yet been developed within Riverside County, it is important to consider the noise that may be generated from transit service.

\section*{Airports}

With the dynamic growth in aviation, aircraft noise will remain a challenging environmental problem and one that will affect an increasing number of people as air traffic routes and procedures change in the future. Aircraft noise appears to produce the greatest community anti-noise response, although the duration of the noise from a single airplane is much less, for example, than that from a freight train. There is great economic benefit to gain from airports of any size, although living in proximity to an airport will necessarily result in exposure to aircraft noise.

There are fourteen public use or military airports that are located within or have a direct effect on Riverside County. The land under the flight paths of each airport was monitored to determine the amount of noise emitted by common aircraft taking-off and landing at any given airport. Noise contours were created based on the measurements from the monitoring program. The CNEL noise contour(s) for the following airports have been depicted in the applicable Area Plan's Airport Influence Area section:
- Banning Municipal Airport
- Bermuda Dunes Airport
- Blythe Airport
- Chino Airport

\section*{Chapter 7 Noise Element}
- Chiriaco Summit Airport
- Corona Municipal Airport
- Jacqueline Cochran Regional Airport
- Flabob Airport
- French Valley Airport
- Hemet-Ryan Airport
- March Joint Air Reserve Base
- Riverside Municipal Airport

Airport Land Use Compatibility Plans have been created for most airports within Riverside County, and they should be referenced for further information regarding airports. Helicopters and heliports are also potential sources of noise, but due to the relatively low frequency and short duration of their operation in most circumstances, these operations do not significantly affect average noise levels within Riverside County. The following general policies address the noise that comes from airports and the aircraft they service.

\section*{Policies:}

N 7.1 New land use development within Airport Influence Areas shall comply with airport land use noise compatibility criteria contained in the corresponding airport land use compatibility plan for the area. Each Area Plan affected by a public-use airport includes one or more Airport Influence Areas, one for each airport. The applicable noise compatibility criteria are fully set forth in Appendix I-1and summarized in the Policy Area section of the affected Area Plan.

N 7.2 Adhere to applicable noise compatibility criteria when making decisions regarding land uses adjacent to airports. Refer to the Airports section of the Land Use Element (Page LU-32) and the Airport Influence Area sections of the corresponding Area Plans.

N 7.3 Prohibit new residential land uses, except construction of a single-family dwelling on a legal residential lot of record, within the current 60 dB CNEL contours of any currently operating public-use, or military airports. The applicable noise contours are as defined by the Riverside County Airport Land Use Commission and depicted in Appendix I-1, as well as in the applicable Area Plan's Airport Influence Area section.

N 7.4 Check each development proposal to determine if it is located within an airport noise impact area as depicted in the applicable Area Plan's Policy Area section regarding Airport Influence Areas. Development proposals within a noise impact area shall comply with applicable airport land use noise compatibility criteria.

\section*{Chocolate Mountain Aerial Gunnery Range}

A portion of the Chocolate Mountain Aerial Gunnery Range (CMAGR) is located in Riverside County, between the Eastern Coachella Valley Area Plan and East County Desert Areas. The CMAGR has served as a military
aerial bombing and gunnery training range since the 1940s. It is a centerpiece in a much larger training complex, known as the Bob Stump Training Range Complex, that incorporates adjacent and nearby special use airspaces and ranges located in southeast California and southwest Arizona. This complex supports full-spectrum combat operations so that Marines can realistically train as they will fight. The CMAGR's desert mountain terrain is ideal for air-to-ground attack and air-to-air combat training. Tactical military exercises involve live explosives and large force-on-force aviation training. Noise emitting from training exercises may extend past the CMAGR boundaries.

\section*{Policies:}

N 8.1 Prohibit residential development, except construction of a single-family dwelling on a legal residential lot of record, within the current 60 dB CNEL contours of the Chocolate Mountain Aerial Gunnery Range.

\section*{Vehicular}

Roadway traffic is one of the most pervasive sources of noise within Riverside County. Traffic noise varies in how it affects land uses depending upon the type of roadway, and the distance of the land use from that roadway. Some variables that affect the amount of noise emitted from a road are speed of traffic, flow of traffic, and type of traffic (e.g. tractor trailers versus cars). Another variable affecting the overall measure of noise is a perceived increase in sensitivity to vehicular noise at night. Appendix I-1 contains tables and figures that illustrate existing and forecasted noise from roadways throughout Riverside County. The existing noise measurements were obtained by measuring noise at different points adjacent to the roadway. The future noise contours along freeways and major highways, also located in Appendix I-1, were created from the results of traffic modeling to project the noise of major roadways in the future. The following policies address the issues of roadway traffic noise, and suggest methods to reduce the noise impact of roads on adjacent and nearby land uses.

\section*{Policies:}

N 9.1 Enforce all noise sections of the State Motor Vehicle Code.

N 9.2 Ensure the inclusion of noise mitigation measures in the design of new roadway projects in the county. (AI 105)

N 9.3 Require development that generates increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses to provide for appropriate mitigation measures. (AI 106)

N 9.4 Require that the loading and shipping facilities of commercial and industrial land uses, which abut residential parcels be located and designed to minimize the potential noise impacts upon residential parcels. (AI 105)

N 9.5 Employ noise mitigation practices when designing all future streets and highways, and when improvements occur along existing highway segments. These mitigation measures will

\section*{Chapter 7 \\ Noise Element}
emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas. (AI 105)

N 9.6 Require that all future exterior noise forecasts use Level of Service C, and be based on designed road capacity or 20 -year projection of development (whichever is less) for future noise forecasts. (AI 106)

N 9.7 Require that field noise monitoring be performed prior to siting to any sensitive land uses along arterial roadways. Noise level measurements should be of at least 10 minutes in duration and should include simultaneous vehicle counts so that more accurate vehicle ratios may be used in modeling ambient noise levels. (AI 106)

\section*{Mass Transit}

\section*{66}

Calling noise a nuisance is like calling smog an inconvenience. Noise must be considered a hazard to the health of people everywhere.

99
-The Surgeon General


Please see the Circulation Element for additional policies related to transit development and rail systems.

N 10.1 Encourage local and regional public transit providers to ensure that the equipment they operate and purchase is state-of-the-art and does not generate excessive noise impacts on the community. (AI 108)

N 10.2 Encourage the use of quieter electric-powered vehicles. (AI 108)
N 10.3 Encourage the development and use of alternative transportation modes including bicycle paths and pedestrian walkways to minimize vehicular noise within sensitive receptor areas.

N 10.4 Actively participate in the development of noise abatement plans for freeways and rapid transit. (AI 108)


An at-grade railroad crossing is one where the street and the rail line form an intersection, and physically cross oneanother.

\section*{Rail}

The rail system within Riverside County criss-crosses its way through communities, industrial areas, rural areas, and urban centers. Trains carry passengers, freight, and cargo to local and regional destinations day and night. Rail transportation may become more popular in the future if a mass public transportation system is implemented within Riverside County. Currently, daily train traffic produces noise that may disrupt activities in proximity to railroad tracks. For instance, trains are required to sound their horns at all at-grade crossings, and they may also be required to slow their speed through residential areas. These types of noise disturbances can interfere with activities conducted on noise-sensitive land uses. Exhibits showing existing railroad noise contours can be found in Appendix I-1. These exhibits provide purely illustrative contours along rail lines throughout Riverside County. The following policies suggest actions that could minimize the impacts of train noise on noise-sensitive land uses.

\section*{Policies:}

N 11.1 Check all proposed projects for possible location within railroad noise contours using typical noise contour diagrams. (AI 106, 109)

N 11.2 Minimize the noise effect of rail transit (freight and passenger) on residential uses and other sensitive land uses through the land use planning process. (AI 106, 109)

N 11.3 Locate light rail and fixed rail routes and design rail stations in areas that are accessible to both residential and commercial areas, but also minimize noise impacts on surrounding residential and sensitive land uses. (AI 106, 109)

N 11.4 Install noise mitigation features where rail operations impact existing adjacent residential or other noise-sensitive uses. (AI 108)

N 11.5 Restrict the development of new sensitive land uses to beyond the 65 decibel CNEL contour along railroad rights-of-way. (AI 106, 109)

\section*{Building and Design}

One of the most effective means of reducing noise in a sensitive area is to construct and design buildings in such a way that the noise is deflected in such a way that it does not affect the occupants. If the building has already been constructed, then landscaping and design techniques can be used to tastefully absorb the noise emitted from mobile or stationary sources. These building and design techniques should serve two purposes; to mitigate noise to acceptable indoor and outdoor levels, and to enhance the community character rather than detract from its surroundings. The following policies have been included in the Noise Element to ensure that the character of each community within Riverside County is preserved while minimizing noise to acceptable levels.

\section*{Chapter 7 \\ Noise Element}

\section*{Natural Barriers and Landscaping}

\section*{Policies:}

N 12.1 Utilize natural barriers such as hills, berms, boulders, and dense vegetation to assist in noise reduction. (AI 108)

N 12.2 Utilize dense landscaping to effectively reduce noise. However, when there is a long initial period where the immaturity of new landscaping makes this approach only marginally effective, utilize a large number of highly dense species planted in a fairly mature state, at close intervals, in conjunction with earthen berms, setbacks, or block walls. (AI 108)

\section*{Temporary Construction}

\section*{Policies:}

N 13.1 Minimize the impacts of construction noise on adjacent uses within acceptable practices. (AI 105, 108)

N 13.2 Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas. (AI 105, 108)

N 13.3 Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses (see policy N 1.3 ) by requiring the developer to submit a construction-related noise mitigation plan to the County for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through the use of such methods as:
a. Temporary noise attenuation fences;
b. Preferential location of equipment; and
c. Use of current noise suppression technology and equipment. (AI 107)

N 13.4 Require that all construction equipment utilizes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. (AI \(105,108)\)

\section*{Building and Design Techniques}

\section*{Policies:}

N 14.1 Enforce the California Building Standards that sets standards for building construction to mitigate interior noise levels to the tolerable 45 CNEL limit. These standards are utilized in conjunction with the Uniform Building Code by the County's Building Department to ensure that noise protection is provided to the public. Some design features may include extra-dense insulation, double-paned windows, and dense construction materials.

N 14.2 Continue to develop effective strategies and mitigation measures for the abatement of noise hazards reflecting effective site design approaches and state-of-the-art building technologies. (AI 108)

N 14.3 Incorporate acoustic site planning into the design of new development, particularly large scale, mixed-use, or masterplanned development, through measures which may include:
- Separation of noise-sensitive buildings from noisegenerating sources.

\section*{\(\xrightarrow{\wedge}\)}

Non-habitable areas within a home include:
- kitchens
- bathrooms
- hallways
- garages
- closets
- utility rooms
- laundry rooms
- Use of natural topography and intervening structure to shield noise-sensitive land uses.
- Adequate sound proofing within the receiving structure. (AI 106)

N 14.4 Consider and, when necessary, to lower noise to acceptable limits, require noise barriers and landscaped berms. (AI 108)

N 14.5 Consider the issue of adjacent residential land uses when designing and configuring all new, nonresidential development. Design and configure on-site ingress and egress points that divert traffic away from nearby noise-sensitive land uses to the greatest degree practicable. (AI 106, 107)

N 14.6 Prevent the transmission of excessive and unacceptable noise levels between individual tenants and businesses in commercial structures and between individual dwelling units in multi-family residential structures. (AI 105, 108)

N 14.7 Assist the efforts of local homeowners living in high noise areas to noise attenuate their homes through funding assistance and retrofitting program development, as feasible. (AI 105, 108)

N 14.8 Review all development applications for consistency with the standards and policies of the Noise Element of the General Plan.

N 14.9 Mitigate 600 square feet of exterior space to 65 dB CNEL when new development is proposed on residential parcels of 1 acre or greater.

\section*{Mixed Use}

\section*{Policies:}

N 15.1 Minimize the potential adverse noise impacts associated with the development of mixed-use structures where residential units are located above or adjacent to commercial uses. (AI 106, 107, 108)

N 15.2 Require that commercial and residential mixed-use structures minimize the transfer or transmission of noise and vibration from the commercial land use to the residential land use. (AI 105)

\section*{Chapter 7 Noise Element}

N 15.3 Minimize the generation of excessive noise level impacts from entertainment and restaurant/bar establishments into adjacent residential or noise-sensitive uses. (AI 105, 107)

\section*{Vibration}

Another community annoyance related to noise is vibration. As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized by displacement, velocity, and/or acceleration. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration.

Vibration can be felt outdoors, but the perceived intensity of vibration impacts are much greater indoors, due to the shaking of the structure. Some of the most common sources of vibration come from trains and/or transit vehicles, construction equipment, airplanes, and large vehicles. Several land uses are especially sensitive to vibration, and therefore have a lower vibration threshold. These uses include, but are not limited to, concert halls, hospitals, libraries, vibration-sensitive research operations, residential areas, schools, and offices.

Table N-3, Human Reaction to Typical Vibration Levels, presents the human reaction to various levels of peak particle velocity. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz . Traffic vibrations exhibit a similar range of frequencies. However, due to their suspension systems, city buses often generate frequencies around 30 Hz at high vehicle speeds. It is more uncommon, but possible, to measure traffic frequencies above 30 Hz .


Amplitude-the distance that a vibrating particle travels from a fixed point.

Frequency-the number of wave cycles that occur in 1 second.

Hertz (Hz)-the unit by which frequency is measured.

Displacement-a measure of the distance that a vibrated particle travels from its original position.

Velocity-the rate of speed at which particles move in inches per second or millimeters per second.

Acceleration-the rate of change in velocity with respect to time.

Table N-3:
Human Reaction to Typical Vibration Levels
\begin{tabular}{c|l}
\hline \begin{tabular}{c} 
Vibration Level Peak \\
Particle Velocity \\
(inches/second)
\end{tabular} & \multicolumn{1}{c}{ Human Reaction } \\
\hline \(0.0059-0.0188\) & Threshold of perception, possibility of intrusion \\
\hline 0.0787 & Vibrations readily perceptible \\
\hline 0.0984 & Continuous vibration begins to annoy people \\
\hline 0.1968 & Vibrations annoying to people in buildings \\
\hline \(0.3937-0.5905\) & \begin{tabular}{l} 
Vibrations considered unpleasant when continuously subjected and \\
unacceptable by some walking on bridges
\end{tabular} \\
\hline
\end{tabular}

Source: Caltrans, 1992

\section*{Policies:}

N 16.1 Restrict the placement of sensitive land uses in proximity to vibration-producing land uses. (AI 105)

N 16.2 Consider the following land uses sensitive to vibration:
- Hospitals;
- Residential areas;
- Concert halls;
- Libraries;
- Sensitive research operations;
- Schools; and
- Offices

N 16.3 Prohibit exposure of residential dwellings to perceptible ground vibration from passing trains as perceived at the ground or second floor. Perceptible motion shall be presumed to be a motion velocity of 0.01 inches/second over a range of 1 to 100 Hz .

\section*{Noise Information Management}

Current and projected noise data and maps for Riverside County require constant updating and review in order for the information to remain correct as well as accurate. Currently, there is no central noise information database available for Riverside County staff or residents to reference when noise inquiries arise. This information is necessary and should be easily accessible when reviewing potential development plans, building a new home, siting an industrial area, evaluating circulation routes, or conducting other advanced planning activities. The following policies guide the County of Riverside to create a database, or central location, where up-to-date information can be accessed by Riverside County Staff or residents.

\section*{Mapping}

\section*{Policies:}
\begin{tabular}{ccl} 
N 17.1 & \begin{tabular}{l} 
Identify, quantify, and map noise producers and provide noise \\
contour diagrams as is practical. (AI 109)
\end{tabular} \\
\begin{tabular}{c} 
Please see Table N-1 for \\
more information in order \\
to determine a noise
\end{tabular} & N 17.2 & \begin{tabular}{l} 
Identify and map noise-sensitive land uses throughout the \\
county. (AI 109)
\end{tabular} \\
\begin{tabular}{c} 
threshold necessary for \\
creating a noise \\
database.
\end{tabular} & N 17.3 & \begin{tabular}{l} 
Identify and map point-source noise producers such as surface \\
mines, wind turbines, manufacturing plants, truck transfer \\
stations, active recreational facilities, and amphitheaters. (AI \\
\(109)\)
\end{tabular}
\end{tabular}

\section*{Noise Data Management}

\section*{Policies:}

N 18.1 Maintain baseline information, on an ongoing basis, regarding ambient and stationary noise sources. (AI 105)

\section*{Chapter 7 \\ Noise Element}

N 18.2 Monitor and update available data regarding the community's existing and projected ambient stationary noise levels.

N 18.3 Assure that areas subject to noise hazards are identified, quantified, and mapped in a form that is available to decision makers. (AI 109)

N 18.4 Develop and maintain a detailed, comprehensive noise data base. (AI 106)
N 18.5 Develop and update county noise inventories using the following steps.
a. Identify noise sources and noise-sensitive land uses
b. Continue to identify various agency responsibilities, review noise complaint files, and conduct noise surveys and monitoring, as needed.

N 18.6 Identify those areas of the county affected by high noise levels. (AI 106, 107, 109)
N 18.7 Evaluate current land uses to identify potential noise conflict areas. (AI 106, 107, 109)
 develop existing and projected noise contours around major noise sources down to 50 CNEL. (AI 109)

N 18.9 Encourage greater involvement of other County departments in the identification, measurement, and reduction of noise hazards throughout the county, including: Building and Safety Department, Aviation Department, and the Department of Public Health-Office of Industrial Hygiene.

\section*{Public Noise Information}

\section*{Policies:}

N 19.1 Provide information to the public regarding the health effects of high noise levels and means of mitigating such levels. (AI 109)

N 19.2 Cooperate with industry to develop public information programs on noise abatement. (AI 108)
N 19.3 Condition that prospective purchasers or end users of property be notified of overflight, sight, and sound of routine aircraft operations by all effective means, including:
a. requiring new residential subdivisions that are located within the 60 CNEL contour or are subject to overflight, sight, and sound of aircraft from any airport, to have such information included in the State of California Final Subdivision Public Report.
b. requiring that Declaration and Notification of Aircraft Noise and Environmental Impacts be recorded and made available to prospective purchasers or end users of property located within the 60 CNEL noise contour for any airport or air station or is subject to routine aircraft overflight. (AI 109)

N 19.4 Promote increased awareness concerning the effects of noise and suggest methods by which the public can be of assistance in reducing noise.

N 19.5 Require new developments that have the potential to generate significant noise impacts to inform impacted users on the effects of these impacts during the environmental review process. (AI 106, 107)

\section*{Appendix}

This page intentionally left blank.

\section*{Appendix H Traffic Impact Analysis}

\title{
TRAFFIC IMPACT ANALYSIS
} Temecula Valley Charter School

Prepared for:
Temecula Valley Charter School Contact: Mark Horn, Board President

35755 Abelia Street
Winchester, California 92596
951.294.6780

Prepared by:
PlaceWorks
Contact: Fernando Sotelo, PE, PTP, Senior Associate
3 MacArthur Place, Suite 1100
Santa Ana, California 92707
714.966.9220
info@placeworks.com
www.placeworks.com

TVCS-02.0
Section Page
1. EXECUTIVE SUMMARY ..... 1
1.1 IMPACTS TO THE CIRCULATION SYSTEM ..... 1
2. INTRODUCTION ..... 5
2.1 PROJECT OVERVIEW ..... 5
2.2 METHODOLOGY ..... 5
3. EXISTING CONDITIONS ..... 15
3.1 STUDY AREA ROADWAY NETWORK ..... 15
3.2 EXISTING INTERSECTIONS OPERATIONS ..... 25
3.3 TRANSIT SERVICE AND NON-MOTORIZED CIRCULATION ..... 25
4. PROJECT TRAFFIC ..... 27
4.1 TRIP GENERATION ..... 27
4.2 TRIP DISTRIBUTION ..... 27
4.3 MODAL SPLIT AND TRIP ASSIGNMENT ..... 28
4.4 EXISTING PLUS PROJECT TRAFFIC CONDITIONS ..... 28
5. FUTURE TRAFFIC CONDITIONS ..... 31
5.1 EXISTING PLUS AMBIENT PLUS PROJECT TRAFFIC CONDITIONS ..... 31
5.22018 WITHOUT PROJECT TRAFFIC CONDITIONS ..... 32
5.32018 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS ..... 33
6. IMPACTS ..... 37
6.1 EXISTING PLUS PROJECT CONDITIONS ..... 37
6.2 2018 CUMULATIVE PLUS PROJECT CONDITIONS ..... 37
6.2.1 Applicable Funding Mechanisms ..... 38
7. SIGNAL WARRANTS ..... 41
8. SITE ACCESS, INTERNAL CIRCULATION, AND RECOMMENDATIONS ..... 43
8.1 SITE ACCESS AND INTERNAL CIRCULATION ..... 43
8.2 RECOMMENDATIONS ..... 44
9. CONGESTION MANAGEMENT PLAN CONFORMANCE ..... 47
10. REFERENCES ..... 49

\section*{Table of Contents}

\section*{APPENDICES}

Appendix A. Memorandum of Understanding with Riverside County Transportation Department
Appendix B. Traffic Counts
Appendix C Intersection Volumes, Delay, and LOS Calculation Outputs, Existing Conditions
Appendix D. Intersection Volumes, Delay, and LOS Calculation Outputs, Existing Plus Project Conditions

Appendix E. Cumulative Projects Trip Generations
Appendix F. Intersection Volumes, Delay, and LOS Calculation Outputs, Existing Plus Ambient Plus Project Conditions
Appendix G. Intersection Volumes, Delay, and LOS Calculation Outputs, 2018 No Project Conditions
Appendix H. Intersection Volumes, Delay, and LOS Calculation Outputs, 2018 Cumulative Plus Project Conditions

Appendix I. Fair Share Calculations
Appendix J Signal Warrant Calculations

\section*{List of Figures}

Figure
Page
Figure 1 Local Vicinity....................................................................................................................... 7
Figure 2 Aerial Photograph................................................................................................................ 9
Figure 3 Site Plan ............................................................................................................................ 11
Figure 4 County of Riverside Roadway Functional Classifications ..................................................... 17
Figure 5 Study Area Network and Intersections ................................................................................... 19
Figure 6a Existing Intersections and Roadway Lane Configurations ................................................... 21
Figure 6b Existing Intersections and Roadway Lane Configurations .................................................... 23
Figure 7 Project Trip Distribution ..................................................................................................... 29
Figure 8 Cumulative Developments Location Map ........................................................................... 35
Figure 9 Project Site Access Recommendations................................................................................ 45

List of Tables
Table Page
Table 1 Intersection Level of Service Descriptions ............................................................................. 6
Table 2 Existing Peak Hour Intersection Levels of Service............................................................... 25
Table 3 Project Trip Generation..................................................................................................................... 27
Table 4 Intersection Delay and LOS, Existing Plus Project Conditions............................................. 28
Table 5 Intersection Delay and LOS, EAP Conditions ..................................................................... 32
Table 6 Intersection Delay and LOS, 2018 No Project Conditions ................................................... 33
Table 7 Intersection Delay and LOS, 2018 Cumulative Plus Project................................................. 34

\section*{Table of Contents}

This page intentionally left blank.

\section*{1. Executive Summary}

This Traffic Impact Analysis (TIA) has been prepared to analyze the potential traffic impacts from construction and operation of the Temecula Valley Charter School ("proposed project"). Existing traffic conditions are used as the "baseline" for the analysis in this TIA and to evaluate the potential impacts of the proposed project. The overall purpose of this TIA is to inform decision makers and the general public whether the proposed project would result in any significant impacts.

The proposed project would be developed in the Southwest Area Plan in unincorporated Riverside County on two parcels on the west side of Winchester Road (State Route 79) between Keller Road and Pourroy Road. The school is scheduled to open in the fall of 2018 with a capacity of 600 students from grades K to 8 . The project is expected to generate up to 1,488 vehicle trips on a typical weekday, with 540 trips during the AM peak hour and 102 trips during the PM peak hour.

\subsection*{1.1 IMPACTS TO THE CIRCULATION SYSTEM}

Ten intersections have been included in this analysis:
1. Winchester Road at Keller Road
2. Winchester Road at Pourroy Road/Abelia Street
3. Winchester Road at Whisper Heights Parkway/Pourroy Road
4. Winchester Road at Jean Nicholas Road/Skyview Road
5. Winchester Road at Max Gillis Boulevard/Thompson Road
6. Winchester Road at Benton Road
7. Pat Road at Pourroy Road
8. Jean Nicholas Road at Elliot Road
9. Pourroy Road at Skyview Road
10. Pourroy Road at Thompson Road

All study area intersections currently operate at acceptable LOS during the peak hours for existing traffic conditions, except for Winchester Road at Max Gillis Boulevard/Thompson Road in the AM and PM peak hours, and Winchester Road at Benton Road in the PM peak hour.

The traffic conditions were also analyzed for Existing Plus Project, Existing Plus Ambient Growth (2018) Plus Project, Opening Year 2018 Without Project, and Opening Year 2018 With Project. An ambient growth rate of 2 percent per year and cumulative projects to be fully operational by 2018 were added to the background traffic conditions.

Significant impacts are determined by comparing with- and without-project scenarios for each traffic condition. As discussed in Section 2.2, potential traffic impacts would occur if, during the weekday peak hours:

\section*{1. Executive Summary}
- At intersections currently operating at acceptable LOS (A to D), the addition of project trips would change the LOS to an unacceptable LOS E or F .
- At intersections currently operating at unacceptable LOS E or F , the project would increase the delay by more than 5 seconds.

According to these criteria, without mitigation, impacts would occur at the following locations:

\section*{Existing Plus Project Conditions}
5. Winchester Road at Max Gillis Boulevard/Thompson Road (PM peak hour)
6. Winchester Road at Benton Road (PM peak hour)

\section*{2018 Opening Year Conditions}
2. Winchester Road at Pourroy Road/Abelia Street (AM and PM peak hours)
5. Winchester Road at Max Gillis Boulevard/Thompson Road (AM peak hour)
6. Winchester Road at Benton Road (AM peak hour)
7. Pourroy Road at Pat Road (AM and PM peak hour)
9. Pourroy Road at Skyview Road (PM peak hour)

To address intersection operational deficiencies, the following mitigation measures would be necessary:
2. Winchester Road at Pourroy Road/Abelia Street
- Construct a southbound through lane
- Construct a northbound through lane
- Construct a northbound left turn lane
- Construct an eastbound right turn lane
5. Winchester Road at Max Gillis Boulevard/Thompson Road
- Construct an eastbound right turn lane
- Construct an westbound left turn lane
- Construct a northbound left turn lane
- Construct a southbound through lane
6. Winchester Road at Benton Road
- Construct an southbound left turn lane
- Construct an westbound right turn lane

\section*{1. Executive Summary}

\section*{7. Pourroy Road at Pat Road}
- Install a traffic signal
9. Pourroy Road at Skyview Road
- Install a traffic signal

Signal warrants calculations were performed under existing and 2018 scenarios to evaluate the potential need for the installation of a traffic signal at an unsignalized or stop-controlled intersection. The traffic analysis in this study uses Warrant 3 criteria, which are based on traffic volumes entering the intersections during the peak hour. Signal warrants are not met at any intersections that are currently unsignalized.

In Riverside County, transportation improvements are funded through direct project improvements and via contributions to development impact fee programs such as Transportation Uniform Mitigation Fee (TUMF), Development Impact Fees (DIF), and the Road and Bridge Benefit District (RBBD; the project site is in the Southwest RBBD). The County of Riverside normally requires payment of transportation improvement fees to mitigate local traffic impacts. All development projects are required to pay Transportation improvement fees unless they are exempt. Because Temecula Valley Charter School is a governmental entity operated by a non-profit, tax-exempt corporation, it is not subject to the DIF, TUMF, and RBBD fees. Copies of the charter school's Articles of Incorporation and tax exempt designation from the IRS were provided as attachments to previous response to comments memorandum (dated January 4, 2017) submitted to County staff. Based on the materials previously enclosed and preceding response, the charter school is exempt from all such fees.

\section*{Site Access and Internal Circulation}

Site access would be via one driveway at the southeast corner of the site from Koon Street, a proposed new street that would run east-west along the southern site boundary. Koon Street would link to Pourroy Road and form a 4-leg intersection with Flossie Way. The intersection would be approximately 1,200 feet from Winchester Road. The segment of Pourroy Road north of Pat Road is currently unpaved (starting approximately 200 feet south of Fossie Way/Koon Street). The segment of Pourroy Road in the vicinity of the site is mostly flat and clear of visual obstructions for at least 200 feet north and south of Fossie Way/Koon Street.

The proposed internal circulation would consist of a flow-through drop-off loop that would be 30 feet wide and extend around the periphery of the parking lot. The total length of the loop would be approximately 1,400 feet. The parking lot would extend the length of the site boundary along Winchester Road and include 100 parking spaces. The student drop-off and pick-up area would be along the western side of the parking lot, adjacent to the school buildings. It would allow for a loading/unloading lane and at least one passing lane. Preliminary plans show one passing lane and one loading lane.

With approximately 700 feet from the beginning of the loading area to the driveway entrance plus approximately 800 feet of Koon Street, there would be approximately 1,500 feet of driveway length to queue cars during student drop-off and pick-up. Assuming an average length of 25 feet per vehicle, the internal

\section*{1. Executive Summary}
driveways could accommodate up to 60 vehicles before the student loading area. In addition, there would be 100 parking spaces and additional space in the loading area.

It is anticipated that queues would be limited to Koon Street, with some queueing on Pourroy Road as vehicles slow down to turn into Koon Street. The highest turn-movement volumes at the access driveway would occur during the AM peak hour with student drop-off. The typical morning peak drop-off and afternoon pick-up activity lasts about 20 minutes, and any possible queue would dissipate immediately afterward.

\section*{Recommendations}

The following recommendations have been prepared to ensure that adequate site access is provided.
- Construct Koon Street at its ultimate width as an industrial collector road per County of Riverside design standards with a right-of-way of 78 feet between the project's western boundary and the project's access driveway. A sidewalk shall be provided on the northern side of the road along the school property with an adequate connection to allow pedestrian connections to the school buildings without walking on driveways.
- Construct and pave a section of approximately 385 feet in length of Pourroy Road as a 2-lane undivided roadway from Flossie Way to the existing paved section of Pourroy Road. This roadway improvement is expected to be implemented as a part of the proposed development just south of the project site, which is currently in review with County staff. However, it is acknowledged that a condition of approval will be added to the proposed project to require that this section of Pourroy Road is paved prior to the commencement of school operations.
- The intersection of Koon Street with Pourroy Road shall form a 4-leg intersection with Flossie Way.
- Parking and student loading/unloading shall be prohibited on Koon Street to reduce friction and maneuvers on Koon Street, especially during student drop-off and pick-up times.
- Prior to the opening of the project, the school shall work with the County to identify on-site traffic signing and striping to be implemented in conjunction with detailed construction plans for the project. These shall be in conformance with design standards from the California Manual of Uniform Traffic Control Devices for Streets and Highways (CA MUTCD) and Riverside County standards.
- The school and Riverside County should periodically review traffic operations in the vicinity of the project once the project is constructed to ensure that traffic operations are satisfactory. The charter school shall work with the County of Riverside and implement operational mitigation measures such as additional time restrictions, markings, signage, modifications to loading procedures and education for parents and students to improve traffic follow, if necessary.

\section*{2. Introduction}

\subsection*{2.1 PROJECT OVERVIEW}

The proposed project would be in the Southwest Area Plan in unincorporated Riverside County on two parcels on the west side of Winchester Road (State Route 79) between Keller Road and Pourroy Road. Figure 1 shows the local vicinity, and Figure 2 shows the aerial photograph of the project site. The 14.6 -acre project site is surrounded by rural residential uses to the west and north; a single-family home on one of the rural residential properties abuts the west part of the northern site boundary. The project site is surrounded by vacant land to the south and by vacant land and agricultural uses to the east across SR-79. The northwestern part of the site, a hill topped by a vacant single-family residence, would be left as is. The school is scheduled to open in the fall of 2018 with a capacity of 600 students from grades K to 8 . Figure 3 shows the project site plan. The proposed project would construct several one-story school buildings totaling about 55,000 square feet of building area. Facilities would include 31 classrooms, a multipurpose room, administrative space, and a library/media center. The school campus would also have four volleyball courts, a softball field, and a soccer field.

\subsection*{2.2 METHODOLOGY}

The Riverside County Traffic Impact Analysis Preparation Guide sets forth guidelines for analyzing traffic impacts from projects on the roadway network and thresholds of significance. The methodology used for the preparation of this traffic impact study is consistent with these guidelines, as determined in consultation with the Riverside County Transportation Department. The scoping agreement with County staff comments is in Appendix A.

\section*{Definition of Level of Service}

Roadway capacity is generally limited by the ability to move vehicles through intersections. A level of service (LOS) is a standard performance measurement to describe the operating characteristics of a street system in terms of the level of congestion or delay experienced by motorists. Service levels range from A through F, which relate to traffic conditions from best (uncongested, free-flowing conditions) to worst (total breakdown with stop-and-go operation).

\section*{Intersection LOS}

The methodology used to assess the operation of a signalized intersection is based on the Highway Capacity Manual (HCM). The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions. The peak hours selected for analysis are the highest volumes that occur in four consecutive 15minute periods from 7 to 9 AM and from 4 to 6 PM on weekdays. The HCM 2010 signalized intersection methodology presents LOS in terms of control delay (in seconds per vehicle). Per the HCM methodology, overall average intersection delay at signalized intersections was calculated, and the worst-case approach delay

\section*{3. Existing Conditions}
was calculated at unsignalized intersections. The level of service corresponds to the delay calculated. Table 1, Intersection Level of Service Descriptions, describes the level of service concept and the operating conditions expected under each level of service for signalized and unsignalized intersections.

Table 1 Intersection Level of Service Descriptions
\begin{tabular}{c|l|c|c}
\hline \multirow{2}{*}{ LOS } & & \multicolumn{1}{c}{ Description } & \multicolumn{2}{c}{ Average Delay Per Vehicle (seconds) } \\
\cline { 3 - 4 } A & \begin{tabular}{l} 
Level of Service A occurs when progression is extremely favorable \\
and most vehicles arrive during the green phase. Most vehicles do \\
not stop at all. Short cycle lengths may also contribute to low delay.
\end{tabular} & 0 to 10.00 & 0 to 10.00 \\
\hline B & \begin{tabular}{l} 
Level of Service B generally occurs with good progression and/or \\
short cycle lengths. More vehicles stop than for Level of Service A, \\
causing higher levels of average total delay.
\end{tabular} & 10.01 to 20.00 & 10.01 to 15.00 \\
\hline C & \begin{tabular}{l} 
Level of Service C generally results when there is fair progression \\
and/or longer cycle lengths. Individual cycle failures may begin to \\
appear in this level. The number of vehicles stopping is significant at \\
this level, although many still pass through the intersection without \\
stopping.
\end{tabular} & 20.01 to 35.00 & 15.01 to 25.00 \\
\hline D & \begin{tabular}{l} 
Level of Service D generally results in noticeable congestion. Longer \\
delays may result from some combination of unfavorable \\
progression, long cycle lengths, or high volume to capacity ratios. \\
Many vehicles stop, and the proportion of vehicles not stopping \\
declines. Individual cycle failures are noticeable.
\end{tabular} & 35.01 to 55.00 & 25.01 to 35.00 \\
\hline E & \begin{tabular}{l} 
Level of Service E is considered to be the limit of acceptable delay. \\
These high delay values generally indicate poor progression, long \\
cycle lengths, and high volume to capacity ratios. Individual cycle \\
failures are frequent occurrences.
\end{tabular} & 55.01 to 80.00 & 35.01 to 50.00 \\
\hline
\end{tabular}

Source: Highway Capacity Manual, Transportation Research Board, 2000.

The software PTV Vistro 4 was used to determine the LOS at the study area intersections.

Figure 1 - Local Vicinity


\section*{3. Existing Conditions}

This page intentionally left blank.

Figure 2 - Aerial Photograph


\section*{3. Existing Conditions}

This page intentionally left blank.

Figure 3 - Site Plan


\section*{3. Existing Conditions}

This page intentionally left blank.

\section*{3. Existing Conditions}

\section*{Acceptable LOS and Thresholds of Significance}

The project site is in the Southwest Area Plan. Policy C 2.1 of the County of Riverside General Plan Circulation Element (December 8, 2015) has established LOS "D" as the minimum level of service for its intersections in certain community development areas including the Southwest Area. Based on Route Concept Report Fact Sheet for SR-79, in accordance with Riverside County's Congestion Management Plan (CMP), LOS " \(E\) " is considered the limit of acceptable traffic operations along SR-79 through the year 2020 (Caltrans 1999; RCTC 2011).

Potential traffic impacts would occur if, during the weekday peak hours:
- At intersections currently operating at acceptable LOS, the addition of project trips would change the LOS to an unacceptable LOS.
- At intersections currently operating at unacceptable LOS, the project would increase the delay by more than 5 seconds.

Notwithstanding the forgoing minimum LOS targets, the Board of Supervisors may, on occasion by virtue of their discretionary powers, approve a project that fails to meet these LOS targets in order to balance congestion management considerations in relation to benefits, environmental impacts and costs, provided an Environmental Impact Report, or equivalent, has been completed to fully evaluate the impacts of such approval. Any such approval must incorporate all feasible mitigation measures, make specific findings to support the decision, and adopt a statement of overriding considerations.

According to Exhibit A of the Riverside County Transportation Department Traffic Impact Analysis Preparation Guide, preschools, elementary schools, and middle schools are "generally exempt from Traffic Analysis requirements per Board of Supervisor's action November 5, 1996 (item No. 3.27)" (Riverside County 2008). However, the County reserves the right to require a traffic impact analysis for any development regardless of size or type depending on conditions, such as the need for a focused study for access/operational issues or the presence of a nearby substandard intersection or street.

\section*{3. Existing Conditions}

This page intentionally left blank.

\section*{3. Existing Conditions}

\subsection*{3.1 STUDY AREA ROADWAY NETWORK}

\section*{General Plan Circulation Network}

The study-area roadways discussed below are in the general plan circulation elements for the County of Riverside and the City of Murrieta. Figure 4 shows the County of Riverside circulation map and its roadway functional classifications. Figure 5 shows the circulation network in the study area and the intersection analyses locations.

\section*{Surrounding Street System}

The study area was determined based on the anticipated attendance area, a review of the circulation network, the number of trips generated by the project, and consultation with County transportation staff. The study network includes Winchester Road (State Route 79), Keller Road, Pourroy Road/Abelia Street, Whisper Heights Parkway/Pourroy Road, Jean Nicholas Road/Skyview Road, Max Gillis Road/Thompson Road, Benton Road, Pat Road, and Elliot Road.
- Winchester Road (State Route 79): This north-south roadway currently is four lanes in the study area and is classified as an Expressway. The posted speed limit varies from 55 to 65 miles per hour in the study area.
- Keller Road: This east-west roadway is currently unpaved in the study area and is classified as a Secondary Roadway.
- Pourroy Road/Abelia Street: This roadway is Pourroy Road to the west of SR-79 and Abelia Street to the east of SR-79. This roadway is classified as a Secondary Roadway and is currently two lanes for Pourroy Road and four lanes for Abelia Street. The posted speed limit on Abelia Street is 45 mph .
- Whisper Heights Parkway/Pourroy Road: This roadway is Whisper Heights Parkway to the west of SR-79 and Pourroy Road to the east of SR-79. Pourroy Road is classified as a Secondary Roadway. Whisper Heights Parkway is currently two lanes and Pourroy Road is currently four lanes in the study area. The posted speed limit on Whisper Heights Parkway is 25 mph .
- Jean Nicholas Road/Skyview Road: This roadway is Jean Nicholas Road to the west of SR-79 and Skyview Road to the east of SR-79. It is classified as a Secondary Roadway. Jean Nicholas Road currently has two eastbound lanes and one westbound lane while Skyview Road currently has four lanes.
- Max Gillis Boulevard/Thompson Road: This Roadway is Max Gillis Boulevard to the west of SR-79 and Thompson Road to the east of SR-79. Max Gillis Boulevard and Thompson Road currently have four lanes. Max Gillis Boulevard is classified as a Major Roadway and Thompson Road is classified as a Secondary Roadway. Max Gillis Boulevard and Thompson Road have a posted speed limit of 45 mph .

\section*{3. Existing Conditions}
- Benton Road: This east-west roadway currently is two lanes in the project area and is classified as an Urban Arterial Roadway.
- Pat Road: This roadway is a two-lane local street.
- Elliot Road: This north-south roadway is a two-lane local street.

\section*{Study Area Intersections}

The study area was defined according to the Riverside County Traffic Impact Analysis Preparation Guide. The guidelines require that intersections at streets with a minimum classification of collector or higher be studied where the project adds 50 or more peak hour trips. Based on the calculated project trip generation and distribution, the following intersections were analyzed:
1. Winchester Road at Keller Road
2. Winchester Road at Pourroy Road/Abelia Street
3. Winchester Road at Whisper Heights Parkway/Pourroy Road
4. Winchester Road at Jean Nicholas Road/Skyview Road
5. Winchester Road at Max Gillis Boulevard/Thompson Road
6. Winchester Road at Benton Road
7. Pat Road at Pourroy Road
8. Jean Nicholas Road at Elliot Road
9. Pourroy Road at Skyview Road
10. Pourroy Road at Thompson Road

Intersections 1, 2, 3, 4, 5, and 6 are under the jurisdiction of Caltrans, and intersections 7, 8, 9, and 10 are under the jurisdiction of the County of Riverside.

\section*{Existing Travel Lanes and Intersection Controls}

Figure 6 identifies the number of through lanes for existing roadways and the existing intersection controls and lane geometries.

Figure 4 - County of Riverside Functional Classifications


\section*{3. Existing Conditions}

This page intentionally left blank.

Figure 5 - Study Area Network and Intersections


Project Site
(1) Intersection Location Number

\section*{3. Existing Conditions}

This page intentionally left blank.

Figure 6a - Existing Intersections and Roadway Lane Configurations (1-8)


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot

(1) Intersection Location Number


\section*{3. Existing Conditions}

This page intentionally left blank.

Figure 6b - Existing Intersections and Roadway Lane Configurations (9-10)


Pourroy Road at Skyview Ro Pourroy Road at Thompson


\section*{3. Existing Conditions}

This page intentionally left blank.

\subsection*{3.2 EXISTING INTERSECTIONS OPERATIONS}

\section*{Existing Traffic Volumes}

Weekday AM and PM peak hour turn movement volumes were collected at the study-area intersections on Wednesday, September 14, 2016. The existing AM and PM peak hour count worksheets and figures showing turn-movement volumes are provided in Appendix B.

\section*{Existing Conditions Intersection Operations Analysis}

The intersection operations analysis results are summarized in Table 2, Existing Peak. Hour Intersection Levels of Service. All study area intersections currently operate at acceptable LOS during the peak hours for Existing traffic conditions, except for Winchester Road at Max Gillis Boulevard/Thompson Road in the AM and PM peak hours and Winchester Road at Benton Road in the PM peak hour. LOS worksheets for existing conditions are provided in Appendix C.

Table 2 Existing Peak Hour Intersection Levels of Service
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline & & & AM Pea & & PM Pe & \\
\hline Intersection & Traffic Control & Jurisdiction & Average Delay (sec/veh) & LOS & Average Delay (sec/veh) & LOS \\
\hline 1. Winchester Road at Keller Road & Signalized & Caltrans & 2.8 & A & 5.5 & A \\
\hline 2. Winchester Road at Pourroy Road/Abelia Street & Signalized & Caltrans & 17.2 & B & 12.5 & B \\
\hline 3. Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & Caltrans & 15.2 & B & 15.6 & B \\
\hline 4. Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & Caltrans & 15.7 & B & 13.0 & B \\
\hline 5. Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & Caltrans & 180.4 & F & 144.6 & F \\
\hline 6. Winchester Road at Benton Road & Signalized & Caltrans & 21.0 & C & 86.8 & F \\
\hline 7. Pourroy Road at Pat Road & Unsignalized & Riverside & 10.7 & B & 9.5 & A \\
\hline 8. Elliot Road at Jean Nicholas Road & Unsignalized & Riverside & 19.0 & C & 13.2 & B \\
\hline 9. Pourroy Road at Skyview Road & Unsignalized & Riverside & 11.2 & B & 10.0 & A \\
\hline 10. Pourroy Road at Thompson Road & Unsignalized & Riverside & 13.9 & B & 16.1 & C \\
\hline \multicolumn{2}{|l|}{Notes: LOS calculation worksheets included in Appendix C. Intersections with unacceptable LOS are shown in bold.} & & & & & \\
\hline
\end{tabular}

\subsection*{3.3 TRANSIT SERVICE AND NON-MOTORIZED CIRCULATION}

Riverside Transit Agency (RTA) provides regular transit bus service via Route 79 in the vicinity of the study area. Route 79 extends north-south between Temecula and Hemet at a frequency of about one hour 15 minutes (RTA 2016). The nearest bus stops are on Winchester Road just north of the intersection with Whisper Heights Parkway/Pourroy Road and on Pourroy Road just east of the intersection with Winchester Road. There are no paved sidewalks on Keller Road or the section of Winchester Road along the project site frontage.

\section*{3. Existing Conditions}

This page intentionally left blank.

\section*{4. Project Traffic}

\subsection*{4.1 TRIP GENERATION}

The project would have a capacity of 600 students from grades K to 8 . The trip generation was calculated based on rates in the Institute of Transportation Engineers' (ITE) manual, Trip Generation (9th edition), for Land Use 534, Private School (K-8) and supplemented by rates from Land Use 536, Private School (K-12). Table 3, Project Trip Generation, shows the trip generation rates and project trip generation for the daily, AM peak hour, and PM peak hour. The project is expected to generate up to1,488 daily trips; 540 trips (297 inbound and 243 outbound) during the AM peak hour; and 102 trips ( 44 inbound and 58 outbound) during the PM peak hour.

The general approach for conducting traffic impact analyses is to evaluate weekday peak hour traffic during the commute peak traffic conditions, which generally occur from 7 to 9 AM and 4 to 6 PM . The performance of the project access during school drop-off and pick-up times is evaluated in detail in Section 8 of this report. Temecula Valley Charter School is proposing to relocate an existing charter school campus from 35755 Abelia Street in French Valley (about 1.4 miles southeast of the proposed project site) to the proposed campus. The existing campus had 516 students in the 2015-16 school year (CDE 2016). Because the charter school would relocate to the proposed school site, trips generated by about 85 percent of the proposed 600student capacity would be already-existing trips on roadways in and near French Valley and would not be new trips added to area roadways. Therefore, this analysis overestimates project trip generation.

Table 3 Project Trip Generation
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[b]{3}{*}{Land Use} & \multirow[b]{3}{*}{Unit} & \multicolumn{7}{|c|}{Trip Generation} \\
\hline & & \multirow[b]{2}{*}{Daily \({ }^{2}\)} & \multicolumn{3}{|c|}{AM Peak Hour \({ }^{1}\)} & \multicolumn{3}{|c|}{PM Peak Hour \({ }^{2}\)} \\
\hline & & & In & Out & Total & In & Out & Total \\
\hline Private School (K-8) & Students & 2.48 & 0.50 & 0.41 & 0.90 & 0.07 & 0.10 & 0.17 \\
\hline Project Trip Generation & 600 & 1,488 & 297 & 243 & 540 & 44 & 58 & 102 \\
\hline
\end{tabular}

1 Used the trip generation rates of ITE Code 534 Private School (K-8) from the ITE Trip Generation Manual gth Edition.
2 Used the trip generation rates of ITE Code 536 Private School (K-12) from the ITE Trip Generation Manual 9th Edition.

\subsection*{4.2 TRIP DISTRIBUTION}

The traffic that would be generated by the school was geographically distributed onto the street network by evaluating the layout of the study area roadway network and a review of land uses designated as residential in the area. Figure 7, Project Trip Distribution, presents the anticipated trip distribution for the school.

\section*{4. Project Traffic}

\subsection*{4.3 MODAL SPLIT AND TRIP ASSIGNMENT}

The trip distribution percentages are applied to the project trip generation to determine the traffic volumes forecast to be added at each intersection (i.e., trip assignment).

\subsection*{4.4 EXISTING PLUS PROJECT TRAFFIC CONDITIONS}

To assess Existing Plus Project traffic conditions, existing traffic is combined with project traffic. The calculated intersection operations for Existing Plus Project traffic conditions are shown in Table 4, Intersection Delay and LOS, Existing Plus Project Conditions. Figures that show the Existing Plus Project AM and PM peak hour intersection volumes are provided in Appendix D.

Table 4 Intersection Delay and LOS, Existing Plus Project Conditions
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Intersection} & \multirow[b]{2}{*}{Traffic Control} & \multirow[b]{2}{*}{Jurisdiction} & \multicolumn{2}{|c|}{AM Peak Hour} & \multicolumn{2}{|c|}{PM Peak Hour} \\
\hline & & & Average Delay (sec/veh) & LOS & Average Delay (sec/veh) & LOS \\
\hline 1. Winchester Road at Keller Road & Signalized & Caltrans & 4.2 & A & 7.4 & A \\
\hline 2. Winchester Road at Pourroy Road/Abelia Street & Signalized & Caltrans & 33.3 & C & 14.7 & B \\
\hline 3. Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & Caltrans & 18.0 & B & 16.9 & B \\
\hline 4. Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & Caltrans & 16.1 & B & 14.4 & B \\
\hline 5. Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & Caltrans & 180.4 & F & 165.2 & F \\
\hline 6. Winchester Road at Benton Road & Signalized & Caltrans & 24.6 & C & 87.0 & F \\
\hline 7. Pourroy Road at Pat Road & Unsignalized & Riverside & 23.8 & C & 10.3 & B \\
\hline 8. Elliot Road at Jean Nicholas Road & Unsignalized & Riverside & 22.4 & C & 14.5 & B \\
\hline 9. Pourroy Road at Skyview Road & Unsignalized & Riverside & 12.7 & B & 11.2 & B \\
\hline 10. Pourroy Road at Thompson Road & Unsignalized & Riverside & 15.5 & C & 17.3 & C \\
\hline
\end{tabular}

Notes: LOS calculation worksheets included in Appendix D.
Intersections with unacceptable LOS are shown in bold.

Under Existing Plus Project conditions, the intersections of Winchester Road at Max Gillis Boulevard/Thompson Road would operate at LOS F in the AM and PM peak hour, and Winchester Road at Benton Road would operate at LOS F in the PM peak hour. The remaining study intersections would operate at acceptable LOS. It shall be noted that at some intersections such as Winchester Road at Pourroy Road/Abelia Street, and Pourroy Road at Pat Road, the project would cause increases in delay, but would not result in unacceptable operations and would not result in a significant impact as defined in Section 2.2.

Figure 7 - Project Trip Distribution


\section*{4. Project Traffic}

This page intentionally left blank.

\section*{5. Future Traffic Conditions}

Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways in addition to traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. The ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Traffic forecasts for 2018 conditions are based on two years of ambient growth at 2 percent per year. The total ambient growth is the compounded growth of 2 percent per year over two years, which results in a total growth of 4 percent.

Cumulative projects are closely related past, present, and reasonably foreseeable probable future projects. A total of 18 projects in the County of Riverside and City of Murrieta were screened. Based on a review of their circulation systems, trip generations, locations, and land use types, the four cumulative projects shown on Figure 8, Cumulative Developments Location Map, would have the potential for directly adding measurable traffic to the area street system. The cumulative development projects assumed in this traffic analysis are estimated to generate 40,633 trip-ends per day during a typical weekday, with approximately 1,488 vehicle trips during the AM peak hour and 3,357 vehicle trips during the PM peak hour. Appendix E includes the trip generation calculations for the cumulative projects and intersection turn movement volumes related to the development of cumulative projects.

The following describes the future scenarios evaluated and identifies the intersections that are forecast to operate at unacceptable LOS for each scenario.

\subsection*{5.1 EXISTING PLUS AMBIENT PLUS PROJECT TRAFFIC CONDITIONS}

At the request of the County of Riverside, a scenario for existing + ambient growth + project (EAP) was evaluated, corresponding to a scenario for project opening year 2018 with the project but without the development of cumulative projects. The intersection operations for the EAP traffic conditions have been calculated and are given in Table 5, Intersection Delay and LOS, EAP Conditions. AM and PM peak hour intersection volumes and LOS worksheets are provided in Appendix F.

\section*{5. Future Traffic Conditions}

Table 5 Intersection Delay and LOS, EAP Conditions
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Intersection} & \multirow[b]{2}{*}{Traffic Control} & \multirow[b]{2}{*}{Jurisdiction} & \multicolumn{2}{|l|}{AM Peak Hour} & \multicolumn{2}{|l|}{PM Peak Hour} \\
\hline & & & \[
\begin{gathered}
\hline \text { Average } \\
\text { Delay } \\
\text { (sec/veh) }
\end{gathered}
\] & LOS & Average Delay (sec/veh) & LOS \\
\hline 1. Winchester Road at Keller Road & Signalized & Caltrans & 4.3 & A & 8.9 & A \\
\hline 2. Winchester Road at Pourroy Road/Abelia Street & Signalized & Caltrans & 38.0 & D & 15.2 & B \\
\hline 3. Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & Caltrans & 18.7 & B & 17.8 & B \\
\hline 4. Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & Caltrans & 17.2 & B & 14.9 & B \\
\hline 5. Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & Caltrans & 196.6 & F & 184.7 & F \\
\hline 6. Winchester Road at Benton Road & Signalized & Caltrans & 27.6 & C & 98.3 & F \\
\hline 7. Pourroy Road at Pat Road & Unsignalized & Riverside & 24.3 & C & 10.3 & B \\
\hline 8. Elliot Road at Jean Nicholas Road & Unsignalized & Riverside & 24.0 & C & 14.9 & B \\
\hline 9. Pourroy Road at Skyview Road & Unsignalized & Riverside & 13.1 & B & 11.4 & B \\
\hline 10. Pourroy Road at Thompson Road & Unsignalized & Riverside & 16.5 & C & 18.8 & C \\
\hline
\end{tabular}

Notes: LOS calculation worksheets included in Appendix F.
Intersections with unacceptable LOS are shown in bold.

Under EAP conditions, Winchester Road at Max Gillis Boulevard/Thompson Road would operate at unacceptable LOS F in the AM and PM peak hour, and Winchester Road at Benton Road would operate at unacceptable LOS F in the PM peak hour. The remaining study intersections would operate at acceptable LOS.

\subsection*{5.2 2018 WITHOUT PROJECT TRAFFIC CONDITIONS}

To assess 2018 No Project traffic conditions, existing traffic is combined with the anticipated ambient growth and cumulative projects (existing + ambient growth + cumulative projects). The calculated intersection operations for the 2018 No Project traffic conditions are in Table 6, Intersection Delay and LOS, 2018 No Project Conditions. AM and PM peak hour intersection volumes and LOS worksheets are provided in Appendix G.

Table 6 Intersection Delay and LOS, 2018 No Project Conditions
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline & \multirow[b]{2}{*}{Traffic Control} & \multirow[b]{2}{*}{Jurisdiction} & \multicolumn{2}{|l|}{AM Peak Hour} & \multicolumn{2}{|l|}{PM Peak Hour} \\
\hline Intersection & & & Average Delay (sec/veh) & LOS & Average Delay (sec/veh) & LOS \\
\hline 1. Winchester Road at Keller Road & Signalized & Caltrans & 20.5 & C & 219.2 & F \\
\hline 2. Winchester Road at Pourroy Road/Abelia Street & Signalized & Caltrans & 71.5 & E & 208.1 & F \\
\hline 3. Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & Caltrans & 32.3 & C & 152.0 & F \\
\hline 4. Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & Caltrans & 19.6 & B & 39.6 & D \\
\hline 5. Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & Caltrans & 214.6 & F & 258.7 & F \\
\hline 6. Winchester Road at Benton Road & Signalized & Caltrans & 40.5 & D & 175.4 & F \\
\hline 7. Pourroy Road at Pat Road & Unsignalized & Riverside & 27.7 & D & 61.5 & F \\
\hline 8. Elliot Road at Jean Nicholas Road & Unsignalized & Riverside & 25.4 & D & 24.4 & C \\
\hline 9. Pourroy Road at Skyview Road & Unsignalized & Riverside & 17.0 & C & 63.3 & F \\
\hline 10. Pourroy Road at Thompson Road & Unsignalized & Riverside & 22.9 & C & 81.5 & F \\
\hline \multicolumn{7}{|l|}{Notes: LOS calculation worksheets included in Appendix G. Intersections with unacceptable LOS are shown in bold.} \\
\hline
\end{tabular}

Under 2018 No Project conditions, the following intersections would operate at unacceptable LOS:
- Winchester Road at Keller Road (PM peak hour)
- Winchester Road at Pourroy Road/ Abelia Street (PM peak hour)
- Winchester Road at Whisper Heights Parkway/Pourroy Road (PM peak hour)
- Winchester Road at Max Gillis Boulevard/Thompson Road (AM and PM peak hours)
- Winchester Road at Benton Road (PM peak hour)
- Pourroy Road at Pat Road (PM peak hour)
- Pourroy Road at Skyview Road (PM peak hour)
- Pourroy Road at Thompson Road (PM peak hour)

\subsection*{5.32018 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS}

To assess future cumulative traffic conditions, traffic generated by cumulative projects is added to the 2018 EAP conditions discussed above. The calculated intersection operations for the 2018 Cumulative Plus Project traffic conditions are listed in Table 7, Intersection Delay and LOS, 2018 Cumulative Plus Project. The 2018 with project AM and PM peak hour intersection volumes and LOS worksheets are provided in Appendix H.

\section*{5. Future Traffic Conditions}

Table 7 Intersection Delay and LOS, 2018 Cumulative Plus Project
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Intersection} & \multirow[b]{2}{*}{Traffic Control} & \multirow[b]{2}{*}{Jurisdiction} & \multicolumn{2}{|l|}{AM Peak Hour} & \multicolumn{2}{|l|}{PM Peak Hour} \\
\hline & & & \[
\begin{gathered}
\text { Average } \\
\text { Delay } \\
\text { (sec/veh) }
\end{gathered}
\] & LOS & \[
\begin{gathered}
\text { Average Delay } \\
\text { (sec/veh) }
\end{gathered}
\] & LOS \\
\hline 1. Winchester Road at Keller Road & Signalized & Caltrans & 15.9 & B & 221.5 & F \\
\hline 2. Winchester Road at Pourroy Road/Abelia Street & Signalized & Caltrans & 132.5 & F & 236.2 & F \\
\hline 3. Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & Caltrans & 49.5 & D & 143.1 & F \\
\hline 4. Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & Caltrans & 21.0 & C & 43.0 & D \\
\hline 5. Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & Caltrans & 218.7 & F & 261.2 & F \\
\hline 6. Winchester Road at Benton Road & Signalized & Caltrans & 47.3 & D & 176.8 & F \\
\hline 7. Pourroy Road at Pat Road & Unsignalized & Riverside & 357.4 & F & 86.7 & F \\
\hline 8. Elliot Road at Jean Nicholas Road & Unsignalized & Riverside & 31.9 & D & 25.4 & D \\
\hline 9. Pourroy Road at Skyview Road & Unsignalized & Riverside & 21.6 & C & 68.5 & F \\
\hline 10. Pourroy Road at Thompson Road & Unsignalized & Riverside & 28.9 & D & 85.1 & F \\
\hline
\end{tabular}

Notes: LOS calculation worksheets included in Appendix H.
Intersections with unacceptable LOS are shown in bold.

Under 2018 Cumulative Plus Project conditions, the following intersections would operate at unacceptable LOS:
- Winchester Road at Keller Road (PM peak hour)
- Winchester Road at Pourroy Road/Abelia Street (AM and PM peak hours)
- Winchester Road at Whisper Heights Parkway/Pourroy Road (PM peak hour)
- Winchester Road at Max Gillis Boulevard/Thompson Road (AM and PM peak hours)
- Winchester Road at Benton Road (PM peak hour)
- Pourroy Road at Pat Road (AM and PM peak hour)
- Pourroy Road at Skyview Road (PM peak hour)
- Pourroy Road at Thompson Road (PM peak hour)

Figure 8 - Cumulative Developments Location Map


\section*{5. Future Traffic Conditions}

This page intentionally left blank.

\section*{6. Impacts}

Significant impacts are determined by comparing with- and without-project scenarios for each traffic condition. As discussed in Section 2.2, potential traffic impacts would occur if, during the weekday peak hours:
- At intersections currently operating at acceptable LOS (A to D), the addition of project trips would change the LOS to an unacceptable LOS E or F.
- At intersections currently operating at unacceptable LOS E or F , the project would increase the delay by more than 5 seconds.

According to these criteria, without roadway improvements, impacts would occur at the following locations:

\subsection*{6.1 EXISTING PLUS PROJECT CONDITIONS}
5. Winchester Road at Max Gillis Boulevard/Thompson Road (PM peak hour)
6. Winchester Road at Benton Road (PM peak hour)

\subsection*{6.22018 CUMULATIVE PLUS PROJECT CONDITIONS}
2. Winchester Road at Pourroy Road/Abelia Street (AM and PM peak hours)
5. Winchester Road at Max Gillis Boulevard/Thompson Road (AM peak hour)
6. Winchester Road at Benton Road (AM peak hour)
7. Pourroy Road at Pat Road (AM and PM peak hour)
9. Pourroy Road at Skyview Road (PM peak hour)

To address intersection operational deficiencies the following roadway improvements would be necessary:
2. Winchester Road at Pourroy Road/Abelia Street
- Construct a southbound through lane
- Construct a northbound through lane
- Construct a northbound left turn lane
- Construct an eastbound right turn lane

\section*{6. Impacts}
5. Winchester Road at Max Gillis Boulevard/Thompson Road
- Construct an eastbound right turn lane
- Construct a westbound left turn lane
- Construct a northbound left turn lane
- Construct a southbound through lane
6. Winchester Road at Benton Road
- Construct a southbound left turn lane
- Construct a westbound right turn lane
7. Pourroy Road at Pat Road
- Install a traffic signal
9. Pourroy Road at Skyview Road
- Install a traffic signal

None of the intersections above were identified in the Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF) program, the Riverside County Development Impact Fee (DIF) program, or the Road and Bridge Benefit Districts (RBBD). The TUMF, DIF, and RBBD programs are discussed below.

\subsection*{6.2.1 Applicable Funding Mechanisms}

In Riverside County, transportation improvements are funded through direct project improvements and via contributions to development impact fee programs such as TUMF, DIF and the RBBD.

\section*{TUMF}

The Board of Supervisors of the County of Riverside and the Western Riverside Council of Governments (WRCOG) enacted TUMF to fund the mitigation of cumulative regional transportation impacts resulting from future development. TUMF fees fund capital improvement projects necessary to meet the increased travel demand to the transportation system. The fee calculations are based on the proportional allocation of the costs of proposed transportation improvements based on the cumulative transportation system impacts of different types of new development. Fees are directly related to the forecast rate of growth and trip generation from new development. TUMF fees are generally imposed on new residential, industrial, and commercial development. For certain residential and non-residential land-use types, new development is exempt from the TUMF. The TUMF program exempts public schools from TUMF fees.

According to Exhibit F, "TUMF Program Exemptions" of the TUMF administrative plan (WRCOG 2016), any nonprofit corporation or nonprofit organization offering and conducting full-time day school at the elementary, middle school, or high school level for students between the ages of five and eighteen years is exempt from TUMF fees. "Non-profit Organization" means an organization operated exclusively for exempt purposes per section 501 (c)(3) of the Internal Revenue Code, and none of its earnings may inure to any private shareholder or individual. In addition, it may not be an action organization-i.e., it may not attempt to
influence legislation as a substantial port of its activities and it may not participate in any campaign activity for or against political candidates.

\section*{DIF}

The Development Impact Fee program covers all portions of unincorporated Riverside County. It provides funds for a variety of public facilities that are both transportation and non-transportation related, including various roads, bridges and traffic signals. The Development Impact Fee program established separate rates for each Area Plan described in the Riverside County General Plan. The Development Impact Fee program is administered by the Riverside County Executive Office and was adopted through Ordinance No. 659. Transportation fees are set in two different components: (1) roads, bridges and major improvements, and (2) signals.

Four categories of fees are defined: single family residential, multi-family residential, commercial, and industrial. The DIF does not include fees for schools.

\section*{RBBD}

The Road and Bridge Benefit Districts were established through Ordinance 460 to defray the cost of road and bridge improvements. There are currently four Road and Bridge Benefit Districts in Riverside County administered by the Transportation Department: Southwest, Mira Loma, Menifee Valley, and Scott Road. The project site is in the Southwest area. The Southwest Road and Bridge Benefit District was formed to fund specific, regional road and bridge improvements determined to provide a benefit to the developing properties in portions of the southwest areas of Riverside County. Four categories of fees are defined: residential, commercial, office commercial, and industrial. The RBBD does not include fees for schools.

\section*{Project Traffic Impacts}

The following summarizes the contribution of the project to the new trips at intersections where impacts would occur. The contributions are shown for the AM peak hour because it is the period that generates the highest number of trips for schools The proposed campus would replace an existing campus about 1.4 miles southeast of the project site. However it is common practice not to take credit for existing uses being relocated because it not known at this point if the existing school site will be redeveloped. For the purpose of this analysis it was conservatively assumed that all project trips would be "new". Therefore, a percentage of the trips generated by the proposed campus in reality would be trips relocated from the existing campus and not new trips on the area roadway network. The project percentage trips shown below therefore are likely overstated.
- Winchester Road at Pourroy Road/Abelia Street: 27 percent
- Winchester Road at Max Gillis Boulevard/Thompson Road: 23 percent
- Winchester Road at Benton Road: 22 percent
- Pourroy Road at Pat Road: 43 percent
- Pourroy Road at Skyview Road: 29 percent

The fair share calculations are included in Appendix I.

\section*{6. Impacts}

The County of Riverside normally requires payment of transportation improvement fees to mitigate local traffic impacts. However, according to Exhibit A of the Riverside County Transportation Department Traffic Impact Analysis Preparation Guide, preschools, elementary schools, and middle schools are "generally exempt from Traffic Analysis requirements per Board of Supervisor's action November 5, 1996 (item No. 3.27)" (Riverside County 2008). The County reserves the right to require a traffic impact analysis for any development regardless of size or type depending on conditions such as the need for a focused study for access/operational issues or the presence of a nearby substandard intersection or street. In addition, the TUMF program recognizes that schools accommodate residential growth and don't generate trips in the absence of such growth, and therefore exempts schools from TUMF fees. Impacts would be less than significant and no mitigation is required.

Because Temecula Valley Charter School is a governmental entity operated by a non-profit, tax-exempt corporation, it is not subject to the DIF, TUMF, and RBBD fees. Copies of the charter school's Articles of Incorporation and tax exempt designation from the IRS were provided as attachments to previous response to comments memorandum (dated January 4, 2017) submitted to County staff. Based on the materials previously enclosed and preceding response, the charter school is exempt from all such fees.

\section*{7. Signal Warrants}

Signal warrants are a set of criteria used to evaluate the potential need for a traffic signal under existing and 2018 scenarios at an unsignalized or stop-controlled intersection. The methodology for the signal warrant analysis is included in the 2014 California Manual on Uniform Traffic Control Devices. The manual states that if one or more of the criteria for signal warrants is met, an engineering study is required to evaluate other factors to determine if an intersection must be signalized. The traffic analysis in this study uses Warrant 3 criteria, which are based on traffic volumes entering the intersection during the peak hour. The signal warrant calculations are included in Appendix J. Signal warrants would not be met at any intersection that are currently unsignalized.

\section*{7. Signal Warrants}

This page intentionally left blank.

\section*{8. Site Access, Internal Circulation, and Recommendations}

The following discusses project site access features, including drop-off/pick-up, queues, and recommendations to provide adequate site access.

\subsection*{8.1 SITE ACCESS AND INTERNAL CIRCULATION}

Site access would be via two driveways at the southeast corner of the site from Koon Street (at the terminus of the cul-de-sac), a proposed new street that would run east-west along the southern site boundary. Koon Street would link to Pourroy Road and form a four-leg intersection with Flossie Way. The intersection would be approximately 1,200 feet from Winchester Road. The segment of Pourroy Road north of Pat Road is currently unpaved (starting approximately 200 feet south of Fossie Way/Koon Street). The segment of Pourroy Road in the vicinity of the site is mostly flat and clear of visual obstructions for at least 200 feet north and south of Fossie Way/Koon Street. A concrete driveway would be constructed east of Koon Street to provide vehicular and pedestrian access to the two single-family homes north of the school site. The driveway apron would be approximately 20 north of the school boundary.

The proposed internal circulation would consist of a flow-through drop-off loop that would be 30 feet wide and extend around the periphery of the parking lot. The total length of the loop would be approximately 1,400 feet. The parking lot would include 100 parking spaces, extending the length of the site boundary along Winchester Road. The student drop-off and pick-up area would be along the western side of the parking lot adjacent to the school buildings. It would allow for a loading/unloading lane and at least one passing lane. Preliminary plans show one passing lane and one loading lane.

With approximately 700 feet from the beginning of the loading area to the driveway entrance plus approximately 800 feet of Koon Street, there would be approximately 1,500 feet of driveway length to queue cars during student drop-off and pick-up. Assuming an average length of 25 feet per vehicle, the internal driveways could accommodate up to 60 vehicles before the student loading area. In addition, there would be 100 parking spaces and additional space in the loading area. It is anticipated that queues would be limited to Koon Street, with some queueing on Pourroy Road as vehicles slow down to turn into Koon Street. The highest turn-movement volumes at the access driveway would occur during the AM peak hour with student drop-off. The typical morning peak drop-off and afternoon pick-up activity lasts about 20 minutes, and any possible queue would dissipate immediately afterward.

Project development would also include paving 385 feet of Pourroy Road extending south from the intersection of Flossie Way to a currently paved portion of Pourroy Road. The areas of Flossie Way and Pourroy Road that would be developed would total about 0.65 acres.

\section*{8. Site Access, Internal Circulation, and Recommendations}

\subsection*{8.2 RECOMMENDATIONS}

The following recommendations have been prepared to ensure that adequate site access is provided. Figure 9 presents the project's site access and recommendations.
- Construct Koon Street at its ultimate width as an industrial collector road per County of Riverside design standards with a right-of-way of 78 feet between the project's western boundary and the project's access driveway. A sidewalk shall be provided on the northern side of the road along the school property with an adequate connection to allow pedestrian connections to the school buildings without walking on driveways.
- Construct and pave a section of approximately 385 feet in length of Pourroy Road as a 2-lane undivided roadway from Flossie Way to the existing paved section of Pourroy Road. This roadway improvement is expected to be implemented as a part of the proposed development just south of the project site, which is currently in review with County staff. However, it is acknowledged that a condition of approval will be added to the proposed project to require that this section of Pourroy Road is paved prior to the commencement of school operations.
- The intersection of Koon Street with Pourroy Road shall form a 4-leg intersection with Flossie Way.
- Parking and student loading/unloading shall be prohibited on Koon Street to reduce friction and maneuvers on Koon Street, especially during student drop-off and pick-up times.
- Prior to the opening of the project, the school shall work with the Riverside County to identify on-site traffic signing and striping to be implemented in conjunction with detailed construction plans for the project. These shall be in conformance with design standards from the California Manual of Uniform Traffic Control Devices for Streets and Highways (CA MUTCD) and Riverside County standards.
- The school and the Riverside County should periodically review traffic operations in the vicinity of the project once the project is constructed to ensure that traffic operations are satisfactory.
- The charter school shall work with the County of Riverside and implement operational mitigation measures such as additional time restrictions, markings, signage, modifications to loading procedures and education for parents and students to improve traffic follow, if necessary.

Figure 9 - Project Site Access Recommendations


Prior to the opening of the project, the school shall work with the Riverside County to identify on-site traffic signing and striping to be implemented in conjunction with detailed construction plans for the project. These shall be in conformance with design standards from the California Manual of Uniform Traffic Control Devices for Streets and Highways (CA MUTCD) and Riverside County standards.

The school and the Riverside County should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that traffic operations are satisfactory.
- Project Site

0
0
500
Scale (Feet)
Source: Google Earth Pro, 2016; Site Plan: WLC Architects, 2016
-
8. Site Access, Internal Circulation, and Recommendations

This page intentionally left blank.

\section*{9. Congestion Management Plan Conformance}

The Congestion Management Program (CMP) in effect in Riverside County was approved by the Riverside County Transportation Commission (RCTC) in 2011. All freeways and selected arterial roadways in the county are designated elements of the CMP system of highways and roadways. SR-79 is part of the CMP roadway system. According to the RTCT CMP plan, when a deficiency is identified, a deficiency plan must be prepared by the local agency (in this case Caltrans). Other agencies identified as contributors to the deficiency, which include the County of Riverside, are also required to coordinate with the development of the plan. The plan must contain mitigation measures, including consideration of Transportation Demand Management strategies and transit alternatives, and a schedule for mitigating deficiency.

Western Riverside County local agencies and the County of Riverside have adopted TUMF programs. If, during the annual LOS monitoring process, an intersection within the TUMF area falls below LOS E, an evaluation of planned improvements necessary to mitigate the deficiency would be mitigated through implementation of TUMF projects.

The project would generate 540 AM peak hour trips and 102 PM peak hour trips. The trip distribution map shows that up to 55 percent of these trips would travel on segments of SR-79. Therefore, up to 297 trips would be added to segments of SR-79. The project would contribute to trips that would cause intersections along SR-79 to operate at unacceptable LOS. These deficiencies would occur without or with the project. The project would cause a cumulative impact at three study intersections along SR-79 at its intersections with Pourroy Road/Abelia Street, Max Gillis Boulevard/Thompson Road, and Benton Road.

\section*{9. Congestion Management Plan Conformance}

This page intentionally left blank.

\section*{10. References}

American Association of State Highway and Transportation Officials. 2001. Geometric Design of Highways and Streets.

California Department of Education (CDE). 2016, December 21. Dataquest. http://dq.cde.ca.gov/dataquest/.

California Department of Transportation (Caltrans). 1999, November. State Route 79. Route Concept Fact Sheet. http://sr79project.info/uploads/media_items/route-concept-report-november -1999.original.pdf.
___ 2012, May 7. State Highway Design Manual.
Caltrans Data Branch. 2014. All Traffic Volumes on CSHS. Accessed December 16, 2016. http://www.dot.ca.gov/trafficops/census/2014all/Route71-80.html.

Institute of Transportation Engineers (ITE). 2012. Trip Generation. 9th edition.
Riverside, County of. Map My County: Circulation Element Map. http://mmc.rivcoit.org/MMC_Public/Viewer.html?Viewer=MMC_Public.

Riverside County Planning Department.
___2003. Riverside County General Plan. http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx.
___ 2015. Riverside County General Plan Circulation Element
http://planning.rctlma.org/Portals/0/genplan/general_plan_2016/elements/Ch04_Circulation_120 815.pdf? ver=2016-04-01-100756-397.

Riverside County Transportation Commission (RCTC). 2011, December 14. 2011 Riverside County Congestion Management Program. http://rctc.org/uploads/media_items/congestionmanagementprogram.original.pdf.

Riverside County Transportation Department. 2008. Traffic Impact Analysis Preparation Guide. http://www.cityofhemet.org/DocumentCenter/Home/View/784.
——_ Riverside County Transportation Department Funding Programs. Last Accessed December 16, 2016. http:/ /rctlma.org/trans/Land-Development/Funding-Programs.

\section*{10. References}

Riverside Transit Agency (RTA). 2016, September 11. Route 79.
http://www.riversidetransit.com/images/stories/DOWNLOADS/ROUTES/079.pdf.
Transportation Research Board. 2000. Highway Capacity Manual.
Western Riverside Council of Governments (WRCOG). 2016, June 24. Transportation Uniform Mitigation Fee Administrative Plan.

\section*{Appendix A. Memorandum of Understanding with Riverside County Transportation Department}

\section*{Exhibit B}

\section*{SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY}

This letter acknowledges the Riverside County Transportation Department requirements for traffic impact analysis of the following project. The analysis must follow the Riverside County Transportation Department Traffic Study Guidelines dated February 2005.

Case No.
Related Cases SP No. EIR No. GPA No
\(\qquad\) CZ No.
Project Name: Temecula Valley Charter School
Project Address: Two parcels on the west side of State Route 79 between Keller Road and Pourroy Road Project Description: Construct a public charter school for 600 students in grades K-8.
\begin{tabular}{|c|c|c|}
\hline \multirow[b]{3}{*}{Name: Address:} & Consultant & Developer \\
\hline & PlaceWorks & Temecula Valley Charter School \\
\hline & 3 MacArthur Place, Suite 1100 & 35755 Abelia Street \\
\hline & Santa Ana, CA 92707 & Winchester, CA 92596 \\
\hline Telephone: & (714) 966-9220 & (951) 294-6780 \\
\hline Fax: & (714) 966-9221 & \\
\hline
\end{tabular}
A. Trip Generation Source: ITE \(9^{\text {th }}\) Edition ITE Code 534 Private School (K-8)


A passby trip discount of \(25 \%\) is allowed for appropriate land uses. The passby trips at adjacent study area intersections and project driveways shall be indicated on a report figure.
 (attach exhibit for detailed assignment)

See attached exhibit.

\section*{C. Background Traffic}

Project Build-out Year:
Annual Ambient Growth Rate: \(\qquad\) 2 \% 2018
Phase Year(s) N/A
Other area projects to be ana
Consulting with the County of Riverside and City of Murrieta.
Model/Forecast methodology Traffic from 2\% annual ambient growth plus cumulative projects.
\begin{tabular}{lll} 
Traffic Impact Analysis & \(-14-\) & April 2008
\end{tabular}

\section*{Exhibit B - Scoping Agreement - Page 2}
D. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)
1. SR-79 and Keller Road
2. SR-79 and Abelia Street
3. SR-79 and Whisper Heights/Pourroy Road
4. SR-79 and Jean Nicholas Road
5. SR-79 and Thompson Road
6. SR-79 and Benton Road
7. Pourroy Road and Pat Road
8. Elliott Road at Jean Nicholas Road
9. Pourroy Road and Skyview Road
10. Pourroy Road and Thompson Road
E. Study Roadway Segments: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)
1.
2.
3.
4.
5. \(\qquad\)
6.
7.
8.
9.
10. \(\qquad\)
E. Other Jurisdictional Impacts

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries? \(\mathbb{X}\) Yes \(\square\) No
If so, name of City Jurisdiction: City of Murrieta
F. Site Plan (please attach reduced copy)
G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Transportation Department) (NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)
Emergency access? For P.m. Peak hr. analysis conduct count from 2:00 p.m - 6:00 pm.
H. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.
Date of counts Conduct count after Harvest Hill 5 team Acadamy is in session.
*NOTE* Traffic Study Submittal Form and appropriate fee must be submitted with, or prior to submittal of this form. Transportation Department staff will not process the Scoping Agreement prior to receipt of the fee.

Recommended by:
\(\overline{\text { Consultant's Representative }} \overline{\text { Date }}\)

Scoping Agreement Submitted on \(\qquad\)
Revised on \(\qquad\)
1. The analysis scenario to be:
a. Existing
b. Existing + School
c. Existing + Ambiance + School
d. Existing + Ambiance + School + Cumulative
2. Confirm trip distribution does not need to conform to School District Boundaries.

Figure 1 - Project Trip Distribution

\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & Status & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline CUP03078R3 & DRT & 20150512 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{EXTEND LIFE OF PRIVATE AIRSTRIP - CUP03078} \\
\hline CUP03556 & DRT & 20070620 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{15 BLDGS FOR STORAGE OF BOATS/RV/HOUSEHOLD GOODS A} \\
\hline CUP03593 & DRT & 20080507 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SELF STORAGE FACILITY/RETAIL BUILDING / CAR WASH /} \\
\hline CUP03744 & DRT & 20160414 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{INDUSTRIAL BLDG W/Brewery, wine production/STORAGE} \\
\hline PM29509 & DRT & 20001227 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 37.12 AC INTO 27 COMMERCIAL/IND PARCELS} \\
\hline PM32317 & APPLIED & 20040805 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{SUB-DIV 135.50 AC INTO 5 LEGAL PARCELS FOR TR32318} \\
\hline PM33691R1 & BOS & 20120814 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{RECONDITION TRANSPORTATION CONDITIONS} \\
\hline PM33750 & DRT & 20050720 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SCHED E division of 28.19 AC. Into 3 PARCELS 1 OPE} \\
\hline PM37082 & DRT & 20160331 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{SCH E MAP/SUBDIVIDE 7 LOT INTO 2 PARCELS} \\
\hline PM37190 & APPLIED & 20160819 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{SChedule "E" PARCEL MAP - 6 Lots} \\
\hline PP20682 & DRT & 20050721 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{MIXED USE/MINIMART GAS STATION CARWASH/STORAGE} \\
\hline PP21022 & DRT & 20051028 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{PRIVATE TRADE SCHOOL} \\
\hline PP22974 & DRT & 20070801 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{INITIAL STUDY FOR THE PROPOSED PROJECT THAT INVOLV} \\
\hline PP23001 & APPLIED & 20070810 & 0 & 0 \\
\hline PP23146 & DRT & 20071030 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{OFFICE/INDUSTRIAL/COMMERCIAL RETAIL CENTER} \\
\hline PP25340 & DRT & 20130404 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{70 FT MONOPINE AND UNMANNED WIRELESS FACILITY} \\
\hline PP25693 & DRT & 20141021 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{VERIZON-80FT LIGHT STD/12 ANTENNAS/9 FT BLOCK WALL} \\
\hline PP25793 & DRT & 20150403 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{DENNY'S RESTAURANT-4320SF/EL POLLO RESTRNT-2975SF} \\
\hline PP25998 & DRT & 20160328 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{156,499 SF MULTI-BLDG. SELF STORAGE/RV STORAGE FAC} \\
\hline PP26047 & DRT & 20160616 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{1 STORY OFFICE BUILDING} \\
\hline PP26084 & APPLIED & 20160819 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{CONSTRUCT A 351,060 SQ. FT. WALMART SHOPPING} \\
\hline PUP00907 & DRT & 20101104 & 0 & 20000000 \\
\hline CHARTER & HOOL FO & & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline SP00106A17 & DRT & 20060522 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{AMEND ZONES WITHIN SP} \\
\hline SP00106AF & DRT & 20050728 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{TO CHANGE INDUSTRIAL LAND USE TO 7.02 AC OF MEDIUM} \\
\hline SP00106AG & DRT & 20051012 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SC FOR SP106-13.2 AC LDR-MDR 11.09 AC MDR-RR} \\
\hline SP00106AI & DRT & 20080609 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{AMENDMNT 18 TO CHNG TO RETAIL/OFFICE/FLEX INDUSTRL} \\
\hline SP00284A3 & DRT & 20071030 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{GENERAL COMMERCIAL LANDUSE IN PLANNING AREA 1\&2} \\
\hline SP00286A6 & BOS & 20140325 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SPA TO AMEND WINCHESTER 1800 TO 105.5 AC OF SITE.} \\
\hline SP00293A6 & APPLIED & 20151223 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{NEW PLANNING AREAS FOR GPA01162} \\
\hline SP00312A2 & DRT & 20160128 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{INCREASE DENSITY/EXTEND BOUNDARY OF SP 312} \\
\hline TR30430 & WITHDRWN & 20030305 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 40.12 INTO 1227200 SINGLE FAMILY RESIDE} \\
\hline TR32318 & DRT & 20040610 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SCHEDULE A-DIVIDE 135.5 ACRES INTO 396 SF LOTS W/} \\
\hline TR32323 & DRT & 20051012 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SUBDIV 20 AC INTO 38 SFR - SCHEDULE A / SP106AG} \\
\hline TR34150 & DRT & 20051019 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{Schedule A subdivision of 38.9 acres into 82 sing।} \\
\hline TR34150 & DRT & 20051019 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SCHED A DIVIIION OF 38.9 AC INTO 82 SFR LOTS} \\
\hline TR34534 & DRT & 20060313 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 158.84 ACRES INTO 12 LOTS} \\
\hline TR34689 & DRT & 20060825 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SCHED A DIVISION OF 4.8 AC INTO 198,000 SQ FT LOT} \\
\hline TR34735 & DRT & 20060710 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SUBDVD 73AC ONTO 314 SFR LOTS/SCHEDULE "A"/5 PARKS} \\
\hline TR35328 & DRT & 20070410 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 10 ACRES INTO 38 RESIDENTIAL LOTS} \\
\hline TR36467 & DRT & 20140226 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{TRACT MAP TO SUBDIVIDE 156.12 ACRES INTO 421 LOTS.} \\
\hline TR36785 & DRT & 20141124 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{SCHED."A" dIVIIION OF 170.8 AC. InTO 523 RES. LOTS} \\
\hline TR37028 & DRT & 20151014 & 0 & 20000000 \\
\hline \multicolumn{5}{|l|}{SCHED A-43.91 AC INTO 133 LOTS/1 OPEN SPC/6 BASINS} \\
\hline TR37053 & DRT & 20160128 & 0 & 0 \\
\hline \multicolumn{5}{|l|}{SCHED A - 747 RESIDENTIAL LOTS/84 OPEN SPACE LOTS} \\
\hline TR37089 & APPLIED & 20160503 & 0 & 0 \\
\hline PROPOS & H B DEV 48.4 & TS 2 OPEN SP & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline CUP01485 & APPROVED & 02/05/2008 & 0 & NA \\
\hline \multicolumn{5}{|l|}{PROPOSAL FOR PLANNED RESIDENTIAL DEVELOPMENT} \\
\hline CUP02546 & APPROVED & 12/26/2000 & 0 & NA \\
\hline \multicolumn{5}{|l|}{RECREATION VEHICLE PARK} \\
\hline CUP02982 & APPROVED & 12/08/2000 & 0 & 09/28/2008 \\
\hline \multicolumn{5}{|l|}{DAIRY FARM} \\
\hline CUP03078R1 & EXPIRED & 03/03/1998 & 19980623 & 06/06/2006 \\
\hline \multicolumn{5}{|l|}{RENEW CUP3078 FOR ADDITIONAL 10 YEARS} \\
\hline CUP03078R2 & APPROVED & 06/18/2004 & 20041130 & 06/16/2016 \\
\hline \multicolumn{5}{|l|}{CHANGE COND. 10 PLANNING 30 - FLIGHT PATTERN WILL} \\
\hline CUP03295 & APPROVED & 08/16/1999 & 0 & NA \\
\hline \multicolumn{5}{|l|}{CUP FOR RV/BOAT STORAGE W/CARETAKER QUARTERS.} \\
\hline CUP03359 & APPROVED & 12/13/2001 & 20030415 & 04/15/2006 \\
\hline \multicolumn{5}{|l|}{CHEVRON GAS STATION W/CONVENIENCE STORE \& CAR WASH} \\
\hline CUP03385 & APPROVED & 07/25/2002 & 20040608 & NA \\
\hline \multicolumn{5}{|l|}{NEIGHBORHOOD SHOPPING CENTER} \\
\hline CUP03467 & APPROVED & 09/13/2005 & 20071218 & 12/18/2010 \\
\hline \multicolumn{5}{|l|}{SHOPPING CENTER W/ 106,278 SF HOME DEPOT W/ 34,760} \\
\hline CUP03471 & APPROVED & 10/18/2005 & 20070227 & 12/13/2009 \\
\hline \multicolumn{5}{|l|}{SELF STORAGE FACILITY ON 4.63 AC UNDER SHED. E} \\
\hline CUP03681 & APPROVED & 03/06/2012 & 20150630 & 06/30/2035 \\
\hline \multicolumn{5}{|l|}{WEDDING/SPECIAL EVENTS FACILITIES} \\
\hline CUP03700 & APPROVED & 01/07/2014 & 20150520 & NA \\
\hline \multicolumn{5}{|l|}{CONSTRUCT A NEW ARCO AM/PM STORE CONSISTING OF A 3} \\
\hline PM28079 & APPROVED & 04/14/1995 & 19960102 & 01/02/1999 \\
\hline \multicolumn{5}{|l|}{DIVIDE APPROX 298 ACRES INTO 4 PARCELS} \\
\hline PM28229 & APPROVED & 04/20/2001 & 20020723 & NA \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 20 ACRES INTO 4 FIVE (5) ACRE PARCELS} \\
\hline PM28381 & APPROVED & 08/26/1996 & 19970107 & 01/07/2000 \\
\hline \multicolumn{5}{|l|}{DIVIDE 41.16 ACRES INTO FOUR 10-ACRE PARCELS} \\
\hline PM28909 & APPROVED & 08/12/1998 & 19990330 & 03/29/2002 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 29.39 AC INTO FOUR PARCELS W/5 AC MIN.} \\
\hline PM29704 & APPROVED & 09/13/2000 & 20011023 & 10/23/2004 \\
\hline \multicolumn{5}{|l|}{DIVIDE 121.78 ACRES INTO 2 PARCELS} \\
\hline PM30239 & APPROVED & 06/08/2001 & 20011211 & NA \\
\hline \multicolumn{5}{|l|}{DIVIDE 103.7 GROSS ACRES INTO 3 PARCELS} \\
\hline PM30363 & APPROVED & 03/06/2002 & 20031007 & 10/07/2006 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 4.42 AC INTO 3 PARCELS} \\
\hline PM30474 & APPROVED & 01/11/2002 & 20030415 & 04/15/2014 \\
\hline \multicolumn{5}{|l|}{SCHED E DIVISION OF 5 AC INTO 4 PARCELS.} \\
\hline PM30590 & APPROVED & 04/09/2002 & 20030107 & NA \\
\hline \multicolumn{5}{|l|}{DIVIDE 5 ACRES INTO TWO 2.5 ACRE PARCELS} \\
\hline PM30693 & APPROVED & 06/11/2003 & 20040608 & 06/08/2007 \\
\hline
\end{tabular}

COMM. DEV. 16.05 ACRES INTO 12 COMMERCIAL LOTS
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline PM30693M1 & APPROVED & 08/18/2005 & 20071120 & 11/20/2010 \\
\hline \multicolumn{5}{|l|}{ADD DED EASEMNTS/ROW,CHANGE LL,REDUCE LTS/SEE DESC} \\
\hline PM30790 & APPROVED & 12/12/2002 & 20040713 & 07/13/2016 \\
\hline \multicolumn{5}{|l|}{DIVIDE 20 ACRES INTO 19 CPS AND MSC LOTS AND 2 DET} \\
\hline PM30853 & APPROVED & 10/04/2002 & 20031007 & 10/07/2006 \\
\hline \multicolumn{5}{|l|}{SCH "H" MAP-DIVIDE 10AC INTO (2) 5AC LOTS} \\
\hline PM31447 & APPROVED & 09/24/2003 & 20040629 & NA \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 25.26 ACRES INTO 4 5AC PARCELS \& 1 REMAI} \\
\hline PM31918 & APPROVED & 07/09/2004 & 20060918 & 09/18/2014 \\
\hline \multicolumn{5}{|l|}{SCHED H DIVISION OF 9.9 AC. INTO 2 PARCELS.} \\
\hline PM32379 & APPROVED & 05/07/2004 & 20060614 & 06/14/2016 \\
\hline \multicolumn{5}{|l|}{(1) 21 AC PARCEL INTO (3) LOTS \& ROAD REALIGNMENT} \\
\hline PM32914 & APPROVED & 03/24/2005 & 20060206 & 02/06/2009 \\
\hline \multicolumn{5}{|l|}{SCHED H SUBDIVISION OF 29.59 AC INTO 2 PARCELS} \\
\hline PM33691 & APPROVED & 11/22/2005 & 20080325 & 03/25/2017 \\
\hline \multicolumn{5}{|l|}{SCHED E DIVISION OF 82.07 AC INTO 11 PARCELS \& 60} \\
\hline PM33859 & APPROVED & 09/30/2005 & 20070205 & 02/05/2011 \\
\hline \multicolumn{5}{|l|}{SCHED H DIVISION OF 20 ACRES INTO 4 PARCELS.} \\
\hline PM35212 & APPROVED & 10/10/2006 & 20101214 & 12/14/2017 \\
\hline \multicolumn{5}{|l|}{DIVIDE 2 PARCELS INTO 23 COMMERCIAL OFC/RETAIL LOT} \\
\hline PM35686 & ANNEXED & 09/19/2007 & 20090810 & NA \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 7 ACRE PARCELS INTO 2 LOTS SCHED H} \\
\hline PM36049 & APPROVED & 06/09/2008 & 20120409 & 04/09/2015 \\
\hline \multicolumn{5}{|l|}{SCH H DIVISION OF 29.5 AC INTO 2 PARCELS.} \\
\hline PM36161 & APPROVED & 04/06/2009 & 0 & 08/05/2017 \\
\hline \multicolumn{5}{|l|}{SCHEDULE E SUBDIVISION OF 23.66 AC. INTO 6 PARCELS} \\
\hline PM36628 & APPROVED & 12/23/2014 & 20160125 & NA \\
\hline \multicolumn{5}{|l|}{SCHEDULE I PARCEL MAP TO SUBDIVIDE 285.46 ACRES IN} \\
\hline PP12454R1 & APPROVED & 10/13/1998 & 19990419 & 04/19/2000 \\
\hline \multicolumn{5}{|l|}{ADD 2725 SQ FT TO EXSTG INDUSTRIAL BLDG} \\
\hline PP13046 & APPROVED & 11/21/1991 & 19950411 & 04/11/1999 \\
\hline \multicolumn{5}{|l|}{ESTABLISH COMMERCIAL USES, BAKERY, RESTAURANT ETC} \\
\hline PP13284 & APPROVED & 06/17/1992 & 19930208 & 02/08/1995 \\
\hline \multicolumn{5}{|l|}{PAC-TEL CELLULAR MONOPOLE AND EQUIPMENT BUILDING} \\
\hline PP15239 & APPROVED & 12/02/1997 & 19980921 & 09/21/2000 \\
\hline \multicolumn{5}{|l|}{75' FT. MONOPOLE/ANTENNA FOR WIRELESS TELECOM SITE} \\
\hline PP15239R1 & APPROVED & 02/28/2001 & 20010426 & NA \\
\hline \multicolumn{5}{|l|}{REVISE PP15239-ADD SHELTER/ANNTENNAS TO TOWER} \\
\hline PP15445R1 & APPROVED & 08/30/2000 & 20001127 & 11/27/2002 \\
\hline \multicolumn{5}{|l|}{CO-LOCATE CELL SITE, ADD TOWER HEIGHT,ANTENNA AND} \\
\hline PP16117 & APPROVED & 08/24/1999 & 20020819 & 08/19/2004 \\
\hline \multicolumn{5}{|l|}{MINI STORAGE FACILITY} \\
\hline PP16518 & APPROVED & 04/26/2000 & 20001106 & 11/06/2002 \\
\hline CONSTRU & T FIBER OPTIC & ACILITY. & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline PP17145 & APPROVED & 05/29/2001 & 20020701 & NA \\
\hline \multicolumn{5}{|l|}{85 FT MONOPINE \& EQUIP CABINETS FOR SPRINT} \\
\hline PP17282 & APPROVED & 08/15/2001 & 20020826 & NA \\
\hline \multicolumn{5}{|l|}{CONSTRUCT TWO 23,467 SF DISTRIBUTION FACILITIES} \\
\hline PP17367 & APPROVED & 09/28/2001 & 20031222 & 12/22/2005 \\
\hline \multicolumn{5}{|l|}{85 FT MONOPINE W/12 ANTENNAS} \\
\hline PP18411 & APPROVED & 01/23/2003 & 20030819 & NA \\
\hline \multicolumn{5}{|l|}{204 MULTI FAMILY CONDO UNITS IN 34 BLDGS} \\
\hline PP19317 & APPROVED & 03/24/2004 & 20051031 & 10/31/2007 \\
\hline \multicolumn{5}{|l|}{7,143 SQ. FT. CHILD CARE CENTER} \\
\hline PP19414 & APPROVED & 05/03/2004 & 20070123 & 01/23/2010 \\
\hline \multicolumn{5}{|l|}{PP FOR 3-STORY COM. OFF. BLDG ON 4.2 AC IN A-1-5} \\
\hline PP19442 & APPROVED & 05/13/2004 & 20070313 & 03/13/2009 \\
\hline \multicolumn{5}{|l|}{186 MULTI-FAMILY CONDOMINIUMS W/I 32 BUILDINGS} \\
\hline PP19962 & APPROVED & 11/09/2004 & 20060418 & 04/18/2008 \\
\hline \multicolumn{5}{|l|}{PLOT PLAN FOR 140 CONDO UNITS WITH TR33170} \\
\hline PP20375 & APPROVED & 03/23/2005 & 20090112 & 01/12/2014 \\
\hline \multicolumn{5}{|l|}{PROPOSED FARMER BOYS RESTAURANT W/DRIVE TRHU LANE} \\
\hline PP20392 & APPROVED & 03/30/2005 & 20060710 & 07/10/2010 \\
\hline \multicolumn{5}{|l|}{BOYS \& GIRLS CLUB FACILITY} \\
\hline PP21024 & APPROVED & 10/28/2005 & 20070731 & 07/31/2009 \\
\hline \multicolumn{5}{|l|}{THE CONSTRUCTION OF A 51,314 SQUARE FOOT BUILDING} \\
\hline PP21087 & APPROVED & 11/09/2005 & 20060214 & NA \\
\hline \multicolumn{5}{|l|}{Model Home Complex and Sales Office in Tract No.} \\
\hline PP21163 & APPROVED & 11/22/2005 & 20080225 & 02/25/2013 \\
\hline \multicolumn{5}{|l|}{27 1STORY OFFICE BLDGS 39 1STORY INDUSTRIAL BLDGS,} \\
\hline PP22561 & APPROVED & 02/15/2007 & 20070820 & 08/20/2009 \\
\hline \multicolumn{5}{|l|}{INSTALL 6 EQUIP CABINETS\& 12 ANTENNAS ON EXSTG TWR} \\
\hline PP22650 & APPROVED & 03/20/2007 & 20071217 & 12/17/2009 \\
\hline \multicolumn{5}{|l|}{174 APTS UNITS WITHIN 9 3STORY BLDG /SING CLUB HSE} \\
\hline PP23239 & APPROVED & 12/27/2007 & 20090406 & 04/06/2011 \\
\hline \multicolumn{5}{|l|}{CONSTRUCT A 44 FEET MONOPINE WIRLESS FACILITY} \\
\hline PP23860 & APPROVED & 10/30/2008 & 20090921 & 09/21/2011 \\
\hline \multicolumn{5}{|l|}{70' BROADLEAF TREE W/9 ANTENNAE \& 160 SQ FT EQUIPM} \\
\hline PP23975 & APPROVED & 02/04/2009 & 20090914 & 09/14/2011 \\
\hline \multicolumn{5}{|l|}{CONSTRUCT A 24,605 S.F. BLDG FOR EXOTIC ELECTRO OP} \\
\hline PP24054 & APPROVED & 04/06/2009 & 0 & 08/05/2017 \\
\hline \multicolumn{5}{|l|}{160,680 SF MIX OF COMMERCIAL, RESTAURANT, FINANCIA} \\
\hline PP24267 & APPROVED & 10/06/2009 & 20091130 & 11/30/2013 \\
\hline \multicolumn{5}{|l|}{PROPOSE TO USE NORTH HALF OF PROP FOR CHURCH} \\
\hline PP24268 & APPROVED & 10/06/2009 & 20091116 & 11/16/2014 \\
\hline \multicolumn{5}{|l|}{4900 SQ FT CHURCH W/1 1600 SQ FT CARETAKER QUARTER} \\
\hline PP24289 & APPROVED & 10/28/2009 & 20110425 & 04/25/2013 \\
\hline 70'MON & INE 18 PANEL & SHELTER & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline PP24903 & APPROVED & 03/31/2011 & 0 & 05/01/2016 \\
\hline \multicolumn{5}{|l|}{CHURCH CAMPUS TOTALING 80,673 SF IN 3 PHASES} \\
\hline PP25183 & APPROVED & 08/14/2012 & 0 & NA \\
\hline \multicolumn{5}{|l|}{331,003 S.F. 57 UNIT INDUSTRIAL OFFICE COMPLEX} \\
\hline PP25848 & APPROVED & 07/16/2015 & 20151211 & NA \\
\hline \multicolumn{5}{|l|}{VERIZON MODIFY EXISTING BY-RIGHT CELL TOWER} \\
\hline PUP00767 & APPROVED & 06/09/1995 & 19951219 & 12/19/1997 \\
\hline \multicolumn{5}{|l|}{MULTI USE COMMUNICATION SITE} \\
\hline PUP00789 & APPROVED & 12/29/1997 & 19990824 & NA \\
\hline \multicolumn{5}{|l|}{CHURCH, FELLOWSHIP HALL, SCHOOL, CLASSROOMS} \\
\hline PUP00789R1 & APPROVED & 09/28/2005 & 20061128 & 11/28/2009 \\
\hline \multicolumn{5}{|l|}{RENEW EXPIRED CHURCH USE PUP789} \\
\hline SP00106 & APPROVED & 01/10/1973 & 19730619 & NA \\
\hline \multicolumn{5}{|l|}{SP ON 2,866 ACRES WITH 2,919 DU'S ON 2,630 RESIDEN} \\
\hline SP00106A2 & APPROVED & 06/30/1981 & 19820609 & NA \\
\hline \multicolumn{5}{|l|}{AMEND 2,866 ACRES OF SP 106 BY DELETING 1,618 ACRE} \\
\hline SP00106A3 & APPROVED & 07/03/1985 & 19861014 & NA \\
\hline \multicolumn{5}{|l|}{AMEND SP 106 BY DELETING COND. 45 REQUIRING WATER} \\
\hline SP00106A4 & APPROVED & 01/14/1989 & 19921020 & NA \\
\hline \multicolumn{5}{|l|}{AMEND 28.7 AC OF SP 106 FROM RESIDENT. W/ 6 DU'S T} \\
\hline SP00106A5 & APPROVED & 02/05/1991 & 19950509 & NA \\
\hline \multicolumn{5}{|l|}{AMEND 30.1 ACRES OF SP 106 FROM RESIDENTIAL W/ 4 D} \\
\hline SP00106A7 & APPROVED & 08/06/1998 & 19991221 & NA \\
\hline \multicolumn{5}{|l|}{CHANGE DESIGNATION TO 3.0 DU/AC \& 3.7 DU/AC} \\
\hline SP00106A8 & APPROVED & 01/22/1999 & 19991221 & NA \\
\hline \multicolumn{5}{|l|}{CHANGE FROM AG DESIGNATION TO SINGLE FAMILY} \\
\hline SP00106A9 & APPROVED & 01/25/2000 & 20020507 & NA \\
\hline \multicolumn{5}{|l|}{CHANGE INDUSTRIAL DESIGNATION TO SFR.} \\
\hline SP00106AA & APPROVED & 03/07/2001 & 20011218 & NA \\
\hline \multicolumn{5}{|l|}{AMEND LAND USE DESIG.FOR PORTIONS OF PA8,PA9,PA10,} \\
\hline SP00106AB & APPROVED & 12/12/2002 & 20050208 & NA \\
\hline \multicolumn{5}{|l|}{AMEND SP00106 TO CHANGE LAND USE DESIGNATIONS ON A} \\
\hline SP00106AC & APPROVED & 12/17/2002 & 20040323 & NA \\
\hline \multicolumn{5}{|l|}{CHANGE DESIG FROM 5 AC MIN TO 3-5 DU/AC} \\
\hline SP00106AD & APPROVED & 05/15/2003 & 20040323 & NA \\
\hline \multicolumn{5}{|l|}{AMEND DUTCH VILLAGE DENSITY FROM LOW TO MEDIUM} \\
\hline SP00106AE & APPROVED & 06/04/2003 & 20050228 & NA \\
\hline \multicolumn{5}{|l|}{CHANGE OF LAND USE FORM INDUSTRIAL TO RESIDENTIAL} \\
\hline SP00158 & APPROVED & 12/08/1980 & 19820330 & NA \\
\hline \multicolumn{5}{|l|}{SP ON 1857 ACRES WITH 7854 DU'S ON 1168 ACRES, 77} \\
\hline SP00158A4 & APPROVED & 02/13/1996 & 19960813 & NA \\
\hline \multicolumn{5}{|l|}{AMEND SP 158 TEXT INCLUDING CHANGES TO TIMING OF F} \\
\hline SP00184A2 & APPROVED & 10/16/1995 & 19970617 & 02/11/2017 \\
\hline INCREAS & OPEN SPACE & UCE NUMBER O & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline SP00247A1 & APPROVED & 05/31/2002 & 20031007 & NA \\
\hline \multicolumn{5}{|l|}{AMENDMENT TO SP FOR OVERALL LOT REDUCTION} \\
\hline SP00284 & APPROVED & 10/03/1990 & 19940830 & 08/30/2004 \\
\hline \multicolumn{5}{|l|}{DEVELOPMENT OF MIXED USE COMMUNITY} \\
\hline SP00284A2 & APPROVED & 09/29/2004 & 20060418 & 06/27/2026 \\
\hline \multicolumn{5}{|l|}{AMD SP00284 PLANNING AREA 6 FROM MHDR TO HDR} \\
\hline SP00286 & APPROVED & 11/05/1990 & 19970429 & 08/15/2010 \\
\hline \multicolumn{5}{|l|}{1889.6 ACRES IN MIXED USES} \\
\hline SP00286A1 & APPROVED & 08/20/1999 & 20000711 & NA \\
\hline \multicolumn{5}{|l|}{AMEND PL AREAS 43-47 FOR INCREASE OF 65 RES UNITS} \\
\hline SP00286A2 & APPROVED & 06/18/2001 & 20011218 & NA \\
\hline \multicolumn{5}{|l|}{ADD 40.1 ACRES TO SP286 FOR CONSTRUCTION OF 93 SFR} \\
\hline SP00286A3 & APPROVED & 12/13/2001 & 20020625 & NA \\
\hline \multicolumn{5}{|l|}{AMD SP TO ADD PLANNING AREA 51} \\
\hline SP00286A4 & APPROVED & 09/27/2002 & 20040323 & NA \\
\hline \multicolumn{5}{|l|}{AMENDING PLANNING AREA BOUNDARIES/STANDARDS} \\
\hline SP00286A5 & APPROVED & 11/09/2004 & 20070313 & 06/05/2027 \\
\hline \multicolumn{5}{|l|}{CHANGE PA7 MDR TO PA2A OS/DRAINAGE, TRANSFER OF} \\
\hline SP00293 & APPROVED & 05/03/1991 & 19971028 & 05/14/2016 \\
\hline \multicolumn{5}{|l|}{MIXED USE SP WITH RES., COMMERCIAL \& INDUSTRIAL US} \\
\hline SP00293A5 & APPROVED & 11/28/2006 & 20090616 & NA \\
\hline \multicolumn{5}{|l|}{DIVIDE PA 47 INTO PA 47A \& 47B/DIVIDE PA 50 INTO P} \\
\hline SP00310 & APPROVED & 05/05/1998 & 20041214 & NA \\
\hline \multicolumn{5}{|l|}{SPECIFIC PLAN OF LAND USE} \\
\hline SP00312 & APPROVED & 09/14/1998 & 20010605 & NA \\
\hline \multicolumn{5}{|l|}{SP ON 607.8 ACRES WITH 2,135 DU'S AND 1.5 A. COMM} \\
\hline SP00312A1 & TENTAPPR & 12/22/2011 & 20131230 & NA \\
\hline \multicolumn{5}{|l|}{MODIFY PA'S TO REDUCE INTENSITY AND CHNG LAND USES} \\
\hline SP00322 & APPROVED & 04/07/2000 & 20020625 & NA \\
\hline \multicolumn{5}{|l|}{MIXED COMML/MIXED DENSITY RES/PARK/OPEN SPACE} \\
\hline SP00380 & APPROVED & 11/24/2009 & 20131105 & NA \\
\hline \multicolumn{5}{|l|}{SP COMMERCIAL OFFICE,RETAIL MIXED USE,RESIDENTIAL} \\
\hline SP00382 & TENTAPPR & 04/23/2012 & 20150611 & NA \\
\hline \multicolumn{5}{|l|}{343.6 AC SPECIFIC PLAN FOR RES DEV "BELLE TERRE"} \\
\hline TR25930 & APPROVED & 03/21/1990 & 19911119 & 11/19/1997 \\
\hline \multicolumn{5}{|l|}{DIVIDE APPROX 80 ACRES INTO 31 LOTS} \\
\hline TR26798 & APPROVED & 08/19/1994 & 20000321 & 03/21/2003 \\
\hline \multicolumn{5}{|l|}{DIVIDE APPROX 59 ACRES INTO 175 LOTS} \\
\hline TR28092M1 & APPROVED & 11/16/2000 & 20010619 & NA \\
\hline \multicolumn{5}{|l|}{REVISE TRAFFIC STUDY AN CONDITION OF APPROVAL IN} \\
\hline TR28093M1 & APPROVED & 06/24/1998 & 19981201 & 10/24/1999 \\
\hline \multicolumn{5}{|l|}{MINOR CHANGE TO AMEND TRANSPORTATION DEPT. COA} \\
\hline TR28296 & APPROVED & 10/28/1996 & 19970708 & 07/08/2001 \\
\hline DIVIDE 3 & 8 AC INTO 108 & K,4 OPEN SP & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline TR28296M1 & APPROVED & 10/22/1999 & 20000516 & 07/08/2003 \\
\hline \multicolumn{5}{|l|}{ELIM PK SITE ADD 2 INT DET BASINS ELIM F/POR E DR} \\
\hline TR28297 & APPROVED & 10/28/1996 & 19970708 & 07/08/2005 \\
\hline \multicolumn{5}{|l|}{DIVIDE 23.5 ACRES INTO 88 RES LOTS, 1 MEADOW 2 OS} \\
\hline TR28298 & APPROVED & 10/28/1996 & 19970708 & 07/08/2005 \\
\hline \multicolumn{5}{|l|}{DIVIDE 38.1 AC INTO 147 RES LOT 1MEADOW,1PARK2OPEN} \\
\hline TR28460 & APPROVED & 11/26/1996 & 19980818 & 08/18/2001 \\
\hline \multicolumn{5}{|l|}{DIVISION OF 36.2 AC INTO 183 RES LOTS 2 OPEN SP LO} \\
\hline TR28695 & APPROVED & 09/16/1998 & 20010501 & 05/01/2006 \\
\hline \multicolumn{5}{|l|}{DVD 166AC TO 421SFR/1 MFR/1 SCHOOL/1 PRK/21 OS LOT} \\
\hline TR28847 & APPROVED & 04/21/1998 & 19980901 & 09/01/2001 \\
\hline \multicolumn{5}{|l|}{DIV 52.5 AC TO 207 RES LOTS \& 3 OPEN SPACE(DETENTI} \\
\hline TR28914 & APPROVED & 08/06/1998 & 19991102 & 11/01/2002 \\
\hline \multicolumn{5}{|l|}{DVD 80 AC/240 SFR LOTS/3 DETN BASIN/1 OS LOT} \\
\hline TR29017 & APPROVED & 09/15/1998 & 19991026 & 10/26/2003 \\
\hline \multicolumn{5}{|l|}{117.37AC/364 SFR LOTS/1 PRK/1TRL/7 RD WY L/S LOTS} \\
\hline TR29098 & APPROVED & 07/29/1999 & 20061017 & 10/17/2016 \\
\hline \multicolumn{5}{|l|}{DVD 80.4 AC/39 SFR LOTS/4 O-S/1 DETN BSN/1 MSHCP} \\
\hline TR29114 & APPROVED & 12/20/2000 & 20011211 & 12/11/2007 \\
\hline \multicolumn{5}{|l|}{DIVIDE 74.12 AC/259 SFR LOTS/7 OPEN SPACE LOTS} \\
\hline TR29174 & APPROVED & 01/22/1999 & 19991109 & 11/08/2002 \\
\hline \multicolumn{5}{|l|}{DIV APX 60 AC INTO 227 LOTS \& 2 DET BASINS} \\
\hline TR29202 & APPROVED & 08/03/2000 & 20021001 & NA \\
\hline \multicolumn{5}{|l|}{30 ACRES INTO 107 RES. LOTS} \\
\hline TR29214 & APPROVED & 02/04/2003 & 20040124 & 01/24/2007 \\
\hline \multicolumn{5}{|l|}{SCH "A" SUBDIVISION (1)135AC PARCEL INTO 375 LOTS} \\
\hline TR29226 & APPROVED & 03/05/1999 & 20010227 & NA \\
\hline \multicolumn{5}{|l|}{DIVIDE 38.96 ACRES INTO 145 LOTS} \\
\hline TR29227 & APPROVED & 03/05/1999 & 20010227 & NA \\
\hline \multicolumn{5}{|l|}{DIVIDE 39.20 ACRES INTO 128 LOTS} \\
\hline TR29228 & APPROVED & 03/05/1999 & 20010227 & 02/27/2005 \\
\hline \multicolumn{5}{|l|}{DIV 54.70 AC INTO 135 RES, 2 DET BASINS\& 1 LIFT STA} \\
\hline TR29250 & APPROVED & 03/08/1999 & 19991116 & 11/16/2002 \\
\hline \multicolumn{5}{|l|}{TRACT MAP TO DIVIDE 1 LOT INTO 25 LOTS} \\
\hline TR29259 & APPROVED & 03/16/1999 & 20010626 & 06/26/2005 \\
\hline \multicolumn{5}{|l|}{DIV 59.6 AC INTO 153 RES, 1 DET BASIN 1 PARK LOTS} \\
\hline TR29268 & APPROVED & 05/06/1999 & 20000516 & 05/16/2003 \\
\hline \multicolumn{5}{|l|}{51 AC INTO 123 RES LOTS AND 3 OPEN SPACES} \\
\hline TR29269 & APPROVED & 05/06/1999 & 20000516 & 05/16/2003 \\
\hline \multicolumn{5}{|l|}{34.46 ACRES DIVIDED INTO 143 RES LOTS AND OPEN SP} \\
\hline TR29270 & APPROVED & 05/06/1999 & 20000516 & 05/16/2003 \\
\hline \multicolumn{5}{|l|}{35.49 ACRES INTO 127 RES LOTS AND 2 OPEN SPACE} \\
\hline TR29271 & APPROVED & 05/06/1999 & 20000516 & 05/16/2003 \\
\hline 17.74 AC & NTO 55 RES LOT & PACE & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{3}{|l|}{CASE DESCRIPTION} & & \\
\hline TR29408 & APPROVED & 02/14/2000 & 20010626 & 06/26/2005 \\
\hline \multicolumn{3}{|l|}{40 ACRES INTO 116 RES, 1 DET BASIN 1 LIFT STATION} & & \\
\hline TR29409 & APPROVED & 03/22/2000 & 20010626 & 06/26/2004 \\
\hline \multicolumn{3}{|l|}{SUBD 19.62 AC INTO 59 RES LOTS \& 2 DET BASIN LOTS} & & \\
\hline TR29442 & APPROVED & 08/20/1999 & 20000502 & 05/02/2003 \\
\hline \multicolumn{3}{|l|}{SUBD 120 AC INTO 305 RES/10 OPEN SP/1 SCHOOL/1 PK} & & \\
\hline TR29484 & APPROVED & 01/19/2000 & 20010828 & 08/28/2005 \\
\hline \multicolumn{3}{|l|}{DIV 90.61 AC 242 RES,3 DET BSNS, 3 OS \& 1 LIFT STA} & & \\
\hline TR29675 & APPROVED & 06/30/2000 & 20010717 & 07/17/2004 \\
\hline \multicolumn{3}{|l|}{DIV 87.53 AC INTO 253 RES, 1 PARK, 4 OS \& 1 DET BASN} & & \\
\hline TR29789 & APPROVED & 04/21/2000 & 20010828 & NA \\
\hline \multicolumn{3}{|l|}{SUDIVIDE 10.05 ACRES INTO 34 RESIDENTIAL PARCELS} & & \\
\hline TR29847 & APPROVED & 07/06/2000 & 20010626 & NA \\
\hline \multicolumn{3}{|l|}{DIV 62.40 AC IN 156 RES, 1 SCH 1 PARK 4 OS LOTS} & & \\
\hline TR29875 & APPROVED & 07/06/2000 & 20010417 & 04/17/2004 \\
\hline \multicolumn{3}{|l|}{SUBD 80 AC INTO 306 RES, 1 PARK 3 OPEN SPACE LOTS} & & \\
\hline TR29952 & APPROVED & 07/05/2001 & 20011218 & NA \\
\hline \multicolumn{3}{|l|}{SUBDIVIDE 40 ACRES INTO 93 SINGLE FAMILY RES LOTS} & & \\
\hline TR29952M1 & APPROVED & 09/19/2002 & 20021210 & 12/09/2005 \\
\hline \multicolumn{3}{|l|}{MC- CHANGE COA NO. 50 TRANS 23 (SECONDARY ACCESS)} & & \\
\hline TR29962 & APPROVED & 03/27/2001 & 20040622 & 06/22/2007 \\
\hline \multicolumn{3}{|l|}{SUBDIVIDE 46 ACRES INTO 149 SFR/1 O/S \& 1 PARK LOT} & & \\
\hline TR30069 & APPROVED & 01/15/2002 & 20031028 & 10/28/2006 \\
\hline \multicolumn{3}{|l|}{DIVIDE 317 AC INTO 654 RES LOTS \& 27 OPEN SPACE} & & \\
\hline TR30097 & APPROVED & 03/07/2001 & 20011023 & 10/23/2004 \\
\hline \multicolumn{3}{|l|}{DIVIDE 40 AC INTO 132 LOTS,3 OPEN SPACES \& ONE DET} & & \\
\hline TR30098 & APPROVED & 03/07/2001 & 20011023 & 10/23/2004 \\
\hline \multicolumn{3}{|l|}{DIVIDE 45.67 AC IN 133 LOTS, 1 OPEN SPACE \& 2 DETE} & & \\
\hline TR30105 & APPROVED & 03/06/2002 & 20030722 & NA \\
\hline \multicolumn{3}{|l|}{DIVIDE 40 AC INTO 100 LOTS-SCHED A 7200 SF} & & \\
\hline TR30110 & APPROVED & 06/12/2001 & 20020409 & NA \\
\hline \multicolumn{3}{|l|}{DIVIDE 52.6 AC INTO 168 SFR LOTS} & & \\
\hline TR30167 & APPROVED & 05/22/2001 & 20030422 & NA \\
\hline \multicolumn{3}{|l|}{SUBDIVIDE 40 AC INTO 143 RES LOTS/8 OPEN SP LOTS} & & \\
\hline TR30349 & APPROVED & 11/28/2001 & 20030826 & 08/26/2006 \\
\hline \multicolumn{3}{|l|}{SUBDIVIDE 40.19 AC INTO 146 RES LOTS/1 DET BASIN} & & \\
\hline TR30422 & APPROVED & 05/31/2002 & 20030429 & 04/29/2011 \\
\hline \multicolumn{3}{|l|}{TO SUBDIVIDE 399 ACRES INTO 992 LOTS} & & \\
\hline TR30433 & APPROVED & 12/20/2001 & 20051115 & 11/15/2015 \\
\hline \multicolumn{3}{|l|}{SUBD 167 AC INTO 498 RES LOTS \& 33 OPEN SP LOTS} & & \\
\hline TR30441 & APPROVED & 12/13/2001 & 20020416 & NA \\
\hline \multicolumn{3}{|l|}{SUBDIVIDE 39.96 ACRES INTO 125 SFR} & & \\
\hline TR30599 & APPROVED & 11/06/2002 & 20040113 & NA \\
\hline SUBDIVID & 52.93 ACRES & AMILY RES- & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline TR30694 & APPROVED & 11/14/2002 & 20040810 & 08/10/2007 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 33.81 ACRES INTO 81 LOTS} \\
\hline TR30695 & APPROVED & 05/07/2003 & 20041109 & 11/09/2007 \\
\hline \multicolumn{5}{|l|}{SUBD 49.27 AC INTO 111 RES LOTS} \\
\hline TR30696 & APPROVED & 05/07/2003 & 20040810 & 08/10/2009 \\
\hline \multicolumn{5}{|l|}{SCHED A SUBDIVISION OF 173 AC INTO 438 RES LOTS} \\
\hline TR30791 & APPROVED & 12/17/2002 & 20030909 & 09/09/2007 \\
\hline \multicolumn{5}{|l|}{SUBD 20 AC INTO 50 SFR/1 OPEN SPACE/1 PARK SITE} \\
\hline TR30837 & APPROVED & 10/23/2002 & 20041019 & 10/19/2015 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 99.77 ACRES INTO 335 SINGLE FAMILY LOTS} \\
\hline TR30948 & APPROVED & 02/11/2003 & 20030819 & 08/19/2006 \\
\hline \multicolumn{5}{|l|}{SCH"A"SUBDIVISION 79 AC INTO (193)LOTS--SEE\#11---} \\
\hline TR30976 & APPROVED & 03/04/2004 & 20090616 & 06/16/2017 \\
\hline \multicolumn{5}{|l|}{DIVIDE 53.39 AC INTO 162 SFR W/5 OPEN SPACE} \\
\hline TR30977 & APPROVED & 03/10/2004 & 20090616 & 06/16/2017 \\
\hline \multicolumn{5}{|l|}{FOR 414 SFR(7200sq')/12 OS ON 260.5 AC IN SP\# 293} \\
\hline TR30988 & APPROVED & 05/01/2003 & 20040511 & 05/11/2007 \\
\hline \multicolumn{5}{|l|}{TO DIVIDE 80 AC INTO 117 RES LOTS} \\
\hline TR30996 & APPROVED & 12/24/2002 & 20040824 & 08/24/2007 \\
\hline \multicolumn{5}{|l|}{TO DIVIDE 40 AC INTO 74 RES LOTS/1 COMM/3 O/S} \\
\hline TR31007 & APPROVED & 01/23/2003 & 20030819 & NA \\
\hline \multicolumn{5}{|l|}{SCHEDULE "A" MAP DIVIDE 19.1 ACRES INTO 204 CONDO} \\
\hline TR31008 & DRT & 11/27/2002 & 20040413 & 04/13/2016 \\
\hline \multicolumn{5}{|l|}{SCHED A SUBDIVISION OF 160 ACRES INTO 366 SFR LOTS} \\
\hline TR31118 & APPROVED & 05/06/2003 & 20040224 & 02/24/2007 \\
\hline \multicolumn{5}{|l|}{CREATE 133 RESID LOTS \& 2 OPEN SPACE LOTS ON 40.43} \\
\hline TR31119 & APPROVED & 05/06/2003 & 20040127 & 01/27/2007 \\
\hline \multicolumn{5}{|l|}{CREATE 31 LOTS \& 1 DET BASIN ON 20.01 ACRES} \\
\hline TR31119M1 & APPROVED & 12/09/2005 & 20060124 & 01/24/2009 \\
\hline \multicolumn{5}{|l|}{INCREASED TO 32 LOTS FROM 31 DUE TO DETENTION BASI} \\
\hline TR31229 & ANNEXED & 12/04/2003 & 20090722 & NA \\
\hline \multicolumn{5}{|l|}{Proposal for a Schedule A subdivision of 77.15 gro} \\
\hline TR31330 & APPROVED & 06/04/2003 & 20040504 & 05/04/2007 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 29.3 ACRES INTO 86 RES. LOTS, 1 PARK \&} \\
\hline TR31347 & APPROVED & 06/18/2003 & 20040622 & NA \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 21 ACRES INTO 69 SINGLE FAMILY LOTS} \\
\hline TR31383 & APPROVED & 07/15/2003 & 20040629 & 06/29/2007 \\
\hline \multicolumn{5}{|l|}{SCH"A" SUBDIVISION 180 RESIDENTIAL LOTS} \\
\hline TR31629 & APPROVED & 01/09/2004 & 20041109 & NA \\
\hline \multicolumn{5}{|l|}{SCH A SUBDIVISION (115) 7200SF SINGLE FAMILY LOTS} \\
\hline TR31700 & APPROVED & 09/03/2003 & 20060829 & 08/29/2016 \\
\hline \multicolumn{5}{|l|}{SCHED "A" SUBDIVISION OF 20.9 AC INTO 64 SFR LOTS} \\
\hline TR32011 & APPROVED & 03/17/2004 & 20071003 & 10/03/2015 \\
\hline SUBDIVID & 12 AC INTO 3 & OTS - SCHED & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline TR32027 & APPROVED & 08/12/2004 & 20090303 & 03/03/2016 \\
\hline \multicolumn{5}{|l|}{DIVIDE 27.5 ACRES INTO 101 SFR R-1 LOT/SCHEDULE A} \\
\hline TR32049 & APPROVED & 12/23/2003 & 20050509 & 03/01/2008 \\
\hline \multicolumn{5}{|l|}{DIVIDE 18.5 AC INTO 1 LOT FOR 162 CONDO UNTS/3 OS} \\
\hline TR32049M1 & APPROVED & 10/18/2006 & 20070206 & 02/06/2010 \\
\hline \multicolumn{5}{|l|}{ENCROACH W/IN THE 15 ' SB AREA AGAINST OPEN SPACE} \\
\hline TR32151 & APPROVED & 05/13/2004 & 20070313 & 03/13/2017 \\
\hline \multicolumn{5}{|l|}{MULTI-FAMILY SCH"A" SUBDIVISION (136 CONDOMINIUMS)} \\
\hline TR32171 & APPROVED & 02/05/2004 & 20041214 & 12/14/2013 \\
\hline \multicolumn{5}{|l|}{DIVIDE 9.04 AC INTO 56 RES LOTS} \\
\hline TR32185 & APPROVED & 02/18/2004 & 20041130 & 11/30/2018 \\
\hline \multicolumn{5}{|l|}{DIV 163.57 AC INTO 426 SFR LOTS, 32 OPEN SP LOTS} \\
\hline TR32272 & APPROVED & 04/01/2004 & 20060523 & 05/23/2016 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 12 ACRES INTO 38 RES \& 1 DET BASIN LOTS} \\
\hline TR32289 & APPROVED & 08/24/2004 & 20060118 & 01/18/2016 \\
\hline \multicolumn{5}{|l|}{DIV 81.87 ACRES INTO 197 SFR LOTS/SCHEDULE A IN} \\
\hline TR32289M1 & APPROVED & 02/14/2011 & 0 & NA \\
\hline \multicolumn{5}{|l|}{THE MC PROPOSES TO COMBINE LOTS 181-183, 184-197 A} \\
\hline TR32290 & APPROVED & 08/24/2004 & 20060301 & 03/01/2016 \\
\hline \multicolumn{5}{|l|}{DIVIDE 267.40 ACRES INTO 808 SFR LOTS - SCHEDULE A} \\
\hline TR32542 & APPROVED & 05/12/2004 & 20050126 & 01/26/2016 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE INTO 11 SF RES LOTS AND 1 OPEN SPACE LOT} \\
\hline TR33170 & APPROVED & 11/09/2004 & 20060418 & 04/18/2016 \\
\hline \multicolumn{5}{|l|}{CONDO MAP CREATING 24 MULTI-FAMILY LOTS} \\
\hline TR33303 & APPROVED & 09/22/2005 & 20070424 & 04/24/2017 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 7.4 ACRES INTO 24 SFR LOTS} \\
\hline TR33307 & APPROVED & 02/17/2005 & 20060531 & 05/31/2016 \\
\hline \multicolumn{5}{|l|}{DIVIDE 13 AC INTO 41 SFR \& 1 OPEN SPACE LOT} \\
\hline TR33423 & APPROVED & 03/16/2005 & 20070123 & 01/23/2017 \\
\hline \multicolumn{5}{|l|}{DIVIDE 46.15 ACRES INTO 134 SFR LOTS - SCHEDULE A} \\
\hline TR33423M1 & APPROVED & 05/19/2008 & 20090304 & 03/04/2012 \\
\hline \multicolumn{5}{|l|}{REVISING ACCESS' N TO FIELDS \& S TO SALLY STREET} \\
\hline TR34324 & APPROVED & 01/04/2006 & 20061107 & 09/20/2014 \\
\hline \multicolumn{5}{|l|}{11.10 AC/2 LOTS FOR 127 CONDO UNITS/5 OPEN SPACE} \\
\hline TR35161 & APPROVED & 03/14/2008 & 20100622 & 06/22/2017 \\
\hline \multicolumn{5}{|l|}{SCHEDULE 'A' TO DIVIDE 20 ACRES INTO 51 SFR LOTS} \\
\hline TR35664 & APPROVED & 07/13/2007 & 20080624 & 06/24/2015 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 2.31 ACRES INTO (5) 1/2 LOTS} \\
\hline TR36376 & APPROVED & 04/13/2011 & 20120731 & 07/31/2017 \\
\hline \multicolumn{5}{|l|}{SUBDIVIDE 143 AC INTO 446 SFR LOTS-SCHEDULE A MAP} \\
\hline TR36418 & APPROVED & 12/22/2011 & 20131008 & 10/08/2016 \\
\hline \multicolumn{5}{|l|}{SUBDVD 10.06AC INTO 50 SFR LOTS, 1 UTILITY,3 OS LOT} \\
\hline TR36437 & APPROVED & 11/21/2012 & 20140408 & 04/08/2017 \\
\hline SUBDIVID & 40 AC INTO 1 & ULE A MAP & & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|}
\hline CASE NAME & STATUS & APPLIED DATE & APPROVAL DATE & EXPIRED DATE \\
\hline \multicolumn{5}{|l|}{CASE DESCRIPTION} \\
\hline TR36536 & APPROVED & 03/14/2013 & 20140917 & 09/17/2017 \\
\hline \multicolumn{5}{|l|}{84 SINGLE FAMILY DETACHED. SCHEDULE A SUBDIVISION} \\
\hline TR36687 & APPROVED & 04/18/2014 & 20160202 & NA \\
\hline \multicolumn{5}{|l|}{SCHED A SUBDIV OF 20.3 AC INTO 71 RES \& 14 OS LOTS} \\
\hline TR36722 & BOS & 03/25/2014 & 20150602 & NA \\
\hline SCHED A & UBDIV OF 40.6 & \& 22 OS LOT & & \\
\hline
\end{tabular}


\section*{Appendix B. Traffic Counts}

County of Riverside
File Name: CRV79KEAM
N/S: Winchester Road (SR-79)
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1
Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Keller Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Keller Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 07:00 AM & 0 & 212 & 0 & 212 & 2 & 0 & 2 & 4 & 1 & 157 & & 159 & 0 & 0 & 1 & 1 & 376 \\
\hline 07:15 AM & 0 & 290 & 1 & 291 & 3 & 0 & 1 & 4 & 0 & 191 & 1 & 192 & 0 & 1 & 1 & 2 & 489 \\
\hline 07:30 AM & 0 & 314 & 0 & 314 & 2 & 0 & 0 & 2 & 0 & 173 & 0 & 173 & 0 & 0 & 2 & 2 & 491 \\
\hline 07:45 AM & 0 & 242 & 2 & 244 & 1 & 0 & 0 & 1 & 0 & 156 & 1 & 157 & 1 & 0 & 0 & 1 & 403 \\
\hline Total & 0 & 1058 & 3 & 1061 & 8 & 0 & 3 & 11 & 1 & 677 & 3 & 681 & 1 & 1 & 4 & 6 & 1759 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 08:00 AM & 0 & 240 & 0 & 240 & 1 & 0 & 0 & 1 & 0 & 125 & 2 & 127 & 0 & 0 & 0 & 0 & 368 \\
\hline 08:15 AM & 0 & 174 & 0 & 174 & 0 & 0 & 0 & 0 & 0 & 127 & 2 & 129 & 0 & 0 & 0 & 0 & 303 \\
\hline 08:30 AM & 1 & 197 & 1 & 199 & 0 & 0 & 0 & 0 & 1 & 125 & 4 & 130 & 0 & 0 & 0 & 0 & 329 \\
\hline 08:45 AM & 0 & 162 & 0 & 162 & 2 & 0 & 1 & 3 & 0 & 140 & 5 & 145 & 0 & 0 & 0 & 0 & 310 \\
\hline Total & 1 & 773 & 1 & 775 & 3 & 0 & 1 & 4 & 1 & 517 & 13 & 531 & 0 & 0 & 0 & 0 & 1310 \\
\hline Grand Total & 1 & 1831 & 4 & 1836 & 11 & 0 & 4 & 15 & 2 & 1194 & 16 & 1212 & 1 & 1 & 4 & 6 & 3069 \\
\hline Apprch \% & 0.1 & 99.7 & 0.2 & & 73.3 & 0 & 26.7 & & 0.2 & 98.5 & 1.3 & & 16.7 & 16.7 & 66.7 & & \\
\hline Total \% & 0 & 59.7 & 0.1 & 59.8 & 0.4 & 0 & 0.1 & 0.5 & 0.1 & 38.9 & 0.5 & 39.5 & 0 & 0 & 0.1 & 0.2 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Keller Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Keller Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 07:00 AM} \\
\hline 07:00 AM & 0 & 212 & 0 & 212 & 2 & 0 & 2 & 4 & 1 & 157 & 1 & 159 & 0 & 0 & 1 & 1 & 376 \\
\hline 07:15 AM & 0 & 290 & 1 & 291 & 3 & 0 & 1 & 4 & 0 & 191 & 1 & 192 & 0 & 1 & 1 & 2 & 489 \\
\hline 07:30 AM & 0 & 314 & 0 & 314 & 2 & 0 & 0 & 2 & 0 & 173 & 0 & 173 & 0 & 0 & 2 & 2 & 491 \\
\hline 07:45 AM & 0 & 242 & 2 & 244 & 1 & 0 & 0 & 1 & 0 & 156 & 1 & 157 & 1 & 0 & 0 & 1 & 403 \\
\hline Total Volume & 0 & 1058 & 3 & 1061 & 8 & 0 & 3 & 11 & 1 & 677 & 3 & 681 & 1 & 1 & 4 & 6 & 1759 \\
\hline \% App. Total & 0 & 99.7 & 0.3 & & 72.7 & 0 & 27.3 & & 0.1 & 99.4 & 0.4 & & 16.7 & 16.7 & 66.7 & & \\
\hline PHF & . 000 & . 842 & . 375 & . 845 & . 667 & . 000 & . 375 & . 688 & . 250 & . 886 & . 750 & . 887 & . 250 & . 250 & . 500 & . 750 & . 896 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Keller Road
Weather: Clear

File Name : CRV79KEAM
Site Code : 22116465
Start Date : 9/14/2016
Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{07:15 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:00 AM} \\
\hline +0 mins. & 0 & 290 & 1 & 291 & 2 & 0 & 2 & 4 & 1 & 157 & 1 & 159 & 0 & 0 & 1 & 1 \\
\hline +15 mins. & 0 & 314 & 0 & 314 & 3 & 0 & 1 & 4 & 0 & 191 & 1 & 192 & 0 & 1 & 1 & 2 \\
\hline +30 mins. & 0 & 242 & 2 & 244 & 2 & 0 & 0 & 2 & 0 & 173 & 0 & 173 & 0 & 0 & 2 & 2 \\
\hline +45 mins. & 0 & 240 & 0 & 240 & 1 & 0 & 0 & 1 & 0 & 156 & 1 & 157 & 1 & 0 & 0 & 1 \\
\hline Total Volume & 0 & 1086 & 3 & 1089 & 8 & 0 & 3 & 11 & 1 & 677 & 3 & 681 & 1 & 1 & 4 & 6 \\
\hline \% App. Total & 0 & 99.7 & 0.3 & & 72.7 & 0 & 27.3 & & 0.1 & 99.4 & 0.4 & & 16.7 & 16.7 & 66.7 & \\
\hline PHF & . 000 & . 865 & . 375 & . 867 & . 667 & . 000 & . 375 & . 688 & . 250 & . 886 & . 750 & . 887 & . 250 & . 250 & . 500 & . 750 \\
\hline
\end{tabular}

County of Riverside
N/S: SR-79 (Winchester)
E/W: Keller Road
Weather: Clear

File Name : CRV79KEPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{\begin{tabular}{l}
SR-79 \\
Southbound
\end{tabular}} & \multicolumn{4}{|c|}{Keller Road Westbound} & \multicolumn{4}{|c|}{\begin{tabular}{l}
SR-79 \\
Northbound
\end{tabular}} & \multicolumn{4}{|c|}{Keller Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 02:00 PM & 2 & 122 & 1 & 125 & 0 & 0 & 0 & 0 & 0 & 225 & 1 & 226 & 0 & 0 & 1 & 1 & 352 \\
\hline 02:15 PM & 0 & 144 & 1 & 145 & 2 & 0 & 0 & 2 & 0 & 207 & 1 & 208 & 0 & 0 & 0 & 0 & 355 \\
\hline 02:30 PM & 0 & 177 & 1 & 178 & 0 & 0 & 0 & 0 & 2 & 202 & 4 & 208 & 1 & 0 & 1 & 2 & 388 \\
\hline 02:45 PM & 0 & 146 & 1 & 147 & 3 & 0 & 0 & 3 & 0 & 220 & 3 & 223 & 0 & 0 & 1 & 1 & 374 \\
\hline Total & 2 & 589 & 4 & 595 & 5 & 0 & 0 & 5 & 2 & 854 & 9 & 865 & 1 & 0 & 3 & 4 & 1469 \\
\hline 03:00 PM & 1 & 149 & 1 & 151 & 1 & 0 & 1 & 2 & 1 & 198 & 0 & 199 & 0 & 0 & 1 & 1 & 353 \\
\hline 03:15 PM & 1 & 124 & 0 & 125 & 3 & 0 & 0 & 3 & 2 & 243 & 2 & 247 & 1 & 0 & 2 & 3 & 378 \\
\hline 03:30 PM & 1 & 160 & 0 & 161 & 2 & 0 & 0 & 2 & 0 & 227 & 3 & 230 & 0 & 0 & 0 & 0 & 393 \\
\hline 03:45 PM & 0 & 167 & 2 & 169 & 0 & 0 & 0 & 0 & 1 & 265 & 3 & 269 & 0 & 0 & 1 & 1 & 439 \\
\hline Total & 3 & 600 & 3 & 606 & 6 & 0 & 1 & 7 & 4 & 933 & 8 & 945 & 1 & 0 & 4 & 5 & 1563 \\
\hline 04:00 PM & 1 & 191 & 0 & 192 & 0 & 0 & 1 & 1 & 1 & 285 & 1 & 287 & 2 & 2 & 0 & 4 & 484 \\
\hline 04:15 PM & 0 & 199 & 0 & 199 & 1 & 0 & 0 & 1 & 1 & 283 & 1 & 285 & 0 & 0 & 0 & 0 & 485 \\
\hline 04:30 PM & 0 & 230 & 0 & 230 & 0 & 0 & 0 & 0 & 0 & 289 & 0 & 289 & 0 & 0 & 1 & 1 & 520 \\
\hline 04:45 PM & 1 & 193 & 1 & 195 & 2 & 0 & 0 & 2 & 2 & 283 & 1 & 286 & 0 & 0 & 0 & 0 & 483 \\
\hline Total & 2 & 813 & 1 & 816 & 3 & 0 & 1 & 4 & 4 & 1140 & 3 & 1147 & 2 & 2 & 1 & 5 & 1972 \\
\hline 05:00 PM & 0 & 200 & 1 & 201 & 2 & 0 & 0 & 2 & 1 & 266 & 1 & 268 & 1 & 1 & 0 & 2 & 473 \\
\hline 05:15 PM & 0 & 200 & 0 & 200 & 0 & 0 & 0 & 0 & 0 & 283 & 1 & 284 & 0 & 0 & 1 & 1 & 485 \\
\hline 05:30 PM & 1 & 218 & 0 & 219 & 0 & 0 & 0 & 0 & 0 & 261 & 3 & 264 & 0 & 0 & 0 & 0 & 483 \\
\hline 05:45 PM & 0 & 181 & 0 & 181 & 3 & 0 & 1 & 4 & 0 & 238 & 3 & 241 & 0 & 0 & 0 & 0 & 426 \\
\hline Total & 1 & 799 & 1 & 801 & 5 & 0 & 1 & 6 & 1 & 1048 & 8 & 1057 & 1 & 1 & 1 & 3 & 1867 \\
\hline Grand Total & 8 & 2801 & 9 & 2818 & 19 & 0 & 3 & 22 & 11 & 3975 & 28 & 4014 & 5 & 3 & 9 & 17 & 6871 \\
\hline Apprch \% & 0.3 & 99.4 & 0.3 & & 86.4 & 0 & 13.6 & & 0.3 & 99 & 0.7 & & 29.4 & 17.6 & 52.9 & & \\
\hline Total \% & 0.1 & 40.8 & 0.1 & 41 & 0.3 & 0 & 0 & 0.3 & 0.2 & 57.9 & 0.4 & 58.4 & 0.1 & 0 & 0.1 & 0.2 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{\begin{tabular}{l}
SR-79 \\
Southbound
\end{tabular}} & \multicolumn{4}{|c|}{Keller Road Westbound} & \multicolumn{4}{|c|}{\begin{tabular}{l}
SR-79 \\
Northbound
\end{tabular}} & \multicolumn{4}{|c|}{Keller Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 04:00 PM} \\
\hline 04:00 PM & 1 & 191 & 0 & 192 & 0 & 0 & 1 & 1 & 1 & 285 & 1 & 287 & 2 & 2 & 0 & 4 & 484 \\
\hline 04:15 PM & 0 & 199 & 0 & 199 & 1 & 0 & 0 & 1 & 1 & 283 & 1 & 285 & 0 & 0 & 0 & 0 & 485 \\
\hline 04:30 PM & 0 & 230 & 0 & 230 & 0 & 0 & 0 & 0 & 0 & 289 & 0 & 289 & 0 & 0 & 1 & 1 & 520 \\
\hline 04:45 PM & 1 & 193 & 1 & 195 & 2 & 0 & 0 & 2 & 2 & 283 & 1 & 286 & 0 & 0 & 0 & 0 & 483 \\
\hline Total Volume & 2 & 813 & 1 & 816 & 3 & 0 & 1 & 4 & 4 & 1140 & 3 & 1147 & 2 & 2 & 1 & 5 & 1972 \\
\hline \% App. Total & 0.2 & 99.6 & 0.1 & & 75 & 0 & 25 & & 0.3 & 99.4 & 0.3 & & 40 & 40 & 20 & & \\
\hline PHF & . 500 & . 884 & . 250 & . 887 & . 375 & . 000 & . 250 & . 500 & . 500 & . 986 & . 750 & . 992 & . 250 & 250 & . 250 & . 313 & . 948 \\
\hline
\end{tabular}

County of Riverside
N/S: SR-79 (Winchester)
E/W: Keller Road
Weather: Clear

File Name : CRV79KEPM
Site Code : 22116465
Start Date : 9/14/2016
Page No : 2


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{04:30 PM} & \multicolumn{4}{|l|}{02:45 PM} & \multicolumn{4}{|l|}{04:00 PM} & \multicolumn{4}{|l|}{03:15 PM} \\
\hline +0 mins. & 0 & 230 & 0 & 230 & 3 & 0 & 0 & 3 & 1 & 285 & 1 & 287 & 1 & 0 & 2 & 3 \\
\hline +15 mins. & 1 & 193 & 1 & 195 & 1 & 0 & 1 & 2 & 1 & 283 & 1 & 285 & 0 & 0 & 0 & 0 \\
\hline +30 mins. & 0 & 200 & 1 & 201 & 3 & 0 & 0 & 3 & 0 & 289 & 0 & 289 & 0 & 0 & 1 & 1 \\
\hline +45 mins. & 0 & 200 & 0 & 200 & 2 & 0 & 0 & 2 & 2 & 283 & 1 & 286 & 2 & 2 & 0 & 4 \\
\hline Total Volume & 1 & 823 & 2 & 826 & 9 & 0 & 1 & 10 & 4 & 1140 & 3 & 1147 & 3 & 2 & 3 & 8 \\
\hline \% App. Total & 0.1 & 99.6 & 0.2 & & 90 & 0 & 10 & & 0.3 & 99.4 & 0.3 & & 37.5 & 25 & 37.5 & \\
\hline PHF & . 250 & . 895 & . 500 & . 898 & . 750 & . 000 & . 250 & . 833 & . 500 & . 986 & . 750 & . 992 & . 375 & . 250 & . 375 & . 500 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79) E/W: Pourroy Road/Abelia Street Weather: Clear

File Name: CRV79POAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Abelia Street Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Pourroy Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 07:00 AM & 19 & 186 & 12 & 217 & 45 & 5 & 19 & 69 & 2 & 139 & 51 & 192 & 5 & 3 & 9 & 17 & 495 \\
\hline 07:15 AM & 8 & 259 & 30 & 297 & 50 & 1 & 20 & 71 & 7 & 159 & 34 & 200 & 12 & 3 & 7 & 22 & 590 \\
\hline 07:30 AM & 16 & 297 & 10 & 323 & 40 & 3 & 8 & 51 & 12 & 158 & 35 & 205 & 15 & 3 & 10 & 28 & 607 \\
\hline 07:45 AM & 26 & 215 & 3 & 244 & 41 & 3 & 11 & 55 & 3 & 145 & 42 & 190 & 6 & 5 & 5 & 16 & 505 \\
\hline Total & 69 & 957 & 55 & 1081 & 176 & 12 & 58 & 246 & 24 & 601 & 162 & 787 & 38 & 14 & 31 & 83 & 2197 \\
\hline 08:00 AM & 9 & 231 & 2 & 242 & 44 & 3 & 18 & 65 & 2 & 101 & 29 & 132 & 6 & 0 & 5 & 11 & 450 \\
\hline 08:15 AM & 4 & 175 & 2 & 181 & 44 & 0 & 9 & 53 & 3 & 118 & 19 & 140 & 2 & 2 & 5 & 9 & 383 \\
\hline 08:30 AM & 8 & 181 & 2 & 191 & 28 & 0 & 6 & 34 & 4 & 123 & 17 & 144 & 1 & , & 4 & 6 & 375 \\
\hline 08:45 AM & 7 & 161 & 2 & 170 & 21 & 2 & 10 & 33 & 3 & 140 & 21 & 164 & 3 & 1 & 6 & 10 & 377 \\
\hline Total & 28 & 748 & 8 & 784 & 137 & 5 & 43 & 185 & 12 & 482 & 86 & 580 & 12 & 4 & 20 & 36 & 1585 \\
\hline Grand Total & 97 & 1705 & 63 & 1865 & 313 & 17 & 101 & 431 & 36 & 1083 & 248 & 1367 & 50 & 18 & 51 & 119 & 3782 \\
\hline Apprch \% & 5.2 & 91.4 & 3.4 & & 72.6 & 3.9 & 23.4 & & 2.6 & 79.2 & 18.1 & & 42 & 15.1 & 42.9 & & \\
\hline Total \% & 2.6 & 45.1 & 1.7 & 49.3 & 8.3 & 0.4 & 2.7 & 11.4 & 1 & 28.6 & 6.6 & 36.1 & 1.3 & 0.5 & 1.3 & 3.1 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Abelia Street Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Pourroy Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 07:00 AM} \\
\hline 07:00 AM & 19 & 186 & 12 & 217 & 45 & 5 & 19 & 69 & 2 & 139 & 51 & 192 & 5 & 3 & 9 & 17 & 495 \\
\hline 07:15 AM & 8 & 259 & 30 & 297 & 50 & 1 & 20 & 71 & 7 & 159 & 34 & 200 & 12 & 3 & 7 & 22 & 590 \\
\hline 07:30 AM & 16 & 297 & 10 & 323 & 40 & 3 & 8 & 51 & 12 & 158 & 35 & 205 & 15 & 3 & 10 & 28 & 607 \\
\hline 07:45 AM & 26 & 215 & 3 & 244 & 41 & 3 & 11 & 55 & 3 & 145 & 42 & 190 & 6 & 5 & 5 & 16 & 505 \\
\hline Total Volume & 69 & 957 & 55 & 1081 & 176 & 12 & 58 & 246 & 24 & 601 & 162 & 787 & 38 & 14 & 31 & 83 & 2197 \\
\hline \% App. Total & 6.4 & 88.5 & 5.1 & & 71.5 & 4.9 & 23.6 & & 3 & 76.4 & 20.6 & & 45.8 & 16.9 & 37.3 & & \\
\hline PHF & . 663 & . 806 & . 458 & . 837 & . 880 & . 600 & . 725 & . 866 & . 500 & . 945 & . 794 & . 960 & . 633 & . 700 & . 775 & . 741 & . 905 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Pourroy Road/Abelia Street
Weather: Clear

File Name: CRV79POAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{07:15 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:00 AM} \\
\hline +0 mins. & 8 & 259 & 30 & 297 & 45 & 5 & 19 & 69 & 2 & 139 & 51 & 192 & 5 & 3 & 9 & 17 \\
\hline +15 mins. & 16 & 297 & 10 & 323 & 50 & 1 & 20 & 71 & 7 & 159 & 34 & 200 & 12 & 3 & 7 & 22 \\
\hline +30 mins. & 26 & 215 & 3 & 244 & 40 & 3 & 8 & 51 & 12 & 158 & 35 & 205 & 15 & 3 & 10 & 28 \\
\hline +45 mins. & 9 & 231 & 2 & 242 & 41 & 3 & 11 & 55 & 3 & 145 & 42 & 190 & 6 & 5 & 5 & 16 \\
\hline Total Volume & 59 & 1002 & 45 & 1106 & 176 & 12 & 58 & 246 & 24 & 601 & 162 & 787 & 38 & 14 & 31 & 83 \\
\hline \% App. Total & 5.3 & 90.6 & 4.1 & & 71.5 & 4.9 & 23.6 & & 3 & 76.4 & 20.6 & & 45.8 & 16.9 & 37.3 & \\
\hline PHF & . 567 & . 843 & . 375 & . 856 & . 880 & . 600 & . 725 & . 866 & . 500 & . 945 & . 794 & . 960 & 633 & . 700 & . 775 & . 741 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Pourroy Road/Abelia Street
Weather: Clear

File Name: CRV79POPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Abelia Street Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Pourroy Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 02:00 PM & 13 & 105 & 5 & 123 & 27 & 1 & 13 & 41 & 6 & 208 & 36 & 250 & 9 & 2 & 15 & 26 & 440 \\
\hline 02:15 PM & 4 & 132 & 1 & 137 & 30 & 3 & 11 & 44 & 2 & 178 & 44 & 224 & 25 & 5 & 10 & 40 & 445 \\
\hline 02:30 PM & 11 & 166 & 1 & 178 & 28 & 2 & 11 & 41 & 2 & 186 & 29 & 217 & 4 & 4 & 3 & 11 & 447 \\
\hline 02:45 PM & 13 & 131 & 3 & 147 & 36 & 1 & 6 & 43 & 7 & 213 & 32 & 252 & 5 & 1 & 4 & 10 & 452 \\
\hline Total & 41 & 534 & 10 & 585 & 121 & 7 & 41 & 169 & 17 & 785 & 141 & 943 & 43 & 12 & 32 & 87 & 1784 \\
\hline 03:00 PM & 7 & 141 & 3 & 151 & 28 & 1 & 15 & 44 & 1 & 181 & 23 & 205 & 4 & 2 & 5 & 11 & 411 \\
\hline 03:15 PM & 8 & 118 & 1 & 127 & 27 & 2 & 6 & 35 & 3 & 231 & 26 & 260 & 2 & 2 & 3 & 7 & 429 \\
\hline 03:30 PM & 10 & 152 & 3 & 165 & 31 & 3 & 8 & 42 & 5 & 223 & 46 & 274 & 2 & 3 & 5 & 10 & 491 \\
\hline 03:45 PM & 9 & 152 & 2 & 163 & 27 & 1 & 8 & 36 & 3 & 251 & 41 & 295 & 2 & 2 & 4 & 8 & 502 \\
\hline Total & 34 & 563 & 9 & 606 & 113 & 7 & 37 & 157 & 12 & 886 & 136 & 1034 & 10 & 9 & 17 & 36 & 1833 \\
\hline 04:00 PM & 9 & 185 & 6 & 200 & 25 & 2 & 6 & 33 & 5 & 282 & 43 & 330 & 5 & 2 & 6 & 13 & 576 \\
\hline 04:15 PM & 6 & 194 & 6 & 206 & 17 & 2 & 5 & 24 & 1 & 270 & 32 & 303 & 3 & 1 & 4 & 8 & 541 \\
\hline 04:30 PM & 14 & 208 & 2 & 224 & 28 & 2 & 12 & 42 & 2 & 281 & 30 & 313 & 1 & 0 & 0 & 1 & 580 \\
\hline 04:45 PM & 5 & 191 & 1 & 197 & 20 & 1 & 1 & 22 & 7 & 283 & 29 & 319 & 5 & 2 & 7 & 14 & 552 \\
\hline Total & 34 & 778 & 15 & 827 & 90 & 7 & 24 & 121 & 15 & 1116 & 134 & 1265 & 14 & 5 & 17 & 36 & 2249 \\
\hline 05:00 PM & 11 & 190 & 3 & 204 & 20 & 3 & 18 & 41 & 4 & 254 & 36 & 294 & 1 & 2 & 6 & 9 & 548 \\
\hline 05:15 PM & 13 & 190 & 3 & 206 & 27 & 2 & 14 & 43 & 2 & 265 & 36 & 303 & 3 & 2 & 3 & 8 & 560 \\
\hline 05:30 PM & 9 & 206 & 6 & 221 & 21 & 1 & 9 & 31 & 8 & 242 & 28 & 278 & 3 & 0 & 5 & 8 & 538 \\
\hline 05:45 PM & 16 & 168 & 3 & 187 & 16 & 0 & 13 & 29 & 7 & 222 & 36 & 265 & 2 & 0 & 7 & 9 & 490 \\
\hline Total & 49 & 754 & 15 & 818 & 84 & 6 & 54 & 144 & 21 & 983 & 136 & 1140 & 9 & 4 & 21 & 34 & 2136 \\
\hline Grand Total & 158 & 2629 & 49 & 2836 & 408 & 27 & 156 & 591 & 65 & 3770 & 547 & 4382 & 76 & 30 & 87 & 193 & 8002 \\
\hline Apprch \% & 5.6 & 92.7 & 1.7 & & 69 & 4.6 & 26.4 & & 1.5 & 86 & 12.5 & & 39.4 & 15.5 & 45.1 & & \\
\hline Total \% & 2 & 32.9 & 0.6 & 35.4 & 5.1 & 0.3 & 1.9 & 7.4 & 0.8 & 47.1 & 6.8 & 54.8 & 0.9 & 0.4 & 1.1 & 2.4 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Abelia Street Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Pourroy Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 04:00 PM} \\
\hline 04:00 PM & 9 & 185 & 6 & 200 & 25 & 2 & 6 & 33 & 5 & 282 & 43 & 330 & 5 & 2 & 6 & 13 & 576 \\
\hline 04:15 PM & 6 & 194 & 6 & 206 & 17 & 2 & 5 & 24 & 1 & 270 & 32 & 303 & 3 & 1 & 4 & 8 & 541 \\
\hline 04:30 PM & 14 & 208 & 2 & 224 & 28 & 2 & 12 & 42 & 2 & 281 & 30 & 313 & 1 & 0 & 0 & 1 & 580 \\
\hline 04:45 PM & 5 & 191 & 1 & 197 & 20 & 1 & 1 & 22 & 7 & 283 & 29 & 319 & 5 & 2 & 7 & 14 & 552 \\
\hline Total Volume & 34 & 778 & 15 & 827 & 90 & 7 & 24 & 121 & 15 & 1116 & 134 & 1265 & 14 & 5 & 17 & 36 & 2249 \\
\hline \% App. Total & 4.1 & 94.1 & 1.8 & & 74.4 & 5.8 & 19.8 & & 1.2 & 88.2 & 10.6 & & 38.9 & 13.9 & 47.2 & & \\
\hline PHF & . 607 & . 935 & . 625 & . 923 & . 804 & . 875 & . 500 & . 720 & . 536 & . 986 & . 779 & . 958 & . 700 & . 625 & . 607 & 643 & . 969 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Pourroy Road/Abelia Street
Weather: Clear

File Name : CRV79POPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 2


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{04:15 PM} & \multicolumn{4}{|l|}{02:15 PM} & \multicolumn{4}{|l|}{04:00 PM} & \multicolumn{4}{|l|}{02:00 PM} \\
\hline +0 mins. & 6 & 194 & 6 & 206 & 30 & 3 & 11 & 44 & 5 & 282 & 43 & 330 & 9 & 2 & 15 & 26 \\
\hline +15 mins. & 14 & 208 & 2 & 224 & 28 & 2 & 11 & 41 & 1 & 270 & 32 & 303 & 25 & 5 & 10 & 40 \\
\hline +30 mins. & 5 & 191 & 1 & 197 & 36 & 1 & 6 & 43 & 2 & 281 & 30 & 313 & 4 & 4 & 3 & 11 \\
\hline +45 mins. & 11 & 190 & 3 & 204 & 28 & 1 & 15 & 44 & 7 & 283 & 29 & 319 & 5 & 1 & 4 & 10 \\
\hline Total Volume & 36 & 783 & 12 & 831 & 122 & 7 & 43 & 172 & 15 & 1116 & 134 & 1265 & 43 & 12 & 32 & 87 \\
\hline \% App. Total & 4.3 & 94.2 & 1.4 & & 70.9 & 4.1 & 25 & & 1.2 & 88.2 & 10.6 & & 49.4 & 13.8 & 36.8 & \\
\hline PHF & . 643 & . 941 & . 500 & . 927 & . 847 & . 583 & . 717 & . 977 & . 536 & . 986 & . 779 & . 958 & . 430 & . 600 & . 533 & . 544 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Whisper Heights/Pourroy Road
Weather: Clear

File Name: CRV79WHAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Pourroy Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Whisper Heights Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 07:00 AM & 15 & 228 & 2 & 245 & 46 & 7 & 25 & 78 & 6 & 166 & 26 & 198 & 5 & 1 & 1 & 7 & 528 \\
\hline 07:15 AM & 9 & 301 & 6 & 316 & 41 & 9 & 21 & 71 & 8 & 173 & 17 & 198 & 2 & 2 & 4 & 8 & 593 \\
\hline 07:30 AM & 7 & 342 & 3 & 352 & 29 & 3 & 19 & 51 & 7 & 179 & 22 & 208 & 6 & 6 & 3 & 15 & 626 \\
\hline 07:45 AM & 15 & 248 & 1 & 264 & 28 & 1 & 11 & 40 & 1 & 183 & 9 & 193 & 4 & 1 & 4 & 9 & 506 \\
\hline Total & 46 & 1119 & 12 & 1177 & 144 & 20 & 76 & 240 & 22 & 701 & 74 & 797 & 17 & 10 & 12 & 39 & 2253 \\
\hline 08:00 AM & 11 & 268 & 2 & 281 & 43 & 5 & 8 & 56 & 2 & 110 & 17 & 129 & 4 & 7 & 18 & 29 & 495 \\
\hline 08:15 AM & 9 & 206 & 2 & 217 & 31 & 1 & 7 & 39 & 1 & 127 & 19 & 147 & 0 & 2 & 7 & 9 & 412 \\
\hline 08:30 AM & 20 & 197 & 1 & 218 & 36 & 5 & 16 & 57 & 1 & 121 & 9 & 131 & 0 & 8 & 1 & 9 & 415 \\
\hline 08:45 AM & 7 & 183 & 1 & 191 & 37 & 7 & 39 & 83 & 0 & 131 & 13 & 144 & 0 & 4 & 5 & 9 & 427 \\
\hline Total & 47 & 854 & 6 & 907 & 147 & 18 & 70 & 235 & 4 & 489 & 58 & 551 & 4 & 21 & 31 & 56 & 1749 \\
\hline Grand Total & 93 & 1973 & 18 & 2084 & 291 & 38 & 146 & 475 & 26 & 1190 & 132 & 1348 & 21 & 31 & 43 & 95 & 4002 \\
\hline Apprch \% & 4.5 & 94.7 & 0.9 & & 61.3 & 8 & 30.7 & & 1.9 & 88.3 & 9.8 & & 22.1 & 32.6 & 45.3 & & \\
\hline Total \% & 2.3 & 49.3 & 0.4 & 52.1 & 7.3 & 0.9 & 3.6 & 11.9 & 0.6 & 29.7 & 3.3 & 33.7 & 0.5 & 0.8 & 1.1 & 2.4 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Pourroy Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Whisper Heights Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 07:00 AM} \\
\hline 07:00 AM & 15 & 228 & 2 & 245 & 46 & 7 & 25 & 78 & 6 & 166 & 26 & 198 & 5 & 1 & 1 & 7 & 528 \\
\hline 07:15 AM & 9 & 301 & 6 & 316 & 41 & 9 & 21 & 71 & 8 & 173 & 17 & 198 & 2 & 2 & 4 & 8 & 593 \\
\hline 07:30 AM & 7 & 342 & 3 & 352 & 29 & 3 & 19 & 51 & 7 & 179 & 22 & 208 & 6 & & 3 & 15 & 626 \\
\hline 07:45 AM & 15 & 248 & 1 & 264 & 28 & 1 & 11 & 40 & 1 & 183 & 9 & 193 & 4 & 1 & 4 & 9 & 506 \\
\hline Total Volume & 46 & 1119 & 12 & 1177 & 144 & 20 & 76 & 240 & 22 & 701 & 74 & 797 & 17 & 10 & 12 & 39 & 2253 \\
\hline \% App. Total & 3.9 & 95.1 & 1 & & 60 & 8.3 & 31.7 & & 2.8 & 88 & 9.3 & & 43.6 & 25.6 & 30.8 & & \\
\hline PHF & . 767 & . 818 & . 500 & . 836 & . 783 & . 556 & . 760 & . 769 & . 688 & . 958 & . 712 & . 958 & . 708 & . 417 & . 750 & 650 & . 900 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Whisper Heights/Pourroy Road
Weather: Clear

File Name: CRV79WHAM
Site Code : 22116465
Start Date : 9/14/2016
Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{07:15 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:30 AM} \\
\hline +0 mins. & 9 & 301 & 6 & 316 & 46 & 7 & 25 & 78 & 6 & 166 & 26 & 198 & 6 & 6 & 3 & 15 \\
\hline +15 mins. & 7 & 342 & 3 & 352 & 41 & 9 & 21 & 71 & 8 & 173 & 17 & 198 & 4 & 1 & 4 & 9 \\
\hline +30 mins. & 15 & 248 & 1 & 264 & 29 & 3 & 19 & 51 & 7 & 179 & 22 & 208 & 4 & 7 & 18 & 29 \\
\hline +45 mins. & 11 & 268 & 2 & 281 & 28 & 1 & 11 & 40 & 1 & 183 & 9 & 193 & 0 & 2 & 7 & 9 \\
\hline Total Volume & 42 & 1159 & 12 & 1213 & 144 & 20 & 76 & 240 & 22 & 701 & 74 & 797 & 14 & 16 & 32 & 62 \\
\hline \% App. Total & 3.5 & 95.5 & 1 & & 60 & 8.3 & 31.7 & & 2.8 & 88 & 9.3 & & 22.6 & 25.8 & 51.6 & \\
\hline PHF & . 700 & . 847 & . 500 & . 862 & . 783 & 556 & . 760 & . 769 & . 688 & . 958 & 712 & . 958 & . 583 & . 571 & . 444 & . 534 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Whisper Heights/Pourroy Road
Weather: Clear

File Name: CRV79WHPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Pourroy Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Whisper Heights Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 02:00 PM & 9 & 130 & 5 & 144 & 23 & 3 & 13 & 39 & 1 & 230 & 15 & 246 & 6 & 3 & 3 & 12 & 441 \\
\hline 02:15 PM & 9 & 161 & 5 & 175 & 19 & 1 & 8 & 28 & 3 & 221 & 23 & 247 & 3 & 2 & 3 & 8 & 458 \\
\hline 02:30 PM & 17 & 173 & 5 & 195 & 27 & 4 & 11 & 42 & 3 & 202 & 17 & 222 & 2 & 3 & 6 & 11 & 470 \\
\hline 02:45 PM & 15 & 159 & & 175 & 21 & 1 & 16 & 38 & 2 & 231 & 48 & 281 & 3 & 4 & 1 & 8 & 502 \\
\hline Total & 50 & 623 & 16 & 689 & 90 & 9 & 48 & 147 & 9 & 884 & 103 & 996 & 14 & 12 & 13 & 39 & 1871 \\
\hline 03:00 PM & 15 & 150 & 3 & 168 & 16 & 1 & 15 & 32 & 2 & 186 & 28 & 216 & 1 & 5 & 1 & 7 & 423 \\
\hline 03:15 PM & 12 & 130 & 3 & 145 & 11 & 0 & 18 & 29 & 3 & 246 & 30 & 279 & 2 & 1 & 3 & 6 & 459 \\
\hline 03:30 PM & 17 & 173 & 0 & 190 & 28 & 10 & 21 & 59 & 4 & 246 & 31 & 281 & 0 & 2 & 2 & 4 & 534 \\
\hline 03:45 PM & 13 & 164 & 3 & 180 & 23 & 4 & 18 & 45 & 2 & 269 & 38 & 309 & 1 & 5 & 0 & 6 & 540 \\
\hline Total & 57 & 617 & 9 & 683 & 78 & 15 & 72 & 165 & 11 & 947 & 127 & 1085 & 4 & 13 & 6 & 23 & 1956 \\
\hline 04:00 PM & 21 & 196 & 6 & 223 & 32 & 11 & 15 & 58 & 12 & 317 & 50 & 379 & 3 & 1 & 4 & 8 & 668 \\
\hline 04:15 PM & 24 & 191 & 1 & 216 & 32 & 8 & 14 & 54 & 6 & 295 & 33 & 334 & 1 & 5 & 8 & 14 & 618 \\
\hline 04:30 PM & 19 & 214 & 0 & 233 & 23 & 5 & 17 & 45 & 2 & 299 & 42 & 343 & 1 & 4 & 8 & 13 & 634 \\
\hline 04:45 PM & 19 & 197 & 1 & 217 & 30 & 2 & 12 & 44 & 3 & 296 & 46 & 345 & 1 & 4 & 4 & 9 & 615 \\
\hline Total & 83 & 798 & 8 & 889 & 117 & 26 & 58 & 201 & 23 & 1207 & 171 & 1401 & 6 & 14 & 24 & 44 & 2535 \\
\hline 05:00 PM & 16 & 205 & 2 & 223 & 33 & 5 & 12 & 50 & 1 & 288 & 32 & 321 & 2 & 0 & 2 & 4 & 598 \\
\hline 05:15 PM & 17 & 205 & 4 & 226 & 43 & 10 & 32 & 85 & 6 & 263 & 25 & 294 & 3 & 4 & 2 & 9 & 614 \\
\hline 05:30 PM & 23 & 203 & 4 & 230 & 28 & 3 & 16 & 47 & 7 & 254 & 51 & 312 & 6 & 9 & 13 & 28 & 617 \\
\hline 05:45 PM & 22 & 162 & 15 & 199 & 21 & 3 & 11 & 35 & 5 & 247 & 38 & 290 & 8 & 8 & 8 & 24 & 548 \\
\hline Total & 78 & 775 & 25 & 878 & 125 & 21 & 71 & 217 & 19 & 1052 & 146 & 1217 & 19 & 21 & 25 & 65 & 2377 \\
\hline Grand Total & 268 & 2813 & 58 & 3139 & 410 & 71 & 249 & 730 & 62 & 4090 & 547 & 4699 & 43 & 60 & 68 & 171 & 8739 \\
\hline Apprch \% & 8.5 & 89.6 & 1.8 & & 56.2 & 9.7 & 34.1 & & 1.3 & 87 & 11.6 & & 25.1 & 35.1 & 39.8 & & \\
\hline Total \% & 3.1 & 32.2 & 0.7 & 35.9 & 4.7 & 0.8 & 2.8 & 8.4 & 0.7 & 46.8 & 6.3 & 53.8 & 0.5 & 0.7 & 0.8 & 2 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Pourroy Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Whisper Heights Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 04:00 PM} \\
\hline 04:00 PM & 21 & 196 & 6 & 223 & 32 & 11 & 15 & 58 & 12 & 317 & 50 & 379 & 3 & 1 & 4 & 8 & 668 \\
\hline 04:15 PM & 24 & 191 & 1 & 216 & 32 & 8 & 14 & 54 & 6 & 295 & 33 & 334 & 1 & 5 & 8 & 14 & 618 \\
\hline 04:30 PM & 19 & 214 & 0 & 233 & 23 & 5 & 17 & 45 & 2 & 299 & 42 & 343 & 1 & 4 & 8 & 13 & 634 \\
\hline 04:45 PM & 19 & 197 & 1 & 217 & 30 & 2 & 12 & 44 & 3 & 296 & 46 & 345 & 1 & 4 & 4 & 9 & 615 \\
\hline Total Volume & 83 & 798 & 8 & 889 & 117 & 26 & 58 & 201 & 23 & 1207 & 171 & 1401 & 6 & 14 & 24 & 44 & 2535 \\
\hline \% App. Total & 9.3 & 89.8 & 0.9 & & 58.2 & 12.9 & 28.9 & & 1.6 & 86.2 & 12.2 & & 13.6 & 31.8 & 54.5 & & \\
\hline PHF & . 865 & . 932 & . 333 & . 954 & . 914 & . 591 & . 853 & 866 & . 479 & . 952 & . 855 & . 924 & . 500 & . 700 & . 750 & . 786 & . 949 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Whisper Heights/Pourroy Road
Weather: Clear

File Name : CRV79WHPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 2


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{04:30 PM} & \multicolumn{4}{|l|}{04:45 PM} & \multicolumn{4}{|l|}{04:00 PM} & \multicolumn{4}{|l|}{05:00 PM} \\
\hline +0 mins. & 19 & 214 & 0 & 233 & 30 & 2 & 12 & 44 & 12 & 317 & 50 & 379 & 2 & 0 & 2 & 4 \\
\hline +15 mins. & 19 & 197 & 1 & 217 & 33 & 5 & 12 & 50 & 6 & 295 & 33 & 334 & 3 & 4 & 2 & 9 \\
\hline +30 mins. & 16 & 205 & 2 & 223 & 43 & 10 & 32 & 85 & 2 & 299 & 42 & 343 & 6 & 9 & 13 & 28 \\
\hline +45 mins. & 17 & 205 & 4 & 226 & 28 & 3 & 16 & 47 & 3 & 296 & 46 & 345 & 8 & 8 & 8 & 24 \\
\hline Total Volume & 71 & 821 & 7 & 899 & 134 & 20 & 72 & 226 & 23 & 1207 & 171 & 1401 & 19 & 21 & 25 & 65 \\
\hline \% App. Total & 7.9 & 91.3 & 0.8 & & 59.3 & 8.8 & 31.9 & & 1.6 & 86.2 & 12.2 & & 29.2 & 32.3 & 38.5 & \\
\hline PHF & . 934 & . 959 & . 438 & . 965 & . 779 & . 500 & . 563 & . 665 & . 479 & . 952 & . 855 & . 924 & . 594 & . 583 & . 481 & . 580 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Jean Nicholas Road/Skyview Road
Weather: Clear

File Name: CRV79JEAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Skyview Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Jean Nicholas Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 07:00 AM & 3 & 249 & 23 & 275 & 1 & 0 & 4 & 5 & 17 & 170 & 1 & 188 & 20 & 0 & 25 & 45 & 513 \\
\hline 07:15 AM & 3 & 323 & 18 & 344 & 1 & 0 & 2 & 3 & 7 & 183 & 0 & 190 & 15 & 2 & 25 & 42 & 579 \\
\hline 07:30 AM & 1 & 354 & 20 & 375 & 0 & 3 & 2 & 5 & 29 & 188 & & 218 & 17 & 1 & 33 & 51 & 649 \\
\hline 07:45 AM & 1 & 255 & 21 & 277 & 1 & 0 & 0 & 1 & 27 & 167 & 2 & 196 & 19 & 1 & 26 & 46 & 520 \\
\hline Total & 8 & 1181 & 82 & 1271 & 3 & 3 & 8 & 14 & 80 & 708 & 4 & 792 & 71 & 4 & 109 & 184 & 2261 \\
\hline 08:00 AM & 1 & 306 & 31 & 338 & 1 & 1 & 2 & 4 & 23 & 123 & , & 147 & 6 & 0 & 36 & 42 & 531 \\
\hline 08:15 AM & 1 & 227 & 14 & 242 & 1 & 1 & 0 & 2 & 25 & 126 & 3 & 154 & 21 & 3 & 37 & 61 & 459 \\
\hline 08:30 AM & 0 & 213 & 15 & 228 & 1 & 3 & 2 & 6 & 34 & 112 & 1 & 147 & 17 & 2 & 32 & 51 & 432 \\
\hline 08:45 AM & 1 & 218 & 14 & 233 & 0 & 1 & 0 & 1 & 26 & 133 & 1 & 160 & 11 & 3 & 22 & 36 & 430 \\
\hline Total & 3 & 964 & 74 & 1041 & 3 & 6 & 4 & 13 & 108 & 494 & 6 & 608 & 55 & 8 & 127 & 190 & 1852 \\
\hline Grand Total & 11 & 2145 & 156 & 2312 & 6 & 9 & 12 & 27 & 188 & 1202 & 10 & 1400 & 126 & 12 & 236 & 374 & 4113 \\
\hline Apprch \% & 0.5 & 92.8 & 6.7 & & 22.2 & 33.3 & 44.4 & & 13.4 & 85.9 & 0.7 & & 33.7 & 3.2 & 63.1 & & \\
\hline Total \% & 0.3 & 52.2 & 3.8 & 56.2 & 0.1 & 0.2 & 0.3 & 0.7 & 4.6 & 29.2 & 0.2 & 34 & 3.1 & 0.3 & 5.7 & 9.1 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Skyview Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Jean Nicholas Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 07:15 AM} \\
\hline 07:15 AM & 3 & 323 & 18 & 344 & 1 & 0 & 2 & 3 & 7 & 183 & 0 & 190 & 15 & 2 & 25 & 42 & 579 \\
\hline 07:30 AM & 1 & 354 & 20 & 375 & 0 & 3 & 2 & 5 & 29 & 188 & 1 & 218 & 17 & 1 & 33 & 51 & 649 \\
\hline 07:45 AM & 1 & 255 & 21 & 277 & 1 & 0 & 0 & 1 & 27 & 167 & 2 & 196 & 19 & 1 & 26 & 46 & 520 \\
\hline 08:00 AM & 1 & 306 & 31 & 338 & 1 & 1 & 2 & 4 & 23 & 123 & 1 & 147 & 6 & 0 & 36 & 42 & 531 \\
\hline Total Volume & 6 & 1238 & 90 & 1334 & 3 & 4 & 6 & 13 & 86 & 661 & 4 & 751 & 57 & 4 & 120 & 181 & 2279 \\
\hline \% App. Total & 0.4 & 92.8 & 6.7 & & 23.1 & 30.8 & 46.2 & & 11.5 & 88 & 0.5 & & 31.5 & 2.2 & 66.3 & & \\
\hline PHF & . 500 & . 874 & . 726 & . 889 & . 750 & . 333 & . 750 & . 650 & . 741 & . 879 & . 500 & . 861 & . 750 & . 500 & . 833 & 887 & . 878 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Jean Nicholas Road/Skyview Road
Weather: Clear

File Name : CRV79JEAM
Site Code : 22116465
Start Date : 9/14/2016
Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{07:15 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:30 AM} \\
\hline +0 mins. & 3 & 323 & 18 & 344 & 1 & 0 & 4 & 5 & 17 & 170 & 1 & 188 & 17 & 1 & 33 & 51 \\
\hline +15 mins. & 1 & 354 & 20 & 375 & 1 & 0 & 2 & 3 & 7 & 183 & 0 & 190 & 19 & 1 & 26 & 46 \\
\hline +30 mins. & 1 & 255 & 21 & 277 & 0 & 3 & 2 & 5 & 29 & 188 & 1 & 218 & 6 & 0 & 36 & 42 \\
\hline +45 mins. & 1 & 306 & 31 & 338 & 1 & 0 & 0 & 1 & 27 & 167 & 2 & 196 & 21 & 3 & 37 & 61 \\
\hline Total Volume & 6 & 1238 & 90 & 1334 & 3 & 3 & 8 & 14 & 80 & 708 & 4 & 792 & 63 & 5 & 132 & 200 \\
\hline \% App. Total & 0.4 & 92.8 & 6.7 & & 21.4 & 21.4 & 57.1 & & 10.1 & 89.4 & 0.5 & & 31.5 & 2.5 & 66 & \\
\hline PHF & . 500 & . 874 & . 726 & . 889 & . 750 & . 250 & . 500 & . 700 & . 690 & . 941 & . 500 & . 908 & 750 & 417 & . 892 & . 820 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Jean Nicholas Road/Skyview Road
Weather: Clear

File Name: CRV79JEPM
Site Code : 22116465 Start Date: 9/14/2016 Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Skyview Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|r|}{Jean Nicholas Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 02:00 PM & 0 & 143 & 14 & 157 & 1 & 0 & 0 & 1 & 16 & 235 & 1 & 252 & 15 & 1 & 22 & 38 & 448 \\
\hline 02:15 PM & 1 & 166 & 12 & 179 & 2 & 1 & 3 & 6 & 43 & 230 & 2 & 275 & 14 & 2 & 26 & 42 & 502 \\
\hline 02:30 PM & 1 & 194 & 12 & 207 & 1 & 3 & 6 & 10 & 42 & 199 & 0 & 241 & 12 & 0 & 17 & 29 & 487 \\
\hline 02:45 PM & 0 & 165 & 12 & 177 & 1 & 0 & 0 & 1 & 42 & 269 & 0 & 311 & 16 & 0 & 20 & 36 & 525 \\
\hline Total & 2 & 668 & 50 & 720 & 5 & 4 & 9 & 18 & 143 & 933 & 3 & 1079 & 57 & 3 & 85 & 145 & 1962 \\
\hline 03:00 PM & 0 & 158 & 17 & 175 & 1 & 1 & 1 & 3 & 63 & 211 & 1 & 275 & 10 & 0 & 17 & 27 & 480 \\
\hline 03:15 PM & 0 & 126 & 13 & 139 & 0 & 0 & 3 & 3 & 48 & 254 & 3 & 305 & 14 & 0 & 28 & 42 & 489 \\
\hline 03:30 PM & 0 & 189 & 12 & 201 & 0 & 0 & 4 & 4 & 43 & 257 & 2 & 302 & 23 & 1 & 38 & 62 & 569 \\
\hline 03:45 PM & 1 & 170 & 7 & 178 & 1 & 0 & 1 & 2 & 32 & 295 & 2 & 329 & 13 & 0 & 29 & 42 & 551 \\
\hline Total & 1 & 643 & 49 & 693 & 2 & 1 & 9 & 12 & 186 & 1017 & 8 & 1211 & 60 & 1 & 112 & 173 & 2089 \\
\hline 04:00 PM & 1 & 214 & 7 & 222 & 1 & 0 & 7 & 8 & 32 & 347 & 2 & 381 & 15 & 0 & 19 & 34 & 645 \\
\hline 04:15 PM & 1 & 214 & 10 & 225 & 4 & 1 & 1 & 6 & 30 & 305 & & 336 & 25 & 0 & 23 & 48 & 615 \\
\hline 04:30 PM & 0 & 229 & 11 & 240 & 0 & 0 & 1 & 1 & 38 & 317 & 1 & 356 & 15 & 1 & 17 & 33 & 630 \\
\hline 04:45 PM & 0 & 204 & 17 & 221 & 0 & 1 & 1 & 2 & 48 & 312 & 1 & 361 & 33 & 0 & 23 & 56 & 640 \\
\hline Total & 2 & 861 & 45 & 908 & 5 & 2 & 10 & 17 & 148 & 1281 & 5 & 1434 & 88 & 1 & 82 & 171 & 2530 \\
\hline 05:00 PM & 0 & 221 & 13 & 234 & 2 & 0 & 0 & 2 & 62 & 301 & 0 & 363 & 23 & 2 & 19 & 44 & 643 \\
\hline 05:15 PM & 0 & 227 & 18 & 245 & 0 & 0 & 0 & 0 & 50 & 280 & 2 & 332 & 18 & 0 & 20 & 38 & 615 \\
\hline 05:30 PM & 0 & 237 & 15 & 252 & 1 & 1 & 0 & 2 & 36 & 295 & 1 & 332 & 13 & 0 & 21 & 34 & 620 \\
\hline 05:45 PM & 1 & 174 & 9 & 184 & 1 & 0 & 2 & 3 & 36 & 275 & 2 & 313 & 15 & 0 & 25 & 40 & 540 \\
\hline Total & 1 & 859 & 55 & 915 & 4 & 1 & 2 & 7 & 184 & 1151 & 5 & 1340 & 69 & 2 & 85 & 156 & 2418 \\
\hline Grand Total & 6 & 3031 & 199 & 3236 & 16 & 8 & 30 & 54 & 661 & 4382 & 21 & 5064 & 274 & 7 & 364 & 645 & 8999 \\
\hline Apprch \% & 0.2 & 93.7 & 6.1 & & 29.6 & 14.8 & 55.6 & & 13.1 & 86.5 & 0.4 & & 42.5 & 1.1 & 56.4 & & \\
\hline Total \% & 0.1 & 33.7 & 2.2 & 36 & 0.2 & 0.1 & 0.3 & 0.6 & 7.3 & 48.7 & 0.2 & 56.3 & 3 & 0.1 & 4 & 7.2 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Skyview Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|c|}{Jean Nicholas Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 04:00 PM} \\
\hline 04:00 PM & 1 & 214 & 7 & 222 & 1 & 0 & 7 & 8 & 32 & 347 & 2 & 381 & 15 & 0 & 19 & 34 & 645 \\
\hline 04:15 PM & 1 & 214 & 10 & 225 & 4 & 1 & 1 & 6 & 30 & 305 & 1 & 336 & 25 & 0 & 23 & 48 & 615 \\
\hline 04:30 PM & 0 & 229 & 11 & 240 & 0 & 0 & 1 & 1 & 38 & 317 & 1 & 356 & 15 & 1 & 17 & 33 & 630 \\
\hline 04:45 PM & 0 & 204 & 17 & 221 & 0 & 1 & 1 & 2 & 48 & 312 & 1 & 361 & 33 & 0 & 23 & 56 & 640 \\
\hline Total Volume & 2 & 861 & 45 & 908 & 5 & 2 & 10 & 17 & 148 & 1281 & 5 & 1434 & 88 & 1 & 82 & 171 & 2530 \\
\hline \% App. Total & 0.2 & 94.8 & 5 & & 29.4 & 11.8 & 58.8 & & 10.3 & 89.3 & 0.3 & & 51.5 & 0.6 & 48 & & \\
\hline PHF & . 500 & . 940 & . 662 & . 946 & . 313 & . 500 & . 357 & . 531 & . 771 & . 923 & . 625 & . 941 & . 667 & . 250 & . 891 & .763 & . 981 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Jean Nicholas Road/Skyview Road
Weather: Clear

File Name: CRV79JEPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 2


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{04:45 PM} & \multicolumn{4}{|l|}{02:15 PM} & \multicolumn{4}{|l|}{04:00 PM} & \multicolumn{4}{|l|}{03:30 PM} \\
\hline +0 mins. & 0 & 204 & 17 & 221 & 2 & 1 & 3 & 6 & 32 & 347 & 2 & 381 & 23 & 1 & 38 & 62 \\
\hline +15 mins. & 0 & 221 & 13 & 234 & 1 & 3 & 6 & 10 & 30 & 305 & 1 & 336 & 13 & 0 & 29 & 42 \\
\hline +30 mins. & 0 & 227 & 18 & 245 & 1 & 0 & 0 & 1 & 38 & 317 & 1 & 356 & 15 & 0 & 19 & 34 \\
\hline +45 mins. & 0 & 237 & 15 & 252 & 1 & 1 & 1 & 3 & 48 & 312 & 1 & 361 & 25 & 0 & 23 & 48 \\
\hline Total Volume & 0 & 889 & 63 & 952 & 5 & 5 & 10 & 20 & 148 & 1281 & 5 & 1434 & 76 & 1 & 109 & 186 \\
\hline \% App. Total & 0 & 93.4 & 6.6 & & 25 & 25 & 50 & & 10.3 & 89.3 & 0.3 & & 40.9 & 0.5 & 58.6 & \\
\hline PHF & . 000 & . 938 & . 875 & . 944 & . 625 & 417 & . 417 & . 500 & . 771 & . 923 & . 625 & . 941 & . 760 & . 250 & . 717 & . 750 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Max Gilliss Boulevard/Thompson Road
Weather: Clear

File Name : CRV79MAAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Thompson Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|l|}{Max Gilliss Boulevard Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 07:00 AM & 5 & 245 & 21 & 271 & 69 & 69 & 3 & 141 & 63 & 160 & 17 & 240 & 8 & 26 & 101 & 135 & 787 \\
\hline 07:15 AM & 6 & 321 & 29 & 356 & 39 & 56 & 4 & 99 & 62 & 164 & 30 & 256 & 18 & 30 & 102 & 150 & 861 \\
\hline 07:30 AM & 3 & 326 & 21 & 350 & 48 & 62 & 3 & 113 & 118 & 209 & 35 & 362 & 17 & 36 & 140 & 193 & 1018 \\
\hline 07:45 AM & 3 & 302 & 20 & 325 & 56 & 65 & 7 & 128 & 99 & 157 & 19 & 275 & 16 & 30 & 171 & 217 & 945 \\
\hline Total & 17 & 1194 & 91 & 1302 & 212 & 252 & 17 & 481 & 342 & 690 & 101 & 1133 & 59 & 122 & 514 & 695 & 3611 \\
\hline 08:00 AM & 9 & 326 & 17 & 352 & 66 & 50 & 3 & 119 & 80 & 124 & 11 & 215 & 15 & 22 & 122 & 159 & 845 \\
\hline 08:15 AM & 9 & 261 & 12 & 282 & 43 & 32 & 1 & 76 & 107 & 147 & 19 & 273 & 9 & 29 & 149 & 187 & 818 \\
\hline 08:30 AM & 3 & 221 & 14 & 238 & 48 & 62 & 3 & 113 & 119 & 141 & 21 & 281 & 15 & 28 & 134 & 177 & 809 \\
\hline 08:45 AM & 6 & 232 & 15 & 253 & 50 & 62 & 4 & 116 & 104 & 118 & 24 & 246 & 7 & 27 & 151 & 185 & 800 \\
\hline Total & 27 & 1040 & 58 & 1125 & 207 & 206 & 11 & 424 & 410 & 530 & 75 & 1015 & 46 & 106 & 556 & 708 & 3272 \\
\hline Grand Total & 44 & 2234 & 149 & 2427 & 419 & 458 & 28 & 905 & 752 & 1220 & 176 & 2148 & 105 & 228 & 1070 & 1403 & 6883 \\
\hline Apprch \% & 1.8 & 92 & 6.1 & & 46.3 & 50.6 & 3.1 & & 35 & 56.8 & 8.2 & & 7.5 & 16.3 & 76.3 & & \\
\hline Total \% & 0.6 & 32.5 & 2.2 & 35.3 & 6.1 & 6.7 & 0.4 & 13.1 & 10.9 & 17.7 & 2.6 & 31.2 & 1.5 & 3.3 & 15.5 & 20.4 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Thompson Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|l|}{Max Gilliss Boulevard Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 07:15 AM} \\
\hline 07:15 AM & 6 & 321 & 29 & 356 & 39 & 56 & 4 & 99 & 62 & 164 & 30 & 256 & 18 & 30 & 102 & 150 & 861 \\
\hline 07:30 AM & 3 & 326 & 21 & 350 & 48 & 62 & 3 & 113 & 118 & 209 & 35 & 362 & 17 & 36 & 140 & 193 & 1018 \\
\hline 07:45 AM & 3 & 302 & 20 & 325 & 56 & 65 & 7 & 128 & 99 & 157 & 19 & 275 & 16 & 30 & 171 & 217 & 945 \\
\hline 08:00 AM & 9 & 326 & 17 & 352 & 66 & 50 & 3 & 119 & 80 & 124 & 11 & 215 & 15 & 22 & 122 & 159 & 845 \\
\hline Total Volume & 21 & 1275 & 87 & 1383 & 209 & 233 & 17 & 459 & 359 & 654 & 95 & 1108 & 66 & 118 & 535 & 719 & 3669 \\
\hline \% App. Total & 1.5 & 92.2 & 6.3 & & 45.5 & 50.8 & 3.7 & & 32.4 & 59 & 8.6 & & 9.2 & 16.4 & 74.4 & & \\
\hline PHF & . 583 & . 978 & . 750 & . 971 & . 792 & . 896 & . 607 & . 896 & . 761 & 782 & . 679 & 765 & . 917 & . 819 & . 782 & . 828 & . 901 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Max Gilliss Boulevard/Thompson Road
Weather: Clear

File Name : CRV79MAAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{07:15 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{07:30 AM} \\
\hline +0 mins. & 6 & 321 & 29 & 356 & 69 & 69 & 3 & 141 & 63 & 160 & 17 & 240 & 17 & 36 & 140 & 193 \\
\hline +15 mins. & 3 & 326 & 21 & 350 & 39 & 56 & 4 & 99 & 62 & 164 & 30 & 256 & 16 & 30 & 171 & 217 \\
\hline +30 mins. & 3 & 302 & 20 & 325 & 48 & 62 & 3 & 113 & 118 & 209 & 35 & 362 & 15 & 22 & 122 & 159 \\
\hline +45 mins. & 9 & 326 & 17 & 352 & 56 & 65 & 7 & 128 & 99 & 157 & 19 & 275 & 9 & 29 & 149 & 187 \\
\hline Total Volume & 21 & 1275 & 87 & 1383 & 212 & 252 & 17 & 481 & 342 & 690 & 101 & 1133 & 57 & 117 & 582 & 756 \\
\hline \% App. Total & 1.5 & 92.2 & 6.3 & & 44.1 & 52.4 & 3.5 & & 30.2 & 60.9 & 8.9 & & 7.5 & 15.5 & 77 & \\
\hline PHF & . 583 & . 978 & . 750 & . 971 & . 768 & . 913 & . 607 & . 853 & . 725 & . 825 & . 721 & . 782 & . 838 & . 813 & . 851 & . 871 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Max Gilliss Boulevard/Thompson Road
Weather: Clear

File Name: CRV79MAPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Thompson Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|l|}{Max Gilliss Boulevard Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 02:00 PM & 4 & 154 & 9 & 167 & 40 & 34 & 2 & 76 & 84 & 280 & 37 & 401 & 5 & 14 & 80 & 99 & 743 \\
\hline 02:15 PM & 7 & 204 & 17 & 228 & 35 & 44 & 7 & 86 & 84 & 278 & 32 & 394 & 10 & 23 & 68 & 101 & 809 \\
\hline 02:30 PM & 6 & 200 & 15 & 221 & 29 & 37 & 4 & 70 & 110 & 237 & 36 & 383 & 17 & 21 & 96 & 134 & 808 \\
\hline 02:45 PM & 14 & 197 & 13 & 224 & 28 & 41 & 4 & 73 & 108 & 282 & 45 & 435 & 14 & 39 & 124 & 177 & 909 \\
\hline Total & 31 & 755 & 54 & 840 & 132 & 156 & 17 & 305 & 386 & 1077 & 150 & 1613 & 46 & 97 & 368 & 511 & 3269 \\
\hline 03:00 PM & 5 & 151 & 9 & 165 & 22 & 43 & 2 & 67 & 132 & 306 & 63 & 501 & 13 & 39 & 101 & 153 & 886 \\
\hline 03:15 PM & 3 & 150 & 14 & 167 & 40 & 30 & 7 & 77 & 119 & 282 & 51 & 452 & 12 & 46 & 134 & 192 & 888 \\
\hline 03:30 PM & 6 & 228 & 12 & 246 & 48 & 47 & 4 & 99 & 113 & 316 & 48 & 477 & 10 & 49 & 193 & 252 & 1074 \\
\hline 03:45 PM & 7 & 196 & 14 & 217 & 50 & 25 & 2 & 77 & 113 & 327 & 46 & 486 & 29 & 48 & 171 & 248 & 1028 \\
\hline Total & 21 & 725 & 49 & 795 & 160 & 145 & 15 & 320 & 477 & 1231 & 208 & 1916 & 64 & 182 & 599 & 845 & 3876 \\
\hline 04:00 PM & 10 & 192 & 16 & 218 & 36 & 29 & 7 & 72 & 105 & 361 & 54 & 520 & 17 & 36 & 96 & 149 & 959 \\
\hline 04:15 PM & 5 & 216 & 19 & 240 & 35 & 32 & 7 & 74 & 106 & 344 & 52 & 502 & 18 & 41 & 80 & 139 & 955 \\
\hline 04:30 PM & 7 & 199 & 9 & 215 & 33 & 39 & 6 & 78 & 120 & 337 & 53 & 510 & 12 & 36 & 81 & 129 & 932 \\
\hline 04:45 PM & 16 & 229 & 22 & 267 & 29 & 58 & 5 & 92 & 105 & 332 & 60 & 497 & 19 & 52 & 86 & 157 & 1013 \\
\hline Total & 38 & 836 & 66 & 940 & 133 & 158 & 25 & 316 & 436 & 1374 & 219 & 2029 & 66 & 165 & 343 & 574 & 3859 \\
\hline 05:00 PM & 5 & 204 & 14 & 223 & 44 & 52 & 6 & 102 & 116 & 361 & 51 & 528 & 11 & 52 & 88 & 151 & 1004 \\
\hline 05:15 PM & 10 & 217 & 16 & 243 & 44 & 42 & 3 & 89 & 113 & 311 & 51 & 475 & 25 & 59 & 101 & 185 & 992 \\
\hline 05:30 PM & 7 & 229 & 19 & 255 & 47 & 31 & 3 & 81 & 121 & 354 & 47 & 522 & 14 & 36 & 98 & 148 & 1006 \\
\hline 05:45 PM & 10 & 191 & 11 & 212 & 36 & 39 & 5 & 80 & 110 & 294 & 47 & 451 & 24 & 52 & 101 & 177 & 920 \\
\hline Total & 32 & 841 & 60 & 933 & 171 & 164 & 17 & 352 & 460 & 1320 & 196 & 1976 & 74 & 199 & 388 & 661 & 3922 \\
\hline Grand Total & 122 & 3157 & 229 & 3508 & 596 & 623 & 74 & 1293 & 1759 & 5002 & 773 & 7534 & 250 & 643 & 1698 & 2591 & 14926 \\
\hline Apprch \% & 3.5 & 90 & 6.5 & & 46.1 & 48.2 & 5.7 & & 23.3 & 66.4 & 10.3 & & 9.6 & 24.8 & 65.5 & & \\
\hline Total \% & 0.8 & 21.2 & 1.5 & 23.5 & 4 & 4.2 & 0.5 & 8.7 & 11.8 & 33.5 & 5.2 & 50.5 & 1.7 & 4.3 & 11.4 & 17.4 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Winchester Road Southbound} & \multicolumn{4}{|c|}{Thompson Road Westbound} & \multicolumn{4}{|c|}{Winchester Road Northbound} & \multicolumn{4}{|r|}{Max Gilliss Boulevard Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 03:30 PM} \\
\hline 03:30 PM & 6 & 228 & 12 & 246 & 48 & 47 & 4 & 99 & 113 & 316 & 48 & 477 & 10 & 49 & 193 & 252 & 1074 \\
\hline 03:45 PM & 7 & 196 & 14 & 217 & 50 & 25 & 2 & 77 & 113 & 327 & 46 & 486 & 29 & 48 & 171 & 248 & 1028 \\
\hline 04:00 PM & 10 & 192 & 16 & 218 & 36 & 29 & 7 & 72 & 105 & 361 & 54 & 520 & 17 & 36 & 96 & 149 & 959 \\
\hline 04:15 PM & 5 & 216 & 19 & 240 & 35 & 32 & 7 & 74 & 106 & 344 & 52 & 502 & 18 & 41 & 80 & 139 & 955 \\
\hline Total Volume & 28 & 832 & 61 & 921 & 169 & 133 & 20 & 322 & 437 & 1348 & 200 & 1985 & 74 & 174 & 540 & 788 & 4016 \\
\hline \% App. Total & 3 & 90.3 & 6.6 & & 52.5 & 41.3 & 6.2 & & 22 & 67.9 & 10.1 & & 9.4 & 22.1 & 68.5 & & \\
\hline PHF & . 700 & . 912 & . 803 & . 936 & . 845 & . 707 & . 714 & . 813 & . 967 & . 934 & . 926 & . 954 & . 638 & . 888 & . 699 & 782 & . 935 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Max Gilliss Boulevard/Thompson Road
Weather: Clear

File Name : CRV79MAPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 2


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{04:45 PM} & \multicolumn{4}{|l|}{04:45 PM} & \multicolumn{4}{|l|}{04:15 PM} & \multicolumn{4}{|l|}{03:00 PM} \\
\hline +0 mins. & 16 & 229 & 22 & 267 & 29 & 58 & 5 & 92 & 106 & 344 & 52 & 502 & 13 & 39 & 101 & 153 \\
\hline +15 mins. & 5 & 204 & 14 & 223 & 44 & 52 & 6 & 102 & 120 & 337 & 53 & 510 & 12 & 46 & 134 & 192 \\
\hline +30 mins. & 10 & 217 & 16 & 243 & 44 & 42 & 3 & 89 & 105 & 332 & 60 & 497 & 10 & 49 & 193 & 252 \\
\hline +45 mins. & 7 & 229 & 19 & 255 & 47 & 31 & 3 & 81 & 116 & 361 & 51 & 528 & 29 & 48 & 171 & 248 \\
\hline Total Volume & 38 & 879 & 71 & 988 & 164 & 183 & 17 & 364 & 447 & 1374 & 216 & 2037 & 64 & 182 & 599 & 845 \\
\hline \% App. Total & 3.8 & 89 & 7.2 & & 45.1 & 50.3 & 4.7 & & 21.9 & 67.5 & 10.6 & & 7.6 & 21.5 & 70.9 & \\
\hline PHF & . 594 & . 960 & . 807 & . 925 & . 872 & . 789 & . 708 & . 892 & . 931 & . 952 & . 900 & . 964 & . 552 & . 929 & . 776 & . 838 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Benton Road
Weather: Clear

File Name : CRV79BEAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Winchester Road Southbound} & \multicolumn{3}{|c|}{Benton Road Westbound} & \multicolumn{3}{|c|}{Winchester Road Northbound} & \\
\hline Start Time & Left & Thru & App. Total & Left & Right & App. Total & Thru & Right & App. Total & Int. Total \\
\hline 07:00 AM & 63 & 360 & 423 & 114 & 53 & 167 & 172 & 43 & 215 & 805 \\
\hline 07:15 AM & 77 & 374 & 451 & 87 & 42 & 129 & 219 & 66 & 285 & 865 \\
\hline 07:30 AM & 82 & 420 & 502 & 79 & 67 & 146 & 289 & 63 & 352 & 1000 \\
\hline 07:45 AM & 78 & 467 & 545 & 91 & 59 & 150 & 203 & 49 & 252 & 947 \\
\hline Total & 300 & 1621 & 1921 & 371 & 221 & 592 & 883 & 221 & 1104 & 3617 \\
\hline 08:00 AM & 80 & 416 & 496 & 111 & 49 & 160 & 178 & 41 & 219 & 875 \\
\hline 08:15 AM & 71 & 393 & 464 & 93 & 68 & 161 & 210 & 63 & 273 & 898 \\
\hline 08:30 AM & 87 & 337 & 424 & 91 & 69 & 160 & 220 & 61 & 281 & 865 \\
\hline 08:45 AM & 81 & 340 & 421 & 116 & 74 & 190 & 178 & 48 & 226 & 837 \\
\hline Total & 319 & 1486 & 1805 & 411 & 260 & 671 & 786 & 213 & 999 & 3475 \\
\hline Grand Total & 619 & 3107 & 3726 & 782 & 481 & 1263 & 1669 & 434 & 2103 & 7092 \\
\hline Apprch \% & 16.6 & 83.4 & & 61.9 & 38.1 & & 79.4 & 20.6 & & \\
\hline Total \% & 8.7 & 43.8 & 52.5 & 11 & 6.8 & 17.8 & 23.5 & 6.1 & 29.7 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Winchester Road Southbound} & \multicolumn{3}{|c|}{Benton Road Westbound} & \multicolumn{3}{|c|}{Winchester Road Northbound} & \\
\hline Start Time & Left & Thru & App. Total & Left & Right & App. Total & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{11}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{11}{|l|}{Peak Hour for Entire Intersection Begins at 07:30 AM} \\
\hline 07:30 AM & 82 & 420 & 502 & 79 & 67 & 146 & 289 & 63 & 352 & 1000 \\
\hline 07:45 AM & 78 & 467 & 545 & 91 & 59 & 150 & 203 & 49 & 252 & 947 \\
\hline 08:00 AM & 80 & 416 & 496 & 111 & 49 & 160 & 178 & 41 & 219 & 875 \\
\hline 08:15 AM & 71 & 393 & 464 & 93 & 68 & 161 & 210 & 63 & 273 & 898 \\
\hline Total Volume & 311 & 1696 & 2007 & 374 & 243 & 617 & 880 & 216 & 1096 & 3720 \\
\hline \% App. Total & 15.5 & 84.5 & & 60.6 & 39.4 & & 80.3 & 19.7 & & \\
\hline PHF & . 948 & . 908 & . 921 & . 842 & . 893 & . 958 & . 761 & . 857 & 778 & 930 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Benton Road
Weather: Clear

File Name : CRV79BEAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|l|}{07:30 AM} & \multicolumn{3}{|l|}{08:00 AM} & \multicolumn{3}{|l|}{07:15 AM} \\
\hline +0 mins. & 82 & 420 & 502 & 111 & 49 & 160 & 219 & 66 & 285 \\
\hline +15 mins. & 78 & 467 & 545 & 93 & 68 & 161 & 289 & 63 & 352 \\
\hline +30 mins. & 80 & 416 & 496 & 91 & 69 & 160 & 203 & 49 & 252 \\
\hline +45 mins. & 71 & 393 & 464 & 116 & 74 & 190 & 178 & 41 & 219 \\
\hline Total Volume & 311 & 1696 & 2007 & 411 & 260 & 671 & 889 & 219 & 1108 \\
\hline \% App. Total & 15.5 & 84.5 & & 61.3 & 38.7 & & 80.2 & 19.8 & \\
\hline PHF & . 948 & . 908 & . 921 & . 886 & . 878 & . 883 & . 769 & . 830 & .787 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Benton Road
Weather: Clear

File Name: CRV79BEPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Winchester Road Southbound} & \multicolumn{3}{|c|}{Benton Road Westbound} & \multicolumn{3}{|c|}{Winchester Road Northbound} & \\
\hline Start Time & Left & Thru & App. Total & Left & Right & App. Total & Thru & Right & App. Total & Int. Total \\
\hline 02:00 PM & 54 & 209 & 263 & 62 & 91 & 153 & 289 & 98 & 387 & 803 \\
\hline 02:15 PM & 63 & 232 & 295 & 72 & 80 & 152 & 333 & 90 & 423 & 870 \\
\hline 02:30 PM & 77 & 253 & 330 & 67 & 98 & 165 & 306 & 85 & 391 & 886 \\
\hline 02:45 PM & 72 & 260 & 332 & 72 & 100 & 172 & 358 & 124 & 482 & 986 \\
\hline Total & 266 & 954 & 1220 & 273 & 369 & 642 & 1286 & 397 & 1683 & 3545 \\
\hline 03:00 PM & 74 & 217 & 291 & 81 & 111 & 192 & 396 & 133 & 529 & 1012 \\
\hline 03:15 PM & 70 & 244 & 314 & 64 & 104 & 168 & 370 & 92 & 462 & 944 \\
\hline 03:30 PM & 82 & 374 & 456 & 91 & 121 & 212 & 379 & 92 & 471 & 1139 \\
\hline 03:45 PM & 74 & 340 & 414 & 84 & 115 & 199 & 396 & 113 & 509 & 1122 \\
\hline Total & 300 & 1175 & 1475 & 320 & 451 & 771 & 1541 & 430 & 1971 & 4217 \\
\hline 04:00 PM & 72 & 237 & 309 & 49 & 110 & 159 & 393 & 95 & 488 & 956 \\
\hline 04:15 PM & 86 & 265 & 351 & 80 & 105 & 185 & 378 & 92 & 470 & 1006 \\
\hline 04:30 PM & 67 & 267 & 334 & 71 & 136 & 207 & 391 & 125 & 516 & 1057 \\
\hline 04:45 PM & 75 & 250 & 325 & 54 & 120 & 174 & 395 & 108 & 503 & 1002 \\
\hline Total & 300 & 1019 & 1319 & 254 & 471 & 725 & 1557 & 420 & 1977 & 4021 \\
\hline 05:00 PM & 65 & 274 & 339 & 79 & 134 & 213 & 410 & 110 & 520 & 1072 \\
\hline 05:15 PM & 74 & 312 & 386 & 83 & 120 & 203 & 350 & 93 & 443 & 1032 \\
\hline 05:30 PM & 78 & 278 & 356 & 90 & 107 & 197 & 419 & 111 & 530 & 1083 \\
\hline 05:45 PM & 87 & 257 & 344 & 80 & 106 & 186 & 357 & 120 & 477 & 1007 \\
\hline Total & 304 & 1121 & 1425 & 332 & 467 & 799 & 1536 & 434 & 1970 & 4194 \\
\hline Grand Total & 1170 & 4269 & 5439 & 1179 & 1758 & 2937 & 5920 & 1681 & 7601 & 15977 \\
\hline Apprch \% & 21.5 & 78.5 & & 40.1 & 59.9 & & 77.9 & 22.1 & & \\
\hline Total \% & 7.3 & 26.7 & 34 & 7.4 & 11 & 18.4 & 37.1 & 10.5 & 47.6 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Winchester Road Southbound} & \multicolumn{3}{|c|}{Benton Road Westbound} & \multicolumn{3}{|c|}{Winchester Road Northbound} & \\
\hline Start Time & Left & Thru & App. Total & Left & Right & App. Total & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{11}{|l|}{\multirow[t]{2}{*}{Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 Peak Hour for Entire Intersection Begins at 03:30 PM}} \\
\hline & & & & & & & & & & \\
\hline 03:30 PM & 82 & 374 & 456 & 91 & 121 & 212 & 379 & 92 & 471 & 1139 \\
\hline 03:45 PM & 74 & 340 & 414 & 84 & 115 & 199 & 396 & 113 & 509 & 1122 \\
\hline 04:00 PM & 72 & 237 & 309 & 49 & 110 & 159 & 393 & 95 & 488 & 956 \\
\hline 04:15 PM & 86 & 265 & 351 & 80 & 105 & 185 & 378 & 92 & 470 & 1006 \\
\hline Total Volume & 314 & 1216 & 1530 & 304 & 451 & 755 & 1546 & 392 & 1938 & 4223 \\
\hline \% App. Total & 20.5 & 79.5 & & 40.3 & 59.7 & & 79.8 & 20.2 & & \\
\hline PHF & . 913 & . 813 & . 839 & . 835 & . 932 & . 890 & . 976 & . 867 & 952 & . 927 \\
\hline
\end{tabular}

County of Riverside
N/S: Winchester Road (SR-79)
E/W: Benton Road
Weather: Clear

File Name : CRV79BEPM
Site Code : 22116465
Start Date : 9/14/2016
Page No : 2


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|l|}{03:30 PM} & \multicolumn{3}{|l|}{05:00 PM} & \multicolumn{3}{|l|}{04:15 PM} \\
\hline +0 mins. & 82 & 374 & 456 & 79 & 134 & 213 & 378 & 92 & 470 \\
\hline +15 mins. & 74 & 340 & 414 & 83 & 120 & 203 & 391 & 125 & 516 \\
\hline +30 mins. & 72 & 237 & 309 & 90 & 107 & 197 & 395 & 108 & 503 \\
\hline +45 mins. & 86 & 265 & 351 & 80 & 106 & 186 & 410 & 110 & 520 \\
\hline Total Volume & 314 & 1216 & 1530 & 332 & 467 & 799 & 1574 & 435 & 2009 \\
\hline \% App. Total & 20.5 & 79.5 & & 41.6 & 58.4 & & 78.3 & 21.7 & \\
\hline PHF & . 913 & . 813 & . 839 & . 922 & . 871 & . 938 & . 960 & . 870 & . 966 \\
\hline
\end{tabular}

County of Riverside
N/S: Pat Road
E/W: Pourroy Road
Weather: Clear

File Name : CRVPAPOAM
Site Code : 22116465
Start Date : 9/14/2016
Page No : 1
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Pourroy Road Westbound} & \multicolumn{3}{|l|}{Pat Road Northbound} & \multicolumn{3}{|c|}{Pourroy Road Eastbound} & \\
\hline Start Time & Left & Thru & App. Total & Left & Right & App. Total & Thru & Right & App. Total & Int. Total \\
\hline 07:00 AM & 18 & 1 & 19 & 0 & 14 & 14 & 3 & 0 & 3 & 36 \\
\hline 07:15 AM & 38 & 0 & 38 & 0 & 22 & 22 & 0 & 1 & 1 & 61 \\
\hline 07:30 AM & 25 & 0 & 25 & 2 & 27 & 29 & 1 & 1 & 2 & 56 \\
\hline 07:45 AM & 7 & 2 & 9 & 0 & 16 & 16 & 0 & 1 & 1 & 26 \\
\hline Total & 88 & 3 & 91 & 2 & 79 & 81 & 4 & 3 & 7 & 179 \\
\hline 08:00 AM & 7 & 0 & 7 & 1 & 11 & 12 & 0 & 2 & 2 & 21 \\
\hline 08:15 AM & 3 & 2 & 5 & 0 & 9 & 9 & 0 & 0 & 0 & 14 \\
\hline 08:30 AM & 4 & 2 & 6 & 2 & 6 & 8 & 0 & 0 & 0 & 14 \\
\hline 08:45 AM & 5 & 2 & 7 & 0 & 8 & 8 & 2 & 1 & 3 & 18 \\
\hline Total & 19 & 6 & 25 & 3 & 34 & 37 & 2 & 3 & 5 & 67 \\
\hline Grand Total & 107 & 9 & 116 & 5 & 113 & 118 & 6 & 6 & 12 & 246 \\
\hline Apprch \% & 92.2 & 7.8 & & 4.2 & 95.8 & & 50 & 50 & & \\
\hline Total \% & 43.5 & 3.7 & 47.2 & 2 & 45.9 & 48 & 2.4 & 2.4 & 4.9 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Pourroy Road Westbound} & \multicolumn{3}{|c|}{Pat Road Northbound} & \multicolumn{3}{|c|}{Pourroy Road Eastbound} & \\
\hline Start Time & Left & Thru & App. Total & Left & Right & App. Total & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{11}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{11}{|l|}{Peak Hour for Entire Intersection Begins at 07:00 AM} \\
\hline 07:00 AM & 18 & 1 & 19 & 0 & 14 & 14 & 3 & 0 & 3 & 36 \\
\hline 07:15 AM & 38 & 0 & 38 & 0 & 22 & 22 & 0 & 1 & 1 & 61 \\
\hline 07:30 AM & 25 & 0 & 25 & 2 & 27 & 29 & 1 & 1 & 2 & 56 \\
\hline 07:45 AM & 7 & 2 & 9 & 0 & 16 & 16 & 0 & 1 & 1 & 26 \\
\hline Total Volume & 88 & 3 & 91 & 2 & 79 & 81 & 4 & 3 & 7 & 179 \\
\hline \% App. Total & 96.7 & 3.3 & & 2.5 & 97.5 & & 57.1 & 42.9 & & \\
\hline PHF & . 579 & . 375 & . 599 & . 250 & . 731 & . 698 & . 333 & . 750 & . 583 & . 734 \\
\hline
\end{tabular}

County of Riverside
N/S: Pat Road E/W: Pourroy Road Weather: Clear

File Name : CRVPAPOAM
Site Code : 22116465
Start Date : 9/14/2016
Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|l|}{07:00 AM} & \multicolumn{3}{|l|}{07:00 AM} & \multicolumn{3}{|l|}{07:00 AM} \\
\hline +0 mins. & 18 & 1 & 19 & 0 & 14 & 14 & 3 & 0 & 3 \\
\hline +15 mins. & 38 & 0 & 38 & 0 & 22 & 22 & 0 & 1 & 1 \\
\hline +30 mins. & 25 & 0 & 25 & 2 & 27 & 29 & 1 & 1 & 2 \\
\hline +45 mins. & 7 & 2 & 9 & 0 & 16 & 16 & 0 & 1 & 1 \\
\hline Total Volume & 88 & 3 & 91 & 2 & 79 & 81 & 4 & 3 & 7 \\
\hline \% App. Total & 96.7 & 3.3 & & 2.5 & 97.5 & & 57.1 & 42.9 & \\
\hline PHF & . 579 & . 375 & . 599 & . 250 & . 731 & . 698 & . 333 & . 750 & . 583 \\
\hline
\end{tabular}

County of Riverside
File Name : CRVPAPOPM
N/S: Pat Road
E/W: Pourroy Road
Weather: Clear

Site Code : 22116465
Start Date : 9/14/2016
Page No : 1
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{10}{|c|}{Groups Printed- Total Volume} & \\
\hline & \multicolumn{3}{|c|}{Pourroy Road Westbound} & \multicolumn{3}{|c|}{Pat Road Northbound} & \multicolumn{3}{|c|}{Pourroy Road Eastbound} & \\
\hline Start Time & Left & Thru & App. Total & Left & Right & App. Total & Thru & Right & App. Total & Int. Total \\
\hline 02:00 PM & 11 & 0 & 11 & 1 & 25 & 26 & 1 & 1 & 2 & 39 \\
\hline 02:15 PM & 5 & 1 & 6 & 0 & 37 & 37 & 2 & 0 & 2 & 45 \\
\hline 02:30 PM & 3 & 1 & 4 & 0 & 11 & 11 & 1 & 0 & 1 & 16 \\
\hline 02:45 PM & 8 & 3 & 11 & 1 & 9 & 10 & 0 & 0 & 0 & 21 \\
\hline Total & 27 & 5 & 32 & 2 & 82 & 84 & 4 & 1 & 5 & 121 \\
\hline 03:00 PM & 7 & 0 & 7 & 0 & 9 & 9 & 3 & 0 & 3 & 19 \\
\hline 03:15 PM & 5 & 1 & 6 & 0 & 6 & 6 & 1 & 0 & 1 & 13 \\
\hline 03:30 PM & 9 & 1 & 10 & 0 & 9 & 9 & 0 & 0 & 0 & 19 \\
\hline 03:45 PM & 6 & 1 & 7 & 0 & 8 & 8 & 1 & 1 & 2 & 17 \\
\hline Total & 27 & 3 & 30 & 0 & 32 & 32 & 5 & 1 & 6 & 68 \\
\hline 04:00 PM & 12 & 1 & 13 & 0 & 12 & 12 & 1 & 1 & 2 & 27 \\
\hline 04:15 PM & 8 & 1 & 9 & 1 & 7 & 8 & 1 & 1 & 2 & 19 \\
\hline 04:30 PM & 6 & 0 & 6 & 0 & 1 & 1 & 0 & 0 & 0 & 7 \\
\hline 04:45 PM & 6 & 3 & 9 & 2 & 14 & 16 & 0 & 0 & 0 & 25 \\
\hline Total & 32 & 5 & 37 & 3 & 34 & 37 & 2 & 2 & 4 & 78 \\
\hline 05:00 PM & 9 & 1 & 10 & 0 & 6 & 6 & 3 & 0 & 3 & 19 \\
\hline 05:15 PM & 7 & 0 & 7 & 0 & 6 & 6 & 2 & 0 & 2 & 15 \\
\hline 05:30 PM & 15 & 0 & 15 & 0 & 6 & 6 & 2 & 0 & 2 & 23 \\
\hline 05:45 PM & 8 & 2 & 10 & 0 & 9 & 9 & 0 & 0 & 0 & 19 \\
\hline Total & 39 & 3 & 42 & 0 & 27 & 27 & 7 & 0 & 7 & 76 \\
\hline Grand Total & 125 & 16 & 141 & 5 & 175 & 180 & 18 & 4 & 22 & 343 \\
\hline Apprch \% & 88.7 & 11.3 & & 2.8 & 97.2 & & 81.8 & 18.2 & & \\
\hline Total \% & 36.4 & 4.7 & 41.1 & 1.5 & 51 & 52.5 & 5.2 & 1.2 & 6.4 & \\
\hline
\end{tabular}
\begin{tabular}{|r|r|r|r|r|r|r|r|r|r|}
\hline & \multicolumn{2}{|c|}{\begin{tabular}{l} 
Pourroy Road \\
Westbound
\end{tabular}} & \multicolumn{3}{c|}{\begin{tabular}{c} 
Pat Road \\
Northbound
\end{tabular}} & \multicolumn{3}{c|}{\begin{tabular}{c} 
Pourroy Road \\
Eastbound
\end{tabular}} \\
\hline Start Time & Left & Thru & App. Total & Left & Right & App. Total & Thru & Right & App. Total
\end{tabular} Int. Total 1

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 02:00 PM
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline 02:00 PM & 11 & 0 & 11 & 1 & 25 & 26 & 1 & 1 & 2 & 39 \\
\hline 02:15 PM & 5 & 1 & 6 & 0 & 37 & 37 & 2 & 0 & 2 & 45 \\
\hline 02:30 PM & 3 & 1 & 4 & 0 & 11 & 11 & 1 & 0 & 1 & 16 \\
\hline 02:45 PM & 8 & 3 & 11 & 1 & 9 & 10 & 0 & 0 & 0 & 21 \\
\hline Total Volume & 27 & 5 & 32 & 2 & 82 & 84 & 4 & 1 & 5 & 121 \\
\hline \% App. Total & 84.4 & 15.6 & & 2.4 & 97.6 & & 80 & 20 & & \\
\hline PHF & . 614 & . 417 & . 727 & . 500 & . 554 & . 568 & . 500 & . 250 & . 625 & . 672 \\
\hline
\end{tabular}

County of Riverside
N/S: Pat Road E/W: Pourroy Road Weather: Clear

File Name : CRVPAPOPM
Site Code : 22116465 Start Date : 9/14/2016
Page No : 2


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|l|}{05:00 PM} & \multicolumn{3}{|l|}{02:00 PM} & \multicolumn{3}{|l|}{04:45 PM} \\
\hline +0 mins. & 9 & 1 & 10 & 1 & 25 & 26 & 0 & 0 & 0 \\
\hline +15 mins. & 7 & 0 & 7 & 0 & 37 & 37 & 3 & 0 & 3 \\
\hline +30 mins. & 15 & 0 & 15 & 0 & 11 & 11 & 2 & 0 & 2 \\
\hline +45 mins. & 8 & 2 & 10 & 1 & 9 & 10 & 2 & 0 & 2 \\
\hline Total Volume & 39 & 3 & 42 & 2 & 82 & 84 & 7 & 0 & 7 \\
\hline \% App. Total & 92.9 & 7.1 & & 2.4 & 97.6 & & 100 & 0 & \\
\hline PHF & . 650 & . 375 & . 700 & . 500 & . 554 & . 568 & . 583 & . 000 & . 583 \\
\hline
\end{tabular}

County of Riverside
N/S: Elliot Road
E/W: Jean Nicholas Road
Weather: Clear

File Name : CRVELJEAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Elliot Road Southbound} & \multicolumn{3}{|l|}{Jean Nicholas Road Westbound} & \multicolumn{3}{|l|}{Jean Nicholas Road Eastbound} & \\
\hline Start Time & Left & Right & App. Total & Thru & Right & App. Total & Left & Thru & App. Total & Int. Total \\
\hline 07:00 AM & 13 & 23 & 36 & 45 & 1 & 46 & 19 & 32 & 51 & 133 \\
\hline 07:15 AM & 10 & 26 & 36 & 23 & 6 & 29 & 49 & 29 & 78 & 143 \\
\hline 07:30 AM & 19 & 70 & 89 & 43 & 2 & 45 & 37 & 35 & 72 & 206 \\
\hline 07:45 AM & 8 & 13 & 21 & 58 & 0 & 58 & 6 & 36 & 42 & 121 \\
\hline Total & 50 & 132 & 182 & 169 & 9 & 178 & 111 & 132 & 243 & 603 \\
\hline 08:00 AM & 12 & 18 & 30 & 65 & 5 & 70 & 2 & 38 & 40 & 140 \\
\hline 08:15 AM & 16 & 8 & 24 & 35 & 3 & 38 & 9 & 48 & 57 & 119 \\
\hline 08:30 AM & 6 & 8 & 14 & 46 & 6 & 52 & 6 & 41 & 47 & 113 \\
\hline 08:45 AM & 7 & 10 & 17 & 35 & 9 & 44 & 10 & 30 & 40 & 101 \\
\hline Total & 41 & 44 & 85 & 181 & 23 & 204 & 27 & 157 & 184 & 473 \\
\hline Grand Total & 91 & 176 & 267 & 350 & 32 & 382 & 138 & 289 & 427 & 1076 \\
\hline Apprch \% & 34.1 & 65.9 & & 91.6 & 8.4 & & 32.3 & 67.7 & & \\
\hline Total \% & 8.5 & 16.4 & 24.8 & 32.5 & 3 & 35.5 & 12.8 & 26.9 & 39.7 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Elliot Road Southbound} & \multicolumn{3}{|c|}{Jean Nicholas Road Westbound} & \multicolumn{3}{|l|}{Jean Nicholas Road Eastbound} & \\
\hline Start Time & Left & Right & App. Total & Thru & Right & App. Total & Left & Thru & App. Total & Int. Total \\
\hline \multicolumn{11}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{11}{|l|}{} \\
\hline 07:15 AM & 10 & 26 & 36 & 23 & 6 & 29 & 49 & 29 & 78 & 143 \\
\hline 07:30 AM & 19 & 70 & 89 & 43 & 2 & 45 & 37 & 35 & 72 & 206 \\
\hline 07:45 AM & 8 & 13 & 21 & 58 & 0 & 58 & 6 & 36 & 42 & 121 \\
\hline 08:00 AM & 12 & 18 & 30 & 65 & 5 & 70 & 2 & 38 & 40 & 140 \\
\hline Total Volume & 49 & 127 & 176 & 189 & 13 & 202 & 94 & 138 & 232 & 610 \\
\hline \% App. Total & 27.8 & 72.2 & & 93.6 & 6.4 & & 40.5 & 59.5 & & \\
\hline PHF & . 645 & . 454 & . 494 & . 727 & 542 & . 721 & 480 & . 908 & 744 & 740 \\
\hline
\end{tabular}

County of Riverside
File Name : CRVELJEAM
N/S: Elliot Road
Site Code : 22116465
E/W: Jean Nicholas Road
Start Date: 9/14/2016
Weather: Clear Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{r|rr|rrrrrr} 
\\
\hline & & & & & & \\
\hline
\end{tabular}

County of Riverside
File Name: CRVELJEPM
N/S: Elliot Road
Site Code : 22116465
Start Date : 9/14/2016
Page No : 1
E/W: Jean Nicholas Road
Weather: Clear
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{10}{|c|}{Groups Printed- Total Volume} & \\
\hline & \multicolumn{3}{|c|}{Elliot Road Southbound} & \multicolumn{3}{|l|}{Jean Nicholas Road Westbound} & \multicolumn{3}{|l|}{Jean Nicholas Road Eastbound} & \\
\hline Start Time & Left & Right & App. Total & Thru & Right & App. Total & Left & Thru & App. Total & Int. Total \\
\hline 02:00 PM & 11 & 48 & 59 & 25 & 10 & 35 & 18 & 23 & 41 & 135 \\
\hline 02:15 PM & 14 & 53 & 67 & 48 & 6 & 54 & 4 & 26 & 30 & 151 \\
\hline 02:30 PM & 9 & 13 & 22 & 48 & 9 & 57 & 6 & 26 & 32 & 111 \\
\hline 02:45 PM & 3 & 8 & 11 & 36 & 8 & 44 & 12 & 35 & 47 & 102 \\
\hline Total & 37 & 122 & 159 & 157 & 33 & 190 & 40 & 110 & 150 & 499 \\
\hline 03:00 PM & 6 & 9 & 15 & 61 & 8 & 69 & 13 & 21 & 34 & 118 \\
\hline 03:15 PM & 8 & 7 & 15 & 47 & 8 & 55 & 12 & 41 & 53 & 123 \\
\hline 03:30 PM & 4 & 13 & 17 & 39 & 13 & 52 & 17 & 58 & 75 & 144 \\
\hline 03:45 PM & 8 & 12 & 20 & 29 & 3 & 32 & 15 & 32 & 47 & 99 \\
\hline Total & 26 & 41 & 67 & 176 & 32 & 208 & 57 & 152 & 209 & 484 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline 04:00 PM & 2 & 7 & 9 & 27 & 7 & 34 & 8 & 22 & 30 & 73 \\
\hline 04:15 PM & 9 & 6 & 15 & 31 & 4 & 35 & 9 & 37 & 46 & 96 \\
\hline 04:30 PM & 8 & 7 & 15 & 41 & 9 & 50 & 6 & 29 & 35 & 100 \\
\hline 04:45 PM & 7 & 5 & 12 & 43 & 13 & 56 & 9 & 41 & 50 & 118 \\
\hline Total & 26 & 25 & 51 & 142 & 33 & 175 & 32 & 129 & 161 & 387 \\
\hline 05:00 PM & 11 & 6 & 17 & 46 & 14 & 60 & 6 & 29 & 35 & 112 \\
\hline 05:15 PM & 6 & 7 & 13 & 45 & 9 & 54 & 9 & 26 & 35 & 102 \\
\hline 05:30 PM & 5 & 11 & 16 & 36 & 17 & 53 & 6 & 29 & 35 & 104 \\
\hline 05:45 PM & 8 & 13 & 21 & 29 & 7 & 36 & 7 & 30 & 37 & 94 \\
\hline Total & 30 & 37 & 67 & 156 & 47 & 203 & 28 & 114 & 142 & 412 \\
\hline Grand Total & 119 & 225 & 344 & 631 & 145 & 776 & 157 & 505 & 662 & 1782 \\
\hline Apprch \% & 34.6 & 65.4 & & 81.3 & 18.7 & & 23.7 & 76.3 & & \\
\hline Total \% & 6.7 & 12.6 & 19.3 & 35.4 & 8.1 & 43.5 & 8.8 & 28.3 & 37.1 & \\
\hline
\end{tabular}
\begin{tabular}{|r|r|r|r|r|r|r|r|r|}
\hline & \multicolumn{3}{|c|}{ Elliot Road } & \multicolumn{3}{c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Jean Nicholas Road } \\
Southbound & \multicolumn{2}{|c|}{ Westbound } & \multicolumn{2}{c|}{ Eastbound } \\
\hline Start Time & Left & Right & App. Total & Thru & Right & App. Total & Left & Thru \\
\hline
\end{tabular}

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 02:00 PM
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline 02:00 PM & 11 & 48 & 59 & 25 & 10 & 35 & 18 & 23 & 41 & 135 \\
\hline 02:15 PM & 14 & 53 & 67 & 48 & 6 & 54 & 4 & 26 & 30 & 151 \\
\hline 02:30 PM & 9 & 13 & 22 & 48 & 9 & 57 & 6 & 26 & 32 & 111 \\
\hline 02:45 PM & 3 & 8 & 11 & 36 & 8 & 44 & 12 & 35 & 47 & 102 \\
\hline Total Volume & 37 & 122 & 159 & 157 & 33 & 190 & 40 & 110 & 150 & 499 \\
\hline \% App. Total & 23.3 & 76.7 & & 82.6 & 17.4 & & 26.7 & 73.3 & & \\
\hline PHF & . 661 & . 575 & . 593 & . 818 & . 825 & . 833 & . 556 & 786 & . 798 & . 826 \\
\hline
\end{tabular}

County of Riverside
File Name: CRVELJEPM
N/S: Elliot Road
E/W: Jean Nicholas Road
Start Date: 9/14/2016
Weather: Clear


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|l|}{02:00 PM} & \multicolumn{3}{|l|}{02:30 PM} & \multicolumn{3}{|l|}{02:45 PM} \\
\hline +0 mins. & 11 & 48 & 59 & 48 & 9 & 57 & 12 & 35 & 47 \\
\hline +15 mins. & 14 & 53 & 67 & 36 & 8 & 44 & 13 & 21 & 34 \\
\hline +30 mins. & 9 & 13 & 22 & 61 & 8 & 69 & 12 & 41 & 53 \\
\hline +45 mins. & 3 & 8 & 11 & 47 & 8 & 55 & 17 & 58 & 75 \\
\hline Total Volume & 37 & 122 & 159 & 192 & 33 & 225 & 54 & 155 & 209 \\
\hline \% App. Total & 23.3 & 76.7 & & 85.3 & 14.7 & & 25.8 & 74.2 & \\
\hline PHF & . 661 & . 575 & . 593 & . 787 & . 917 & . 815 & . 794 & . 668 & . 697 \\
\hline
\end{tabular}

County of Riverside N/S: Pourroy Road E/W: Skyview Road Weather: Clear

File Name : CRVPOSKAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Pourroy Road Southbound} & \multicolumn{3}{|l|}{Pourroy Road Northbound} & \multicolumn{3}{|c|}{Skyview Road Eastbound} & \\
\hline Start Time & Thru & Right & App. Total & Left & Thru & App. Total & Left & Right & App. Total & Int. Total \\
\hline 07:00 AM & 60 & 6 & 66 & 1 & 53 & 54 & 14 & 0 & 14 & 134 \\
\hline 07:15 AM & 34 & 9 & 43 & 1 & 45 & 46 & 5 & 5 & 10 & 99 \\
\hline 07:30 AM & 48 & 7 & 55 & 0 & 30 & 30 & 7 & 8 & 15 & 100 \\
\hline 07:45 AM & 69 & 5 & 74 & 8 & 34 & 42 & 8 & 9 & 17 & 133 \\
\hline Total & 211 & 27 & 238 & 10 & 162 & 172 & 34 & 22 & 56 & 466 \\
\hline 08:00 AM & 52 & 7 & 59 & 18 & 29 & 47 & 9 & 5 & 14 & 120 \\
\hline 08:15 AM & 29 & 15 & 44 & 17 & 20 & 37 & 6 & 7 & 13 & 94 \\
\hline 08:30 AM & 44 & 42 & 86 & 28 & 37 & 65 & 21 & 16 & 37 & 188 \\
\hline 08:45 AM & 22 & 32 & 54 & 14 & 28 & 42 & 77 & 66 & 143 & 239 \\
\hline Total & 147 & 96 & 243 & 77 & 114 & 191 & 113 & 94 & 207 & 641 \\
\hline Grand Total & 358 & 123 & 481 & 87 & 276 & 363 & 147 & 116 & 263 & 1107 \\
\hline Apprch \% & 74.4 & 25.6 & & 24 & 76 & & 55.9 & 44.1 & & \\
\hline Total \% & 32.3 & 11.1 & 43.5 & 7.9 & 24.9 & 32.8 & 13.3 & 10.5 & 23.8 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Pourroy Road Southbound} & \multicolumn{3}{|c|}{Pourroy Road Northbound} & \multicolumn{3}{|c|}{Skyview Road Eastbound} & \\
\hline Start Time & Thru & Right & App. Total & Left & Thru & App. Total & Left & Right & App. Total & Int. Total \\
\hline \multicolumn{11}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{11}{|l|}{Peak Hour for Entire Intersection Begins at 08:00 AM} \\
\hline 08:00 AM & 52 & 7 & 59 & 18 & 29 & 47 & 9 & 5 & 14 & 120 \\
\hline 08:15 AM & 29 & 15 & 44 & 17 & 20 & 37 & 6 & 7 & 13 & 94 \\
\hline 08:30 AM & 44 & 42 & 86 & 28 & 37 & 65 & 21 & 16 & 37 & 188 \\
\hline 08:45 AM & 22 & 32 & 54 & 14 & 28 & 42 & 77 & 66 & 143 & 239 \\
\hline Total Volume & 147 & 96 & 243 & 77 & 114 & 191 & 113 & 94 & 207 & 641 \\
\hline \% App. Total & 60.5 & 39.5 & & 40.3 & 59.7 & & 54.6 & 45.4 & & \\
\hline PHF & . 707 & . 571 & . 706 & . 688 & . 770 & 735 & . 367 & . 356 & 362 & . 671 \\
\hline
\end{tabular}

County of Riverside N/S: Pourroy Road E/W: Skyview Road Weather: Clear

File Name : CRVPOSKAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|l|}{07:45 AM} & \multicolumn{3}{|l|}{07:45 AM} & \multicolumn{3}{|l|}{08:00 AM} \\
\hline +0 mins. & 69 & 5 & 74 & 8 & 34 & 42 & 9 & 5 & 14 \\
\hline +15 mins. & 52 & 7 & 59 & 18 & 29 & 47 & 6 & 7 & 13 \\
\hline +30 mins. & 29 & 15 & 44 & 17 & 20 & 37 & 21 & 16 & 37 \\
\hline +45 mins. & 44 & 42 & 86 & 28 & 37 & 65 & 77 & 66 & 143 \\
\hline Total Volume & 194 & 69 & 263 & 71 & 120 & 191 & 113 & 94 & 207 \\
\hline \% App. Total & 73.8 & 26.2 & & 37.2 & 62.8 & & 54.6 & 45.4 & \\
\hline PHF & . 703 & . 411 & . 765 & . 634 & . 811 & . 735 & . 367 & . 356 & . 362 \\
\hline
\end{tabular}

County of Riverside N/S: Pourroy Road E/W: Skyview Road Weather: Clear

File Name: CRVPOSKPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{10}{|c|}{Groups Printed- Total Volume} & \multirow[b]{3}{*}{Int. Total} \\
\hline & \multicolumn{3}{|c|}{Pourroy Road Southbound} & \multicolumn{3}{|l|}{Pourroy Road Northbound} & \multicolumn{3}{|c|}{Skyview Road Eastbound} & \\
\hline Start Time & Thru & Right & App. Total & Left & Thru & App. Total & Left & Right & App. Total & \\
\hline 02:00 PM & 26 & 1 & 27 & 1 & 45 & 46 & 7 & 0 & 7 & 80 \\
\hline 02:15 PM & 38 & 15 & 53 & 14 & 33 & 47 & 7 & 6 & 13 & 113 \\
\hline 02:30 PM & 52 & 21 & 73 & 7 & 32 & 39 & 15 & 19 & 34 & 146 \\
\hline 02:45 PM & 30 & 22 & 52 & 8 & 35 & 43 & 9 & 7 & 16 & 111 \\
\hline Total & 146 & 59 & 205 & 30 & 145 & 175 & 38 & 32 & 70 & 450 \\
\hline 03:00 PM & 41 & 36 & 77 & 21 & 45 & 66 & 5 & 0 & 5 & 148 \\
\hline 03:15 PM & 24 & 19 & 43 & 24 & 46 & 70 & 36 & 29 & 65 & 178 \\
\hline 03:30 PM & 33 & 6 & 39 & 3 & 56 & 59 & 52 & 46 & 98 & 196 \\
\hline 03:45 PM & 29 & 7 & 36 & 5 & 40 & 45 & 9 & 12 & 21 & 102 \\
\hline Total & 127 & 68 & 195 & 53 & 187 & 240 & 102 & 87 & 189 & 624 \\
\hline 04:00 PM & 33 & 2 & 35 & 5 & 50 & 55 & 11 & 10 & 21 & 111 \\
\hline 04:15 PM & 31 & 5 & 36 & 3 & 32 & 35 & 6 & 7 & 13 & 84 \\
\hline 04:30 PM & 30 & 7 & 37 & 2 & 43 & 45 & 6 & 6 & 12 & 94 \\
\hline 04:45 PM & 35 & 6 & 41 & 5 & 64 & 69 & 1 & 2 & 3 & 113 \\
\hline Total & 129 & 20 & 149 & 15 & 189 & 204 & 24 & 25 & 49 & 402 \\
\hline 05:00 PM & 33 & 6 & 39 & 7 & 30 & 37 & 4 & 5 & 9 & 85 \\
\hline 05:15 PM & 33 & 12 & 45 & 6 & 34 & 40 & 7 & 5 & 12 & 97 \\
\hline 05:30 PM & 35 & 11 & 46 & 2 & 45 & 47 & 7 & 10 & 17 & 110 \\
\hline 05:45 PM & 43 & 7 & 50 & 2 & 34 & 36 & 6 & 7 & 13 & 99 \\
\hline Total & 144 & 36 & 180 & 17 & 143 & 160 & 24 & 27 & 51 & 391 \\
\hline Grand Total & 546 & 183 & 729 & 115 & 664 & 779 & 188 & 171 & 359 & 1867 \\
\hline Apprch \% & 74.9 & 25.1 & & 14.8 & 85.2 & & 52.4 & 47.6 & & \\
\hline Total \% & 29.2 & 9.8 & 39 & 6.2 & 35.6 & 41.7 & 10.1 & 9.2 & 19.2 & \\
\hline
\end{tabular}


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 02:45 PM


County of Riverside N/S: Pourroy Road E/W: Skyview Road Weather: Clear

File Name: CRVPOSKPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 2


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|l|}{02:15 PM} & \multicolumn{3}{|l|}{03:00 PM} & \multicolumn{3}{|l|}{03:15 PM} \\
\hline +0 mins. & 38 & 15 & 53 & 21 & 45 & 66 & 36 & 29 & 65 \\
\hline +15 mins. & 52 & 21 & 73 & 24 & 46 & 70 & 52 & 46 & 98 \\
\hline +30 mins. & 30 & 22 & 52 & 3 & 56 & 59 & 9 & 12 & 21 \\
\hline +45 mins. & 41 & 36 & 77 & 5 & 40 & 45 & 11 & 10 & 21 \\
\hline Total Volume & 161 & 94 & 255 & 53 & 187 & 240 & 108 & 97 & 205 \\
\hline \% App. Total & 63.1 & 36.9 & & 22.1 & 77.9 & & 52.7 & 47.3 & \\
\hline PHF & . 774 & . 653 & . 828 & . 552 & . 835 & . 857 & . 519 & . 527 & . 523 \\
\hline
\end{tabular}

County of Riverside
N/S: Pourroy Road E/W: Thompson Road Weather: Clear

File Name : CRVPOTHAM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Pourroy Road Southbound} & \multicolumn{4}{|c|}{Thompson Road Westbound} & \multicolumn{4}{|c|}{Pourroy Road Northbound} & \multicolumn{4}{|c|}{Thompson Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 07:00 AM & 0 & 52 & 29 & 81 & 1 & 2 & 0 & 3 & 23 & 40 & 0 & 63 & 13 & 0 & 22 & 35 & 182 \\
\hline 07:15 AM & 0 & 45 & 12 & 57 & 1 & 0 & 0 & 1 & 20 & 30 & 0 & 50 & 15 & 0 & 23 & 38 & 146 \\
\hline 07:30 AM & 0 & 56 & 14 & 70 & 1 & 2 & 0 & 3 & 36 & 19 & 0 & 55 & 16 & 1 & 23 & 40 & 168 \\
\hline 07:45 AM & 0 & 92 & 17 & 109 & 0 & 3 & 0 & 3 & 28 & 39 & 0 & 67 & 15 & 1 & 33 & 49 & 228 \\
\hline Total & 0 & 245 & 72 & 317 & 3 & 7 & 0 & 10 & 107 & 128 & 0 & 235 & 59 & 2 & 101 & 162 & 724 \\
\hline 08:00 AM & 1 & 53 & 15 & 69 & 2 & 1 & 0 & 3 & 24 & 50 & 0 & 74 & 10 & 0 & 19 & 29 & 175 \\
\hline 08:15 AM & 0 & 41 & 19 & 60 & 0 & 2 & 0 & 2 & 26 & 48 & 0 & 74 & 10 & 0 & 26 & 36 & 172 \\
\hline 08:30 AM & 0 & 58 & 12 & 70 & 4 & 1 & 0 & 5 & 36 & 29 & 0 & 65 & 9 & 2 & 33 & 44 & 184 \\
\hline 08:45 AM & 1 & 69 & 19 & 89 & 2 & 1 & 1 & 4 & 24 & 26 & 2 & 52 & 14 & 0 & 21 & 35 & 180 \\
\hline Total & 2 & 221 & 65 & 288 & 8 & 5 & 1 & 14 & 110 & 153 & 2 & 265 & 43 & 2 & 99 & 144 & 711 \\
\hline Grand Total & 2 & 466 & 137 & 605 & 11 & 12 & 1 & 24 & 217 & 281 & 2 & 500 & 102 & 4 & 200 & 306 & 1435 \\
\hline Apprch \% & 0.3 & 77 & 22.6 & & 45.8 & 50 & 4.2 & & 43.4 & 56.2 & 0.4 & & 33.3 & 1.3 & 65.4 & & \\
\hline Total \% & 0.1 & 32.5 & 9.5 & 42.2 & 0.8 & 0.8 & 0.1 & 1.7 & 15.1 & 19.6 & 0.1 & 34.8 & 7.1 & 0.3 & 13.9 & 21.3 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Pourroy Road Southbound} & \multicolumn{4}{|c|}{Thompson Road Westbound} & \multicolumn{4}{|c|}{Pourroy Road Northbound} & \multicolumn{4}{|c|}{Thompson Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 07:45 AM} \\
\hline 07:45 AM & 0 & 92 & 17 & 109 & 0 & 3 & 0 & 3 & 28 & 39 & 0 & 67 & 15 & 1 & 33 & 49 & 228 \\
\hline 08:00 AM & 1 & 53 & 15 & 69 & 2 & 1 & 0 & 3 & 24 & 50 & 0 & 74 & 10 & 0 & 19 & 29 & 175 \\
\hline 08:15 AM & 0 & 41 & 19 & 60 & 0 & 2 & 0 & 2 & 26 & 48 & 0 & 74 & 10 & 0 & 26 & 36 & 172 \\
\hline 08:30 AM & 0 & 58 & 12 & 70 & 4 & 1 & 0 & 5 & 36 & 29 & 0 & 65 & 9 & 2 & 33 & 44 & 184 \\
\hline Total Volume & 1 & 244 & 63 & 308 & 6 & 7 & 0 & 13 & 114 & 166 & 0 & 280 & 44 & 3 & 111 & 158 & 759 \\
\hline \% App. Total & 0.3 & 79.2 & 20.5 & & 46.2 & 53.8 & 0 & & 40.7 & 59.3 & 0 & & 27.8 & 1.9 & 70.3 & & \\
\hline PHF & . 250 & . 663 & . 829 & . 706 & . 375 & . 583 & . 000 & . 650 & . 792 & . 830 & . 000 & . 946 & . 733 & . 375 & . 841 & . 806 & . 832 \\
\hline
\end{tabular}

County of Riverside N/S: Pourroy Road E/W: Thompson Road Weather: Clear

File Name : CRVPOTHAM
Site Code : 22116465
Start Date : 9/14/2016
Page No : 2


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{07:00 AM} & \multicolumn{4}{|l|}{08:00 AM} & \multicolumn{4}{|l|}{07:45 AM} & \multicolumn{4}{|l|}{07:00 AM} \\
\hline +0 mins. & 0 & 52 & 29 & 81 & 2 & 1 & 0 & 3 & 28 & 39 & 0 & 67 & 13 & 0 & 22 & 35 \\
\hline +15 mins. & 0 & 45 & 12 & 57 & 0 & 2 & 0 & 2 & 24 & 50 & 0 & 74 & 15 & 0 & 23 & 38 \\
\hline +30 mins. & 0 & 56 & 14 & 70 & 4 & 1 & 0 & 5 & 26 & 48 & 0 & 74 & 16 & 1 & 23 & 40 \\
\hline +45 mins. & 0 & 92 & 17 & 109 & 2 & 1 & 1 & 4 & 36 & 29 & 0 & 65 & 15 & 1 & 33 & 49 \\
\hline Total Volume & 0 & 245 & 72 & 317 & 8 & 5 & 1 & 14 & 114 & 166 & 0 & 280 & 59 & 2 & 101 & 162 \\
\hline \% App. Total & 0 & 77.3 & 22.7 & & 57.1 & 35.7 & 7.1 & & 40.7 & 59.3 & 0 & & 36.4 & 1.2 & 62.3 & \\
\hline PHF & . 000 & . 666 & . 621 & . 727 & . 500 & . 625 & . 250 & . 700 & . 792 & . 830 & . 000 & . 946 & . 922 & . 500 & 765 & . 827 \\
\hline
\end{tabular}

County of Riverside
N/S: Pourroy Road E/W: Thompson Road
Weather: Clear

File Name : CRVPOTHPM
Site Code : 22116465
Start Date: 9/14/2016
Page No : 1

Groups Printed- Total Volume
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Pourroy Road Southbound} & \multicolumn{4}{|c|}{Thompson Road Westbound} & \multicolumn{4}{|c|}{Pourroy Road Northbound} & \multicolumn{4}{|c|}{Thompson Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline 02:00 PM & 0 & 27 & 12 & 39 & 1 & 1 & 0 & 2 & 14 & 42 & 0 & 56 & 16 & 0 & 10 & 26 & 123 \\
\hline 02:15 PM & 0 & 34 & 15 & 49 & 0 & 2 & 0 & 2 & 15 & 38 & 0 & 53 & 10 & 0 & 10 & 20 & 124 \\
\hline 02:30 PM & 0 & 59 & 19 & 78 & 0 & 1 & 0 & 1 & 19 & 27 & 0 & 46 & 11 & 2 & 11 & 24 & 149 \\
\hline 02:45 PM & 1 & 35 & 10 & 46 & 0 & 0 & 1 & 1 & 27 & 36 & 0 & 63 & 28 & 0 & 24 & 52 & 162 \\
\hline Total & 1 & 155 & 56 & 212 & 1 & 4 & 1 & 6 & 75 & 143 & 0 & 218 & 65 & 2 & 55 & 122 & 558 \\
\hline 03:00 PM & 0 & 42 & 16 & 58 & 0 & 2 & 1 & 3 & 30 & 59 & 2 & 91 & 18 & 0 & 28 & 46 & 198 \\
\hline 03:15 PM & 2 & 35 & 13 & 50 & 0 & 1 & 0 & 1 & 43 & 74 & 2 & 119 & 17 & 2 & 21 & 40 & 210 \\
\hline 03:30 PM & 1 & 63 & 14 & 78 & 2 & 0 & 0 & 2 & 42 & 67 & 1 & 110 & 22 & 0 & 25 & 47 & 237 \\
\hline 03:45 PM & 0 & 37 & 13 & 50 & 3 & 0 & 0 & 3 & 19 & 46 & 2 & 67 & 20 & 2 & 23 & 45 & 165 \\
\hline Total & 3 & 177 & 56 & 236 & 5 & 3 & 1 & 9 & 134 & 246 & 7 & 387 & 77 & 4 & 97 & 178 & 810 \\
\hline 04:00 PM & 0 & 35 & 9 & 44 & 2 & 2 & 0 & 4 & 27 & 65 & 0 & 92 & 23 & 0 & 13 & 36 & 176 \\
\hline 04:15 PM & 1 & 29 & 16 & 46 & 2 & 0 & 0 & 2 & 31 & 59 & 2 & 92 & 21 & 3 & 18 & 42 & 182 \\
\hline 04:30 PM & 0 & 31 & 15 & 46 & 0 & 0 & 0 & 0 & 30 & 56 & 0 & 86 & 15 & 0 & 17 & 32 & 164 \\
\hline 04:45 PM & 0 & 44 & 12 & 56 & 0 & 1 & 0 & 1 & 29 & 66 & 0 & 95 & 22 & 1 & 21 & 44 & 196 \\
\hline Total & 1 & 139 & 52 & 192 & 4 & 3 & 0 & 7 & 117 & 246 & 2 & 365 & 81 & 4 & 69 & 154 & 718 \\
\hline 05:00 PM & 0 & 49 & 16 & 65 & 3 & 0 & 0 & 3 & 22 & 49 & 0 & 71 & 19 & 1 & 25 & 45 & 184 \\
\hline 05:15 PM & 1 & 43 & 8 & 52 & 1 & 0 & 0 & 1 & 29 & 51 & 1 & 81 & 24 & 1 & 36 & 61 & 195 \\
\hline 05:30 PM & 0 & 31 & 20 & 51 & 1 & 1 & 0 & 2 & 31 & 52 & 0 & 83 & 19 & 0 & 28 & 47 & 183 \\
\hline 05:45 PM & 0 & 45 & 6 & 51 & 0 & 0 & 0 & 0 & 36 & 52 & 3 & 91 & 22 & 4 & 27 & 53 & 195 \\
\hline Total & 1 & 168 & 50 & 219 & 5 & 1 & 0 & 6 & 118 & 204 & 4 & 326 & 84 & 6 & 116 & 206 & 757 \\
\hline Grand Total & 6 & 639 & 214 & 859 & 15 & 11 & 2 & 28 & 444 & 839 & 13 & 1296 & 307 & 16 & 337 & 660 & 2843 \\
\hline Apprch \% & 0.7 & 74.4 & 24.9 & & 53.6 & 39.3 & 7.1 & & 34.3 & 64.7 & 1 & & 46.5 & 2.4 & 51.1 & & \\
\hline Total \% & 0.2 & 22.5 & 7.5 & 30.2 & 0.5 & 0.4 & 0.1 & 1 & 15.6 & 29.5 & 0.5 & 45.6 & 10.8 & 0.6 & 11.9 & 23.2 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|c|}{Pourroy Road Southbound} & \multicolumn{4}{|c|}{Thompson Road Westbound} & \multicolumn{4}{|c|}{Pourroy Road Northbound} & \multicolumn{4}{|c|}{Thompson Road Eastbound} & \\
\hline Start Time & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Left & Thru & Right & App. Total & Int. Total \\
\hline \multicolumn{18}{|l|}{Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1} \\
\hline \multicolumn{18}{|l|}{Peak Hour for Entire Intersection Begins at 03:00 PM} \\
\hline 03:00 PM & 0 & 42 & 16 & 58 & 0 & 2 & 1 & 3 & 30 & 59 & 2 & 91 & 18 & 0 & 28 & 46 & 198 \\
\hline 03:15 PM & 2 & 35 & 13 & 50 & 0 & 1 & 0 & 1 & 43 & 74 & 2 & 119 & 17 & 2 & 21 & 40 & 210 \\
\hline 03:30 PM & 1 & 63 & 14 & 78 & 2 & 0 & 0 & 2 & 42 & 67 & 1 & 110 & 22 & 0 & 25 & 47 & 237 \\
\hline 03:45 PM & 0 & 37 & 13 & 50 & 3 & 0 & 0 & 3 & 19 & 46 & 2 & 67 & 20 & 2 & 23 & 45 & 165 \\
\hline Total Volume & 3 & 177 & 56 & 236 & 5 & 3 & 1 & 9 & 134 & 246 & 7 & 387 & 77 & 4 & 97 & 178 & 810 \\
\hline \% App. Total & 1.3 & 75 & 23.7 & & 55.6 & 33.3 & 11.1 & & 34.6 & 63.6 & 1.8 & & 43.3 & 2.2 & 54.5 & & \\
\hline PHF & . 375 & . 702 & . 875 & . 756 & . 417 & . 375 & . 250 & . 750 & . 779 & . 831 & . 875 & . 813 & . 875 & . 500 & . 866 & . 947 & . 854 \\
\hline
\end{tabular}

County of Riverside
File Name : CRVPOTHPM
N/S: Pourroy Road
Site Code : 22116465
E/W: Thompson Road
Start Date: 9/14/2016
Weather: Clear


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{4}{|l|}{03:00 PM} & \multicolumn{4}{|l|}{03:30 PM} & \multicolumn{4}{|l|}{03:15 PM} & \multicolumn{4}{|l|}{05:00 PM} \\
\hline +0 mins. & 0 & 42 & 16 & 58 & 2 & 0 & 0 & 2 & 43 & 74 & 2 & 119 & 19 & 1 & 25 & 45 \\
\hline +15 mins. & 2 & 35 & 13 & 50 & 3 & 0 & 0 & 3 & 42 & 67 & 1 & 110 & 24 & 1 & 36 & 61 \\
\hline +30 mins. & 1 & 63 & 14 & 78 & 2 & 2 & 0 & 4 & 19 & 46 & 2 & 67 & 19 & 0 & 28 & 47 \\
\hline +45 mins. & 0 & 37 & 13 & 50 & 2 & 0 & 0 & 2 & 27 & 65 & 0 & 92 & 22 & 4 & 27 & 53 \\
\hline Total Volume & 3 & 177 & 56 & 236 & 9 & 2 & 0 & 11 & 131 & 252 & 5 & 388 & 84 & 6 & 116 & 206 \\
\hline \% App. Total & 1.3 & 75 & 23.7 & & 81.8 & 18.2 & 0 & & 33.8 & 64.9 & 1.3 & & 40.8 & 2.9 & 56.3 & \\
\hline PHF & . 375 & . 702 & . 875 & . 756 & . 750 & . 250 & . 000 & . 688 & . 762 & . 851 & . 625 & . 815 & . 875 & . 375 & . 806 & . 844 \\
\hline
\end{tabular}

\section*{Appendix C Intersection Volumes, Delay, and LOS Calculation Outputs, Existing Conditions}

Temecula Valley Charter School
Vistro File: Q:I...Itvcs.vistro
Report File: Q:\...\Existing AM.pdf

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Left & 5,215.732 & 2.8 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 0.639 & 17.2 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.694 & 12.8 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.839 & 14.3 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & EB Right & 1.448 & 180.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & SB Left & 0.911 & 20.8 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.004 & 10.7 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.000 & 9.4 & A \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.2 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 13.9 & B \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
2.8
5215.73

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 189 & 1 & 0 & 295 & 1 & 0 & 0 & 1 & 2 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 756 & 3 & 0 & 1181 & 3 & 1 & 1 & 4 & 9 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 27 & 89 & 0 & 11 & 73 & 0 & 0 & 20 & 0 & 0 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 106 & 0 & 105 & 105 & 2 & 2 & 2 & 2 \\
\hline g/C, Green / Cycle & 0.00 & 0.88 & 0.00 & 0.88 & 0.88 & 0.02 & 0.02 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.45 & 0.00 & 0.37 & 0.00 & 0.03 & 0.00 & 4693.71 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 74 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1475 & 0 & 2805 & 1252 & 46 & 28 & 60 & 28 \\
\hline d1, Uniform Delay [s] & 59.79 & 1.56 & 0.00 & 1.40 & 0.88 & 58.37 & 57.86 & 60.00 & 57.82 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.29 & 0.00 & 0.47 & 0.00 & 0.38 & 2.37 & 5.22 & 1.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.51 & 0.00 & 0.42 & 0.00 & 0.04 & 0.14 & 0.15 & 0.11 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 2.85 & 0.00 & 1.87 & 0.89 & 58.75 & 60.23 & 65.22 & 59.53 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.53 & 0.00 & 0.18 & 0.00 & 0.07 & 0.14 & 0.36 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 13.17 & 0.00 & 4.54 & 0.03 & 1.64 & 3.44 & 9.08 & 2.57 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 0.95 & 0.00 & 0.33 & 0.00 & 0.12 & 0.25 & 0.65 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 23.70 & 0.00 & 8.17 & 0.05 & 2.96 & 6.20 & 16.34 & 4.62 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 2.85 & 2.85 & 0.00 & 1.87 & 0.89 & 58.75 & 58.75 & 60.23 & 65.22 & 65.22 & 59.53 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{2.94} & \multicolumn{3}{|c|}{1.86} & \multicolumn{3}{|c|}{59.74} & \multicolumn{3}{|c|}{63.80} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{2.84} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{5215.732} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes
\(\begin{array}{cc}\text { Delay (sec / veh): } & 17.2 \\ \text { Level Of Service: } & \text { B } \\ \text { Volume to Capacity }(\mathrm{v} / \mathrm{c}): & 0.639\end{array}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 166 & 45 & 19 & 264 & 15 & 10 & 4 & 9 & 49 & 3 & 16 \\
\hline Total Analysis Volume [veh/h] & 27 & 664 & 179 & 76 & 1057 & 61 & 42 & 15 & 34 & 194 & 13 & 64 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 21 & 0 & 11 & 21 & 0 & 15 & 19 & 0 & 19 & 23 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 34 & 34 & 5 & 37 & 37 & 4 & 4 & 4 & 10 & 11 & 11 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.04 & 0.49 & 0.49 & 0.08 & 0.52 & 0.52 & 0.06 & 0.06 & 0.06 & 0.15 & 0.15 & 0.15 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.02 & 0.21 & 0.13 & 0.05 & 0.33 & 0.04 & 0.03 & 0.01 & 0.02 & 0.12 & 0.01 & 0.04 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 67 & 1546 & 690 & 125 & 1661 & 742 & 91 & 105 & 89 & 235 & 256 & 217 \\
\hline d1, Uniform Delay [s] & 32.74 & 11.78 & 10.67 & 31.28 & 12.06 & 8.42 & 32.03 & 31.10 & 31.58 & 29.04 & 25.38 & 26.37 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.86 & 0.87 & 0.91 & 4.72 & 1.87 & 0.22 & 3.62 & 0.62 & 2.68 & 7.29 & 0.08 & 0.75 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.40 & 0.43 & 0.26 & 0.61 & 0.64 & 0.08 & 0.46 & 0.14 & 0.38 & 0.83 & 0.05 & 0.29 \\
\hline d, Delay for Lane Group [s/veh] & 36.60 & 12.65 & 11.58 & 36.01 & 13.93 & 8.64 & 35.65 & 31.72 & 34.25 & 36.33 & 25.46 & 27.12 \\
\hline Lane Group LOS & D & B & B & D & B & A & D & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.46 & 2.51 & 1.31 & 1.24 & 4.25 & 0.35 & 0.76 & 0.25 & 0.60 & 3.36 & 0.18 & 0.91 \\
\hline 50th-Percentile Queue Length [ft] & 11.53 & 62.70 & 32.69 & 30.97 & 106.19 & 8.81 & 18.98 & 6.27 & 15.04 & 83.91 & 4.38 & 22.80 \\
\hline 95th-Percentile Queue Length [veh] & 0.83 & 4.51 & 2.35 & 2.23 & 7.63 & 0.63 & 1.37 & 0.45 & 1.08 & 6.04 & 0.32 & 1.64 \\
\hline 95th-Percentile Queue Length [ft] & 20.76 & 112.85 & 58.85 & 55.75 & 190.70 & 15.86 & 34.16 & 11.28 & 27.07 & 151.05 & 7.89 & 41.04 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.60 & 12.65 & 11.58 & 36.01 & 13.93 & 8.64 & 35.65 & 31.72 & 34.25 & 36.33 & 25.46 & 27.12 \\
\hline Movement LOS & D & B & B & D & B & A & D & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.17} & \multicolumn{3}{|c|}{15.06} & \multicolumn{3}{|c|}{34.48} & \multicolumn{3}{|c|}{33.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.19} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.639} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
12.8

B
0.694

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 195 & 21 & 13 & 311 & 3 & 5 & 3 & 3 & 40 & 6 & 21 \\
\hline Total Analysis Volume [veh/h] & 24 & 779 & 82 & 51 & 1243 & 13 & 19 & 11 & 13 & 160 & 22 & 84 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 21 & 13 & 0 & 40 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 0.00 & 0.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 0.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 41 & 41 & 4 & 43 & 43 & 2 & 0 & 0 & 12 & 6 & 6 \\
\hline g / C, Green / Cycle & 0.04 & 0.59 & 0.59 & 0.06 & 0.61 & 0.61 & 0.03 & 0.00 & 0.00 & 0.18 & 0.09 & 0.09 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.24 & 0.06 & 0.02 & 0.39 & 0.01 & 0.01 & 0.01 & 0.01 & 0.13 & 0.01 & 0.06 \\
\hline s, saturation flow rate [veh/h] & 1258 & 3192 & 1425 & 2443 & 3192 & 1425 & 1597 & 1676 & 1425 & 1258 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 124 & 1868 & 834 & 206 & 1950 & 870 & 53 & 0 & 0 & 303 & 149 & 127 \\
\hline d1, Uniform Delay [s] & 34.59 & 7.99 & 6.41 & 32.90 & 8.71 & 5.37 & 33.25 & 0.00 & 0.00 & 28.47 & 29.55 & 30.99 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 0.75 & 0.69 & 0.24 & 0.62 & 1.61 & 0.03 & 4.12 & 0.00 & 0.00 & 1.43 & 0.45 & 5.82 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.19 & 0.42 & 0.10 & 0.25 & 0.64 & 0.01 & 0.36 & 0.00 & 0.00 & 0.53 & 0.15 & 0.66 \\
\hline d, Delay for Lane Group [s/veh] & 35.34 & 8.68 & 6.65 & 33.52 & 10.32 & 5.40 & 37.36 & 0.00 & 0.00 & 29.90 & 30.00 & 36.81 \\
\hline Lane Group LOS & D & A & A & C & B & A & D & A & A & C & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.40 & 2.25 & 0.40 & 0.40 & 4.01 & 0.05 & 0.37 & 0.00 & 0.00 & 2.60 & 0.35 & 1.53 \\
\hline 50th-Percentile Queue Length [ft] & 9.91 & 56.14 & 10.09 & 9.99 & 100.29 & 1.34 & 9.29 & 0.00 & 0.00 & 65.02 & 8.76 & 38.33 \\
\hline 95th-Percentile Queue Length [veh] & 0.71 & 4.04 & 0.73 & 0.72 & 7.22 & 0.10 & 0.67 & 0.00 & 0.00 & 4.68 & 0.63 & 2.76 \\
\hline 95th-Percentile Queue Length [ft] & 17.84 & 101.05 & 18.16 & 17.97 & 180.52 & 2.42 & 16.72 & 0.00 & 0.00 & 117.04 & 15.77 & 68.99 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.34 & 8.68 & 6.65 & 33.52 & 10.32 & 5.40 & 37.36 & 0.00 & 0.00 & 29.90 & 30.00 & 36.81 \\
\hline Movement LOS & D & A & A & C & B & A & D & A & A & C & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.22} & \multicolumn{3}{|c|}{11.18} & \multicolumn{3}{|c|}{16.51} & \multicolumn{3}{|c|}{32.09} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{12.80} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.694} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 14.3 \\
Level Of Service: & B \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.839
\end{tabular}

B
0.839

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 24 & 188 & 1 & 2 & 353 & 26 & 16 & 1 & 34 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 98 & 753 & 5 & 7 & 1410 & 103 & 65 & 5 & 137 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 33 & 33 & 1 & 28 & 28 & 5 & 7 & 7 & 0 & 3 & 3 \\
\hline g / C, Green / Cycle & 0.10 & 0.58 & 0.58 & 0.01 & 0.49 & 0.49 & 0.08 & 0.12 & 0.12 & 0.01 & 0.05 & 0.05 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.24 & 0.00 & 0.00 & 0.44 & 0.07 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 156 & 1842 & 822 & 21 & 1572 & 702 & 127 & 204 & 173 & 9 & 80 & 68 \\
\hline d1, Uniform Delay [s] & 24.56 & 6.63 & 5.09 & 27.70 & 13.07 & 7.87 & 25.00 & 21.92 & 24.18 & 28.04 & 25.77 & 25.82 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.10 & 0.15 & 0.00 & 8.96 & 2.07 & 0.10 & 3.13 & 0.05 & 7.86 & 18.23 & 0.33 & 0.66 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.63 & 0.41 & 0.01 & 0.33 & 0.90 & 0.15 & 0.51 & 0.02 & 0.79 & 0.32 & 0.06 & 0.10 \\
\hline d, Delay for Lane Group [s/veh] & 28.67 & 6.78 & 5.09 & 36.66 & 15.14 & 7.96 & 28.13 & 21.97 & 32.04 & 46.27 & 26.09 & 26.48 \\
\hline Lane Group LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.24 & 1.33 & 0.01 & 0.13 & 5.44 & 0.46 & 0.89 & 0.06 & 2.03 & 0.09 & 0.07 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 30.92 & 33.22 & 0.35 & 3.32 & 135.94 & 11.42 & 22.36 & 1.44 & 50.79 & 2.15 & 1.69 & 2.43 \\
\hline 95th-Percentile Queue Length [veh] & 2.23 & 2.39 & 0.02 & 0.24 & 9.26 & 0.82 & 1.61 & 0.10 & 3.66 & 0.15 & 0.12 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 55.65 & 59.79 & 0.62 & 5.98 & 231.55 & 20.56 & 40.24 & 2.58 & 91.43 & 3.87 & 3.05 & 4.38 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 28.67 & 6.78 & 5.09 & 36.66 & 15.14 & 7.96 & 28.13 & 21.97 & 32.04 & 46.27 & 26.09 & 26.48 \\
\hline Movement LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.28} & \multicolumn{3}{|c|}{14.75} & \multicolumn{3}{|c|}{30.57} & \multicolumn{3}{|c|}{30.31} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.30} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.839} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
180.6

F
1.448

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 100 & 181 & 26 & 6 & 354 & 24 & 18 & 33 & 148 & 58 & 65 & 5 \\
\hline Total Analysis Volume [veh/h] & 398 & 726 & 105 & 23 & 1415 & 97 & 73 & 131 & 594 & 232 & 259 & 19 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 26 & 0 & 39 & 40 & 0 & 44 & 38 & 38 & 17 & 11 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 53 & 53 & 4 & 36 & 36 & 7 & 34 & 34 & 13 & 40 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.03 & 0.30 & 0.30 & 0.06 & 0.28 & 0.28 & 0.11 & 0.33 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.25 & 0.25 & 0.25 & 0.01 & 0.44 & 0.07 & 0.05 & 0.08 & 0.42 & 0.15 & 0.17 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1603 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1656 \\
\hline c, Capacity [veh/h] & 279 & 745 & 713 & 50 & 960 & 429 & 92 & 473 & 402 & 173 & 552 \\
\hline d1, Uniform Delay [s] & 49.50 & 24.78 & 24.80 & 57.13 & 41.95 & 31.47 & 55.85 & 33.52 & 43.06 & 53.50 & 32.05 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 210.55 & 3.14 & 3.30 & 6.47 & 218.68 & 1.22 & 14.23 & 0.31 & 227.28 & 186.98 & 0.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.42 & 0.57 & 0.57 & 0.46 & 1.47 & 0.23 & 0.80 & 0.28 & 1.48 & 1.34 & 0.50 \\
\hline d, Delay for Lane Group [s/veh] & 260.05 & 27.91 & 28.10 & 63.60 & 260.62 & 32.69 & 70.08 & 33.83 & 270.33 & 240.48 & 32.76 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.30 & 8.89 & 8.56 & 0.75 & 42.42 & 2.15 & 2.55 & 3.03 & 37.20 & 14.19 & 6.57 \\
\hline 50th-Percentile Queue Length [ft] & 607.40 & 222.14 & 214.07 & 18.74 & 1060.61 & 53.86 & 63.64 & 75.71 & 929.89 & 354.85 & 164.13 \\
\hline 95th-Percentile Queue Length [veh] & 37.66 & 13.77 & 13.36 & 1.35 & 64.90 & 3.88 & 4.58 & 5.45 & 57.37 & 22.65 & 10.77 \\
\hline 95th-Percentile Queue Length [ft] & 941.55 & 344.36 & 334.05 & 33.73 & 1622.56 & 96.94 & 114.56 & 136.28 & 1434.25 & 566.23 & 269.18 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 260.05 & 27.99 & 28.10 & 63.60 & 260.62 & 32.69 & 70.08 & 33.83 & 270.33 & 240.48 & 32.76 & 32.76 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{103.15} & \multicolumn{3}{|c|}{243.27} & \multicolumn{3}{|c|}{213.19} & \multicolumn{3}{|c|}{127.25} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{180.55} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.448} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 20.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.911
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 237 & 58 & 84 & 456 & 101 & 65 \\
\hline Total Analysis Volume [veh/h] & 946 & 232 & 334 & 1824 & 402 & 261 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 26 & 45 & 25 & 25 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 27 & 17 & 47 & 15 & 15 \\
\hline g / C, Green / Cycle & 0.38 & 0.38 & 0.24 & 0.68 & 0.21 & 0.21 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.16 & 0.21 & 0.57 & 0.13 & 0.18 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1213 & 542 & 379 & 2154 & 655 & 301 \\
\hline d1, Uniform Delay [s] & 19.15 & 16.09 & 25.78 & 8.66 & 25.06 & 26.70 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.20 & 0.50 & 0.11 & 0.15 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.00 & 2.47 & 11.31 & 4.35 & 0.94 & 10.24 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.43 & 0.88 & 0.85 & 0.61 & 0.87 \\
\hline d, Delay for Lane Group [s/veh] & 24.14 & 18.56 & 37.09 & 13.01 & 26.00 & 36.95 \\
\hline Lane Group LOS & C & B & D & B & C \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 6.23 & 2.59 & 5.77 & 6.20 & 2.97 & 4.84 \\
\hline 50th-Percentile Queue Length [ft] & 155.87 & 64.85 & 144.15 & 154.94 & 74.18 & 121.09 \\
\hline 95th-Percentile Queue Length [veh] & 10.33 & 4.67 & 9.70 & 10.28 & 5.34 & 8.45 \\
\hline 95th-Percentile Queue Length [ft] & 258.25 & 116.74 & 242.60 & 257.01 & 133.52 & 211.32 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 24.14 & 18.56 & 37.09 & 13.01 & 26.00 \\
\hline Movement LOS & C & B & D & B & C \\
\hline d_A, Approach Delay [s/veh] & 23.04 & 16.74 & D & \\
\hline Approach LOS & C & B & \\
\hline d_I, Intersection Delay [s/veh] & 20.85 & C \\
\hline Intersection LOS & C & \\
\hline Intersection V/C & 0.911 \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.004
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 27 & 1 & 1 & 30 & 1 \\
\hline Total Analysis Volume [veh/h] & 3 & 108 & 5 & 4 & 120 & 4 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.10 & 0.00 & 0.00 & 0.07 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.67 & 8.75 & 0.00 & 0.00 & 7.41 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.35 & 0.35 & 0.00 & 0.00 & 0.24 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 8.76 & 8.76 & 0.00 & 0.00 & 6.03 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{8.80} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.18} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.65} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec /veh): & 9.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & A \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.000
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 0 & 17 & 0 & 0 & 4 \\
\hline Total Analysis Volume [veh/h] & 0 & 0 & 66 & 0 & 0 & 18 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.00 & 0.02 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.31 & 0.00 & 9.41 & 8.37 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.13 & 0.00 & 0.05 & 0.05 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.18 & 0.00 & 1.26 & 1.26 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.31} & \multicolumn{2}{|c|}{8.37} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.54} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 29 & 42 & 55 & 36 & 42 & 35 \\
\hline Total Analysis Volume [veh/h] & 115 & 170 & 219 & 143 & 168 & 140 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.84 & 0.53 & 0.53 & 1.35 & 1.19 & 1.36 & 0.83 \\
\hline 95th-Percentile Queue Length [ft] & 20.98 & 13.30 & 13.30 & 33.84 & 29.80 & 34.08 & 20.85 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.81} & \multicolumn{2}{|c|}{11.33} & \multicolumn{2}{|c|}{11.44} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.21} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 13.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 34 & 50 & 0 & 0 & 73 & 19 & 13 & 1 & 33 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 137 & 200 & 0 & 1 & 293 & 76 & 53 & 4 & 133 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 3.12 & 3.46 & 0.34 & 0.02 & 0.80 \\
\hline 95th-Percentile Queue Length [ft] & 77.93 & 86.50 & 8.56 & 0.54 & 20.09 \\
\hline Approach Delay [s/veh] & 14.84 & 15.06 & 10.15 & 0.09 \\
\hline Approach LOS & B & C & B & \\
\hline Intersection Delay [s/veh] & \multicolumn{4}{|c|}{13.88} \\
\hline Intersection LOS & B \\
\hline
\end{tabular}

Traffic Volume - Future Total Volume


Version 4.00-03
Traffic Volume - Future Total Volume


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\Existing AM_new.pdf

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Left & 0.628 & 2.8 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 0.639 & 17.2 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.700 & 15.2 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.779 & 15.7 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.448 & 180.4 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.943 & 21.0 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.004 & 10.7 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.182 & 19.0 & C \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.2 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 13.9 & B \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
2.8

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
A
0.628

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 189 & 1 & 0 & 295 & 1 & 0 & 0 & 1 & 2 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 756 & 3 & 0 & 1181 & 3 & 1 & 1 & 4 & 9 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 80 & 0 & 11 & 80 & 0 & 0 & 29 & 0 & 0 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 106 & 0 & 105 & 105 & 2 & 2 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.00 & 0.88 & 0.00 & 0.88 & 0.88 & 0.02 & 0.02 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.45 & 0.00 & 0.37 & 0.00 & 0.01 & 0.00 & 0.11 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 161 & 1425 & 80 & 1425 \\
\hline c, Capacity [veh/h] & 7 & 1474 & 1 & 2802 & 1251 & 48 & 28 & 62 & 28 \\
\hline d1, Uniform Delay [s] & 59.71 & 1.58 & 0.00 & 1.42 & 0.90 & 57.88 & 57.81 & 59.97 & 57.77 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 8.00 & 1.29 & 0.00 & 0.47 & 0.00 & 0.35 & 2.30 & 1.08 & 1.66 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.13 & 0.51 & 0.00 & 0.42 & 0.00 & 0.04 & 0.14 & 0.15 & 0.11 \\
\hline d, Delay for Lane Group [s/veh] & 67.71 & 2.87 & 0.00 & 1.89 & 0.90 & 58.23 & 60.11 & 61.05 & 59.43 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.53 & 0.00 & 0.18 & 0.00 & 0.06 & 0.14 & 0.29 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 0.57 & 13.19 & 0.00 & 4.54 & 0.03 & 1.61 & 3.44 & 7.35 & 2.56 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 0.95 & 0.00 & 0.33 & 0.00 & 0.12 & 0.25 & 0.53 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 1.02 & 23.74 & 0.00 & 8.18 & 0.05 & 2.90 & 6.18 & 13.23 & 4.61 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 67.71 & 2.87 & 2.87 & 0.00 & 1.89 & 0.90 & 58.23 & 58.23 & 60.11 & 61.05 & 61.05 & 59.43 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{2.96} & \multicolumn{3}{|c|}{1.88} & \multicolumn{3}{|c|}{59.49} & \multicolumn{3}{|c|}{60.64} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{2.84} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.628} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes
\(\begin{array}{cc}\text { Delay (sec / veh): } & 17.2 \\ \text { Level Of Service: } & \mathrm{B} \\ \text { Volume to Capacity }(\mathrm{v} / \mathrm{c}): & 0.639\end{array}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 166 & 45 & 19 & 264 & 15 & 10 & 4 & 9 & 49 & 3 & 16 \\
\hline Total Analysis Volume [veh/h] & 27 & 664 & 179 & 76 & 1057 & 61 & 42 & 15 & 34 & 194 & 13 & 64 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 15 & 19 & 0 & 21 & 25 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 34 & 34 & 5 & 37 & 37 & 4 & 4 & 4 & 10 & 11 & 11 \\
\hline g / C, Green / Cycle & 0.04 & 0.48 & 0.48 & 0.08 & 0.52 & 0.52 & 0.06 & 0.06 & 0.06 & 0.15 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.21 & 0.13 & 0.05 & 0.33 & 0.04 & 0.03 & 0.01 & 0.02 & 0.12 & 0.01 & 0.04 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 67 & 1544 & 689 & 125 & 1659 & 741 & 91 & 105 & 89 & 236 & 257 & 218 \\
\hline d1, Uniform Delay [s] & 32.74 & 11.81 & 10.70 & 31.28 & 12.09 & 8.45 & 32.03 & 31.10 & 31.57 & 29.00 & 25.34 & 26.33 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.86 & 0.88 & 0.91 & 4.72 & 1.88 & 0.22 & 3.62 & 0.62 & 2.67 & 7.05 & 0.08 & 0.74 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.40 & 0.43 & 0.26 & 0.61 & 0.64 & 0.08 & 0.46 & 0.14 & 0.38 & 0.82 & 0.05 & 0.29 \\
\hline d, Delay for Lane Group [s/veh] & 36.60 & 12.69 & 11.61 & 36.01 & 13.97 & 8.67 & 35.65 & 31.72 & 34.25 & 36.05 & 25.42 & 27.07 \\
\hline Lane Group LOS & D & B & B & D & B & A & D & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.46 & 2.51 & 1.31 & 1.24 & 4.26 & 0.35 & 0.76 & 0.25 & 0.60 & 3.34 & 0.18 & 0.91 \\
\hline 50th-Percentile Queue Length [ft] & 11.53 & 62.84 & 32.77 & 30.97 & 106.48 & 8.83 & 18.98 & 6.27 & 15.04 & 83.51 & 4.38 & 22.77 \\
\hline 95th-Percentile Queue Length [veh] & 0.83 & 4.52 & 2.36 & 2.23 & 7.64 & 0.64 & 1.37 & 0.45 & 1.08 & 6.01 & 0.32 & 1.64 \\
\hline 95th-Percentile Queue Length [ft] & 20.76 & 113.11 & 58.98 & 55.75 & 191.10 & 15.90 & 34.16 & 11.28 & 27.07 & 150.32 & 7.88 & 40.99 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.60 & 12.69 & 11.61 & 36.01 & 13.97 & 8.67 & 35.65 & 31.72 & 34.25 & 36.05 & 25.42 & 27.07 \\
\hline Movement LOS & D & B & B & D & B & A & D & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.21} & \multicolumn{3}{|c|}{15.10} & \multicolumn{3}{|c|}{34.48} & \multicolumn{3}{|c|}{33.42} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.20} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.639} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
15.2

B
0.700

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 195 & 21 & 13 & 311 & 3 & 5 & 3 & 3 & 40 & 6 & 21 \\
\hline Total Analysis Volume [veh/h] & 24 & 779 & 82 & 51 & 1243 & 13 & 19 & 11 & 13 & 160 & 22 & 84 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 11 & 0 & 19 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 2 & 30 & 30 & 4 & 32 & 32 & 2 & 2 & 2 & 8 & 8 & 8 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.07 & 0.53 & 0.53 & 0.03 & 0.04 & 0.04 & 0.13 & 0.13 & 0.13 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.24 & 0.06 & 0.02 & 0.39 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.06 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 64 & 1595 & 712 & 212 & 1686 & 752 & 53 & 67 & 57 & 202 & 223 & 190 \\
\hline d1, Uniform Delay [s] & 28.15 & 9.96 & 7.99 & 26.54 & 10.97 & 6.76 & 28.46 & 27.91 & 27.98 & 25.51 & 22.90 & 24.02 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.65 & 1.07 & 0.33 & 0.58 & 2.93 & 0.04 & 4.10 & 1.15 & 2.03 & 6.90 & 0.19 & 1.62 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.38 & 0.49 & 0.12 & 0.24 & 0.74 & 0.02 & 0.36 & 0.16 & 0.23 & 0.79 & 0.10 & 0.44 \\
\hline d, Delay for Lane Group [s/veh] & 31.80 & 11.03 & 8.32 & 27.13 & 13.90 & 6.80 & 32.56 & 29.06 & 30.01 & 32.42 & 23.09 & 25.64 \\
\hline Lane Group LOS & C & B & A & C & B & A & C & C & C & C & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.36 & 2.45 & 0.44 & 0.32 & 4.58 & 0.06 & 0.32 & 0.17 & 0.21 & 2.47 & 0.27 & 1.12 \\
\hline 50th-Percentile Queue Length [ft] & 8.93 & 61.31 & 10.98 & 7.91 & 114.47 & 1.47 & 7.98 & 4.23 & 5.19 & 61.72 & 6.76 & 28.01 \\
\hline 95th-Percentile Queue Length [veh] & 0.64 & 4.41 & 0.79 & 0.57 & 8.09 & 0.11 & 0.57 & 0.30 & 0.37 & 4.44 & 0.49 & 2.02 \\
\hline 95th-Percentile Queue Length [ft] & 16.08 & 110.37 & 19.76 & 14.23 & 202.20 & 2.65 & 14.37 & 7.62 & 9.33 & 111.09 & 12.16 & 50.42 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 31.80 & 11.03 & 8.32 & 27.13 & 13.90 & 6.80 & 32.56 & 29.06 & 30.01 & 32.42 & 23.09 & 25.64 \\
\hline Movement LOS & C & B & A & C & B & A & C & C & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.34} & \multicolumn{3}{|c|}{14.34} & \multicolumn{3}{|c|}{30.89} & \multicolumn{3}{|c|}{29.51} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.18} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.700} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
15.7

B
0.779

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 24 & 188 & 1 & 2 & 353 & 26 & 16 & 1 & 34 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 98 & 753 & 5 & 7 & 1410 & 103 & 65 & 5 & 137 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 20 & 0 & 11 & 20 & 0 & 20 & 28 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 44 & 44 & 1 & 39 & 39 & 5 & 8 & 8 & 0 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.09 & 0.63 & 0.63 & 0.01 & 0.56 & 0.56 & 0.07 & 0.12 & 0.12 & 0.01 & 0.05 & 0.05 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.24 & 0.00 & 0.00 & 0.44 & 0.07 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 139 & 2008 & 896 & 23 & 1777 & 793 & 118 & 203 & 173 & 12 & 92 & 78 \\
\hline d1, Uniform Delay [s] & 31.21 & 6.33 & 4.85 & 34.26 & 12.36 & 7.44 & 31.42 & 27.21 & 30.01 & 34.67 & 31.47 & 31.53 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.44 & 0.54 & 0.01 & 7.00 & 3.74 & 0.34 & 4.00 & 0.05 & 7.96 & 10.74 & 0.24 & 0.49 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.71 & 0.38 & 0.01 & 0.30 & 0.79 & 0.13 & 0.55 & 0.02 & 0.79 & 0.25 & 0.05 & 0.09 \\
\hline d, Delay for Lane Group [s/veh] & 37.65 & 6.86 & 4.86 & 41.27 & 16.10 & 7.78 & 35.42 & 27.26 & 37.97 & 45.42 & 31.71 & 32.02 \\
\hline Lane Group LOS & D & A & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.69 & 1.71 & 0.02 & 0.15 & 6.69 & 0.58 & 1.16 & 0.07 & 2.54 & 0.08 & 0.08 & 0.12 \\
\hline 50th-Percentile Queue Length [ft] & 42.18 & 42.65 & 0.47 & 3.80 & 167.28 & 14.54 & 28.98 & 1.86 & 63.56 & 2.12 & 2.10 & 3.00 \\
\hline 95th-Percentile Queue Length [veh] & 3.04 & 3.07 & 0.03 & 0.27 & 10.93 & 1.05 & 2.09 & 0.13 & 4.58 & 0.15 & 0.15 & 0.22 \\
\hline 95th-Percentile Queue Length [ft] & 75.93 & 76.77 & 0.84 & 6.85 & 273.34 & 26.18 & 52.16 & 3.34 & 114.41 & 3.82 & 3.79 & 5.40 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 37.65 & 6.86 & 4.86 & 41.27 & 16.10 & 7.78 & 35.42 & 27.26 & 37.97 & 45.42 & 31.71 & 32.02 \\
\hline Movement LOS & D & A & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.38} & \multicolumn{3}{|c|}{15.65} & \multicolumn{3}{|c|}{36.91} & \multicolumn{3}{|c|}{34.60} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.72} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.779} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
180.4

F
1.448

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 100 & 181 & 26 & 6 & 354 & 24 & 18 & 33 & 148 & 58 & 65 & 5 \\
\hline Total Analysis Volume [veh/h] & 398 & 726 & 105 & 23 & 1415 & 97 & 73 & 131 & 594 & 232 & 259 & 19 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 26 & 0 & 39 & 40 & 0 & 37 & 39 & 39 & 16 & 18 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 53 & 53 & 4 & 36 & 36 & 7 & 35 & 35 & 12 & 40 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.03 & 0.30 & 0.30 & 0.06 & 0.29 & 0.29 & 0.10 & 0.33 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.25 & 0.25 & 0.25 & 0.01 & 0.44 & 0.07 & 0.05 & 0.08 & 0.42 & 0.15 & 0.17 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1603 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1656 \\
\hline c, Capacity [veh/h] & 279 & 746 & 713 & 50 & 961 & 429 & 92 & 487 & 414 & 160 & 552 \\
\hline d1, Uniform Delay [s] & 49.50 & 24.75 & 24.78 & 57.13 & 41.93 & 31.45 & 55.86 & 32.77 & 42.57 & 54.00 & 32.07 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 210.55 & 3.13 & 3.29 & 6.47 & 218.11 & 1.22 & 14.34 & 0.29 & 209.17 & 235.00 & 0.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.42 & 0.57 & 0.57 & 0.46 & 1.47 & 0.23 & 0.80 & 0.27 & 1.43 & 1.45 & 0.50 \\
\hline d, Delay for Lane Group [s/veh] & 260.05 & 27.89 & 28.07 & 63.60 & 260.04 & 32.67 & 70.20 & 33.06 & 251.74 & 289.00 & 32.78 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.30 & 8.88 & 8.56 & 0.75 & 42.39 & 2.15 & 2.55 & 2.99 & 36.16 & 15.24 & 6.57 \\
\hline 50th-Percentile Queue Length [ft] & 607.40 & 222.06 & 213.99 & 18.74 & 1059.69 & 53.84 & 63.70 & 74.70 & 903.89 & 380.96 & 164.14 \\
\hline 95th-Percentile Queue Length [veh] & 37.66 & 13.77 & 13.36 & 1.35 & 64.83 & 3.88 & 4.59 & 5.38 & 55.46 & 24.51 & 10.77 \\
\hline 95th-Percentile Queue Length [ft] & 941.55 & 344.25 & 333.94 & 33.73 & 1620.82 & 96.91 & 114.66 & 134.46 & 1386.55 & 612.71 & 269.20 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 260.05 & 27.96 & 28.07 & 63.60 & 260.04 & 32.67 & 70.20 & 33.06 & 251.74 & 289.00 & 32.78 & 32.78 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{103.13} & \multicolumn{3}{|c|}{242.73} & \multicolumn{3}{|c|}{199.24} & \multicolumn{3}{|c|}{149.34} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{180.38} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.448} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 21.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.943
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 237 & 58 & 84 & 456 & 101 & 65 \\
\hline Total Analysis Volume [veh/h] & 946 & 232 & 334 & 1824 & 402 & 261 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 22 & 41 & 19 & 19 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 21 & 14 & 39 & 13 & 13 \\
\hline g / C, Green / Cycle & 0.35 & 0.35 & 0.24 & 0.66 & 0.21 & 0.21 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.16 & 0.21 & 0.57 & 0.13 & 0.18 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1108 & 495 & 385 & 2089 & 659 & 303 \\
\hline d1, Uniform Delay [s] & 18.22 & 15.31 & 21.92 & 8.38 & 21.44 & 22.84 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.21 & 0.50 & 0.11 & 0.22 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 8.40 & 3.17 & 10.92 & 5.41 & 0.92 & 13.66 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.85 & 0.47 & 0.87 & 0.87 & 0.61 & 0.86 \\
\hline d, Delay for Lane Group [s/veh] & 26.62 & 18.48 & 32.84 & 13.79 & 22.36 & 36.50 \\
\hline Lane Group LOS & C & B & C & B & C & D \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 5.90 & 2.33 & 4.83 & 5.26 & 2.46 & 4.43 \\
\hline 50th-Percentile Queue Length [ft] & 147.40 & 58.33 & 120.65 & 131.38 & 61.42 & 110.79 \\
\hline 95th-Percentile Queue Length [veh] & 9.88 & 4.20 & 8.43 & 9.02 & 4.42 & 7.88 \\
\hline 95th-Percentile Queue Length [ft] & 246.96 & 105.00 & 210.72 & 225.38 & 110.56 & 197.10 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 26.62 & 18.48 & 32.84 & 13.79 & 22.36 \\
\hline Movement LOS & C & B & C & B & C \\
\hline d_A, Approach Delay [s/veh] & 25.02 & 16.74 & D \\
\hline Approach LOS & C & B & \\
\hline d_I, Intersection Delay [s/veh] & 21.03 & C \\
\hline Intersection LOS & C \\
\hline Intersection V/C & 0.943 \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.004
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\xi
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 27 & 1 & 1 & 30 & 1 \\
\hline Total Analysis Volume [veh/h] & 3 & 108 & 5 & 4 & 120 & 4 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.10 & 0.00 & 0.00 & 0.07 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.67 & 8.75 & 0.00 & 0.00 & 7.41 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.35 & 0.35 & 0.00 & 0.00 & 0.24 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 8.76 & 8.76 & 0.00 & 0.00 & 6.03 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{8.80} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.18} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.65} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 19.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.182
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 64 & 4 & 32 & 47 & 17 & 43 \\
\hline Total Analysis Volume [veh/h] & 255 & 18 & 127 & 186 & 66 & 172 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.10 & 0.00 & 0.18 & 0.22 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.09 & 0.00 & 18.97 & 13.72 \\
\hline Movement LOS & A & A & A & A & C & B \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.33 & 0.00 & 1.94 & 1.94 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 8.17 & 0.00 & 48.60 & 48.60 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.28} & \multicolumn{2}{|c|}{15.17} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{5.63} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 29 & 42 & 55 & 36 & 42 & 35 \\
\hline Total Analysis Volume [veh/h] & 115 & 170 & 219 & 143 & 168 & 140 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.84 & 0.53 & 0.53 & 1.35 & 1.19 & 1.36 & 0.83 \\
\hline 95th-Percentile Queue Length [ft] & 20.98 & 13.30 & 13.30 & 33.84 & 29.80 & 34.08 & 20.85 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.81} & \multicolumn{2}{|c|}{11.33} & \multicolumn{2}{|c|}{11.44} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.21} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 13.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 34 & 50 & 0 & 0 & 73 & 19 & 13 & 1 & 33 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 137 & 200 & 0 & 1 & 293 & 76 & 53 & 4 & 133 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 3.12 & 3.46 & 0.34 & 0.02 & 0.80 & 0.09 \\
\hline 95th-Percentile Queue Length [ft] & 77.93 & 86.50 & 8.56 & 0.54 & 20.09 & 2.27 \\
\hline Approach Delay [s/veh] & 14.84 & 15.06 & \multicolumn{3}{|c|}{10.15} & 10.28 \\
\hline Approach LOS & B & C & B & B \\
\hline Intersection Delay [s/veh] & Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline B &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:I...Itvcs.vistro
Report File: Q:\...\Existing PM.pdf

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.843 & 5.5 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 0.484 & 12.5 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.634 & 12.8 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.658 & 8.9 & A \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.258 & 144.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.196 & 86.8 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.003 & 9.5 & A \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.000 & 9.2 & A \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 10.0 & A \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 16.1 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
5.5

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
A
0.843

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 \%
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Peak Hour Factor & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 301 & 1 & 1 & 214 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1203 & 3 & 2 & 858 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 89 & 0 & 11 & 89 & 0 & 0 & 20 & 0 & 0 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.89 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.72 & 0.00 & 0.27 & 0.00 & 0.04 & 0.00 & 0.03 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1676 & 1597 & 3192 & 1425 & 105 & 1425 & 92 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1485 & 7 & 2818 & 1258 & 46 & 13 & 61 & 13 \\
\hline d1, Uniform Delay [s] & 59.13 & 2.77 & 59.55 & 1.13 & 0.82 & 59.97 & 58.90 & 59.97 & 58.90 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 4.94 & 22.54 & 0.28 & 0.00 & 0.80 & 2.32 & 0.33 & 2.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.81 & 0.30 & 0.30 & 0.00 & 0.09 & 0.07 & 0.05 & 0.07 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 7.71 & 82.09 & 1.41 & 0.83 & 60.78 & 61.22 & 60.30 & 61.22 \\
\hline Lane Group LOS & E & A & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & Yes & No & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 2.04 & 0.10 & 0.11 & 0.00 & 0.13 & 0.04 & 0.10 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 51.00 & 2.50 & 2.73 & 0.01 & 3.31 & 0.97 & 2.43 & 0.97 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 3.67 & 0.18 & 0.20 & 0.00 & 0.24 & 0.07 & 0.17 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 91.81 & 4.49 & 4.92 & 0.02 & 5.95 & 1.75 & 4.37 & 1.75 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 7.71 & 7.71 & 82.09 & 1.41 & 0.83 & 60.78 & 60.78 & 61.22 & 60.30 & 60.30 & 61.22 \\
\hline Movement LOS & E & A & A & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{7.89} & \multicolumn{3}{|c|}{1.59} & \multicolumn{3}{|c|}{60.87} & \multicolumn{3}{|c|}{60.53} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{5.51} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.843} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
12.5
Level Of Service:
Volume to Capacity (v/c):
B
0.484

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 H
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Peak Hour Factor & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 4 & 288 & 35 & 9 & 201 & 4 & 4 & 1 & 4 & 23 & 2 & 6 \\
\hline Total Analysis Volume [veh/h] & 15 & 1152 & 138 & 35 & 803 & 15 & 14 & 5 & 18 & 93 & 7 & 25 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 7 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 17 & 22 & 0 & 29 & 34 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & Yes & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 2 & 66 & 66 & 4 & 68 & 68 & 2 & 18 & 4 & 10 & 12 & 12 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.02 & 0.66 & 0.66 & 0.04 & 0.68 & 0.68 & 0.02 & 0.18 & 0.04 & 0.10 & 0.12 & 0.12 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.01 & 0.36 & 0.10 & 0.02 & 0.25 & 0.01 & 0.01 & 0.01 & 0.01 & 0.07 & 0.00 & 0.02 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1511 & 1297 & 1265 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 39 & 2100 & 937 & 70 & 2162 & 965 & 26 & 378 & 49 & 169 & 205 & 174 \\
\hline d1, Uniform Delay [s] & 48.07 & 9.17 & 6.49 & 46.74 & 6.96 & 5.26 & 48.73 & 33.98 & 46.97 & 46.00 & 38.73 & 39.26 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.06 & 1.04 & 0.33 & 5.32 & 0.49 & 0.03 & 8.89 & 0.03 & 4.51 & 2.75 & 0.07 & 0.38 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.38 & 0.55 & 0.15 & 0.50 & 0.37 & 0.02 & 0.38 & 0.02 & 0.37 & 0.55 & 0.03 & 0.14 \\
\hline d, Delay for Lane Group [s/veh] & 54.13 & 10.21 & 6.82 & 52.06 & 7.45 & 5.29 & 57.62 & 34.01 & 51.48 & 48.75 & 38.80 & 39.63 \\
\hline Lane Group LOS & D & B & A & D & A & A & E & C & D & D & D & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.41 & 4.82 & 0.85 & 0.89 & 2.54 & 0.08 & 0.30 & 0.19 & 0.50 & 2.35 & 0.15 & 0.55 \\
\hline 50th-Percentile Queue Length [ft] & 10.22 & 120.44 & 21.29 & 22.37 & 63.55 & 1.89 & 7.61 & 4.70 & 12.43 & 58.66 & 3.76 & 13.71 \\
\hline 95th-Percentile Queue Length [veh] & 0.74 & 8.42 & 1.53 & 1.61 & 4.58 & 0.14 & 0.55 & 0.34 & 0.89 & 4.22 & 0.27 & 0.99 \\
\hline 95th-Percentile Queue Length [ft] & 18.39 & 210.43 & 38.33 & 40.26 & 114.38 & 3.40 & 13.69 & 8.46 & 22.37 & 105.60 & 6.77 & 24.68 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 54.13 & 10.21 & 6.82 & 52.06 & 7.45 & 5.29 & 50.32 & 34.01 & 51.48 & 48.75 & 38.80 & 39.63 \\
\hline Movement LOS & D & B & A & D & A & A & D & C & D & D & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.35} & \multicolumn{3}{|c|}{9.24} & \multicolumn{3}{|c|}{48.74} & \multicolumn{3}{|c|}{46.37} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{12.50} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.484} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
12.8

B
0.634

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Peak Hour Factor & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 318 & 45 & 22 & 236 & 2 & 2 & 4 & 6 & 31 & 7 & 15 \\
\hline Total Analysis Volume [veh/h] & 24 & 1272 & 180 & 87 & 945 & 8 & 6 & 15 & 25 & 123 & 27 & 61 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 59 & 0 & 11 & 45 & 0 & 11 & 37 & 0 & 30 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 0.00 & 0.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 0.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 68 & 68 & 7 & 71 & 71 & 1 & 0 & 0 & 14 & 8 & 8 \\
\hline g / C, Green / Cycle & 0.03 & 0.68 & 0.68 & 0.07 & 0.71 & 0.71 & 0.01 & 0.00 & 0.00 & 0.14 & 0.08 & 0.08 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.40 & 0.13 & 0.04 & 0.30 & 0.01 & 0.00 & 0.01 & 0.02 & 0.10 & 0.02 & 0.04 \\
\hline s, saturation flow rate [veh/h] & 1253 & 3192 & 1425 & 2434 & 3192 & 1425 & 1597 & 1676 & 1425 & 1253 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 90 & 2161 & 965 & 188 & 2270 & 1013 & 17 & 0 & 0 & 214 & 141 & 120 \\
\hline d1, Uniform Delay [s] & 49.45 & 8.67 & 5.97 & 47.04 & 5.93 & 4.20 & 49.11 & 0.00 & 0.00 & 43.62 & 42.64 & 43.83 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 1.56 & 1.18 & 0.43 & 1.77 & 0.56 & 0.01 & 11.51 & 0.00 & 0.00 & 2.44 & 0.65 & 3.33 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.27 & 0.59 & 0.19 & 0.46 & 0.42 & 0.01 & 0.35 & 0.00 & 0.00 & 0.58 & 0.19 & 0.51 \\
\hline d, Delay for Lane Group [s/veh] & 51.01 & 9.86 & 6.40 & 48.81 & 6.49 & 4.21 & 60.62 & 0.00 & 0.00 & 46.05 & 43.30 & 47.16 \\
\hline Lane Group LOS & D & A & A & D & A & A & E & A & A & D & D & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.61 & 5.62 & 1.14 & 1.06 & 2.87 & 0.04 & 0.20 & 0.00 & 0.00 & 3.11 & 0.64 & 1.55 \\
\hline 50th-Percentile Queue Length [ft] & 15.26 & 140.47 & 28.50 & 26.45 & 71.87 & 0.91 & 5.12 & 0.00 & 0.00 & 77.74 & 16.11 & 38.69 \\
\hline 95th-Percentile Queue Length [veh] & 1.10 & 9.51 & 2.05 & 1.90 & 5.17 & 0.07 & 0.37 & 0.00 & 0.00 & 5.60 & 1.16 & 2.79 \\
\hline 95th-Percentile Queue Length [ft] & 27.47 & 237.66 & 51.31 & 47.60 & 129.36 & 1.63 & 9.21 & 0.00 & 0.00 & 139.94 & 29.00 & 69.64 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 51.01 & 9.86 & 6.40 & 48.81 & 6.49 & 4.21 & 60.62 & 0.00 & 0.00 & 46.05 & 43.30 & 47.16 \\
\hline Movement LOS & D & A & A & D & A & A & E & A & A & D & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.10} & \multicolumn{3}{|c|}{10.02} & \multicolumn{3}{|c|}{7.91} & \multicolumn{3}{|c|}{46.02} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{12.77} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.634} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
8.9

A
0.658

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 38 & 326 & 1 & 1 & 219 & 11 & 22 & 0 & 21 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 151 & 1306 & 5 & 2 & 878 & 46 & 90 & 1 & 84 & 5 & 2 & 10 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 75 & 61 & 0 & 14 & 43 & 0 & 45 & 34 & 0 & 11 & 70 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 0.00 & 0.00 & 4.00 & 4.00 & 4.00 & 4.00 & 0.00 & 0.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 0.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 0.00 \\
\hline g_i, Effective Green Time [s] & 90 & 85 & 85 & 0 & 0 & 0 & 22 & 17 & 17 & 1 & 0 & 0 \\
\hline g/C, Green / Cycle & 0.75 & 0.71 & 0.71 & 0.00 & 0.00 & 0.00 & 0.19 & 0.14 & 0.14 & 0.01 & 0.00 & 0.00 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.27 & 0.41 & 0.00 & 0.00 & 0.28 & 0.03 & 0.16 & 0.00 & 0.06 & 0.01 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 565 & 3192 & 1425 & 1268 & 3192 & 1425 & 565 & 1676 & 1425 & 566 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 473 & 2262 & 1010 & 60 & 0 & 0 & 156 & 243 & 207 & 60 & 0 & 0 \\
\hline d1, Uniform Delay [s] & 5.96 & 8.62 & 5.11 & 60.00 & 0.00 & 0.00 & 49.19 & 43.87 & 46.59 & 60.00 & 0.00 & 0.00 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.50 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 1.78 & 1.08 & 0.01 & 0.22 & 0.00 & 0.00 & 3.34 & 0.01 & 1.28 & 0.59 & 0.00 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.32 & 0.58 & 0.00 & 0.03 & 0.00 & 0.00 & 0.58 & 0.00 & 0.41 & 0.08 & 0.00 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 7.74 & 9.70 & 5.12 & 60.22 & 0.00 & 0.00 & 52.53 & 43.88 & 47.87 & 60.59 & 0.00 & 0.00 \\
\hline Lane Group LOS & A & A & A & E & A & A & D & D & D & E & A & A \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.26 & 6.62 & 0.03 & 0.06 & 0.00 & 0.00 & 2.80 & 0.03 & 2.36 & 0.16 & 0.00 & 0.00 \\
\hline 50th-Percentile Queue Length [ft] & 31.42 & 165.46 & 0.77 & 1.56 & 0.00 & 0.00 & 69.98 & 0.65 & 59.00 & 4.08 & 0.00 & 0.00 \\
\hline 95th-Percentile Queue Length [veh] & 2.26 & 10.84 & 0.06 & 0.11 & 0.00 & 0.00 & 5.04 & 0.05 & 4.25 & 0.29 & 0.00 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 56.56 & 270.94 & 1.39 & 2.81 & 0.00 & 0.00 & 125.96 & 1.17 & 106.21 & 7.35 & 0.00 & 0.00 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 7.74 & 9.70 & 5.12 & 60.22 & 0.00 & 0.00 & 52.53 & 43.88 & 47.87 & 60.59 & 0.00 & 0.00 \\
\hline Movement LOS & A & A & A & E & A & A & D & D & D & E & A & A \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.48} & \multicolumn{3}{|c|}{0.13} & \multicolumn{3}{|c|}{50.24} & \multicolumn{3}{|c|}{17.82} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{B} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{8.94} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.658} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & - & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
144.6

F
1.258

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Peak Hour Factor & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 117 & 360 & 53 & 7 & 222 & 16 & 20 & 47 & 144 & 45 & 36 & 5 \\
\hline Total Analysis Volume [veh/h] & 467 & 1442 & 214 & 30 & 890 & 65 & 79 & 186 & 578 & 181 & 142 & 21 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 51 & 51 & 4 & 27 & 27 & 7 & 38 & 38 & 11 & 42 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.06 & 0.32 & 0.32 & 0.09 & 0.35 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.29 & 0.49 & 0.52 & 0.02 & 0.28 & 0.05 & 0.05 & 0.11 & 0.41 & 0.11 & 0.10 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1603 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1639 \\
\hline c, Capacity [veh/h] & 373 & 708 & 677 & 59 & 721 & 322 & 99 & 529 & 450 & 146 & 566 \\
\hline d1, Uniform Delay [s] & 46.00 & 34.66 & 34.66 & 56.72 & 46.44 & 37.66 & 55.54 & 31.61 & 41.06 & 54.50 & 28.55 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 134.37 & 90.87 & 113.08 & 6.65 & 117.06 & 1.41 & 13.53 & 0.40 & 144.26 & 151.55 & 0.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.25 & 1.17 & 1.22 & 0.51 & 1.23 & 0.20 & 0.80 & 0.35 & 1.28 & 1.24 & 0.29 \\
\hline d, Delay for Lane Group [s/veh] & 180.37 & 125.53 & 147.74 & 63.37 & 163.50 & 39.07 & 69.07 & 32.00 & 185.32 & 206.05 & 28.83 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.37 & 36.57 & 39.15 & 0.97 & 21.88 & 1.61 & 2.73 & 4.22 & 31.11 & 10.58 & 3.47 \\
\hline 50th-Percentile Queue Length [ft] & 609.25 & 914.25 & 978.83 & 24.19 & 547.09 & 40.26 & 68.27 & 105.60 & 777.83 & 264.43 & 86.71 \\
\hline 95th-Percentile Queue Length [veh] & 36.52 & 51.82 & 56.56 & 1.74 & 32.93 & 2.90 & 4.92 & 7.59 & 46.51 & 17.13 & 6.24 \\
\hline 95th-Percentile Queue Length [ft] & 912.94 & 1295.61 & 1414.09 & 43.53 & 823.35 & 72.47 & 122.89 & 189.87 & 1162.64 & 428.37 & 156.07 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 180.37 & 134.98 & 147.74 & 63.37 & 163.50 & 39.07 & 69.07 & 32.00 & 185.32 & 206.05 & 28.83 & 28.83 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{146.25} & \multicolumn{3}{|c|}{152.24} & \multicolumn{3}{|c|}{140.60} & \multicolumn{3}{|c|}{122.07} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{144.58} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.258} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 86.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.196
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Peak Hour Factor & 0.9270 & 0.9270 & 0.9270 & 0.9270 & 0.9270 & 0.9270 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 417 & 106 & 85 & 328 & 82 & 122 \\
\hline Total Analysis Volume [veh/h] & 1668 & 423 & 339 & 1312 & 328 & 487 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.52 & 0.30 & 0.21 & 0.41 & 0.11 & 0.34 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.43 & 48.95 & 12.48 & 34.44 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 100.29 & 6.10 & 101.54 & 1.48 & 0.26 & 113.95 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.21 & 0.69 & 1.16 & 0.63 & 0.37 & 1.21 \\
\hline d, Delay for Lane Group [s/veh] & 134.30 & 33.53 & 150.49 & 13.96 & 34.70 & 156.92 \\
\hline Lane Group LOS & F & C & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 37.36 & 9.99 & 16.60 & 8.94 & 3.88 & 24.61 \\
\hline 50th-Percentile Queue Length [ft] & 934.03 & 249.79 & 415.11 & 223.50 & 97.08 & 615.31 \\
\hline 95th-Percentile Queue Length [veh] & 53.88 & 15.18 & 25.00 & 13.84 & 6.99 & 36.45 \\
\hline 95th-Percentile Queue Length [ft] & 1347.06 & 379.39 & 625.09 & 346.09 & 174.74 & 911.33 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 134.30 & 33.53 & 150.49 & 13.96 & 34.70 & 156.92 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{113.91} & \multicolumn{2}{|c|}{41.99} & \multicolumn{2}{|c|}{107.73} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{86.75} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.196} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline SG: 1 26s & SG: 2 56s & SG: 4 38s \\
\hline & SG: 102 15s & \\
\hline SG: 6 82s & & SG: 7 38s \\
\hline
\end{tabular}

PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes Delay (sec / veh):

15 minutes

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Peak Hour Factor & 0.6720 & 0.6720 & 0.6720 & 0.6720 & 0.6720 & 0.6720 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 31 & 1 & 0 & 10 & 2 \\
\hline Total Analysis Volume [veh/h] & 3 & 122 & 6 & 1 & 40 & 7 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.11 & 0.00 & 0.00 & 0.02 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 9.52 & 8.79 & 0.00 & 0.00 & 7.29 & 0.00 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.40 & 0.40 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 9.88 & 9.88 & 0.00 & 0.00 & 1.91 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{8.81} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{6.20} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.78} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

PLACEWORKS

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 9.2 \\
Analysis Method: & HCM 2010 & Level Of Service: & A \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.000
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Peak Hour Factor & 0.8260 & 0.8260 & 0.8260 & 0.8260 & 0.8260 & 0.8260 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 0 & 11 & 0 & 0 & 10 \\
\hline Total Analysis Volume [veh/h] & 0 & 0 & 45 & 0 & 0 & 40 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.03 & 0.00 & 0.00 & 0.04 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.28 & 0.00 & 9.19 & 8.44 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.09 & 0.00 & 0.11 & 0.11 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.14 & 0.00 & 2.87 & 2.87 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.28} & \multicolumn{2}{|c|}{8.44} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.83} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay \((\) sec \(/\) veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Peak Hour Factor & 0.8070 & 0.8070 & 0.8070 & 0.8070 & 0.8070 & 0.8070 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 17 & 56 & 40 & 26 & 32 & 25 \\
\hline Total Analysis Volume [veh/h] & 69 & 226 & 159 & 103 & 126 & 102 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.42 & 0.67 & 0.67 & 0.82 & 0.73 & 0.87 & 0.53 \\
\hline 95th-Percentile Queue Length [ft] & 10.40 & 16.82 & 16.82 & 20.51 & 18.19 & 21.79 & 13.25 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.93} & \multicolumn{2}{|c|}{9.87} & \multicolumn{2}{|c|}{10.17} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{9.98} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{A} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh): Level Of Service:
16.1 C

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
t
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 39 & 72 & 2 & 1 & 52 & 16 & 23 & 1 & 28 & 1 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 157 & 28 & 8 & 4 & 207 & 66 & 90 & 5 & 114 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 5.75 & 2.18 & 0.64 & 0.03 & 0.68 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 143.87 & 54.57 & 15.93 & 0.69 & 16.90 & 1.68 \\
\hline Approach Delay [s/veh] & 20.81 & 12.84 & & 10.48 & & 10.34 \\
\hline Approach LOS & C & B & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{16.09} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

Traffic Volume - Future Total Volume


Version 4.00-03
Traffic Volume - Future Total Volume


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\Existing PM_new.pdf

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.843 & 5.5 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 0.484 & 12.5 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.675 & 15.6 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.614 & 13.0 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.258 & 144.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.196 & 86.8 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.003 & 9.5 & A \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.081 & 13.2 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 10.0 & A \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 16.1 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
5.5

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
A
0.843

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Peak Hour Factor & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 301 & 1 & 1 & 214 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1203 & 3 & 2 & 858 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 89 & 0 & 11 & 89 & 0 & 0 & 20 & 0 & 0 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.89 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.72 & 0.00 & 0.27 & 0.00 & 0.04 & 0.00 & 0.03 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1676 & 1597 & 3192 & 1425 & 105 & 1425 & 92 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1485 & 7 & 2818 & 1258 & 46 & 13 & 61 & 13 \\
\hline d1, Uniform Delay [s] & 59.13 & 2.77 & 59.55 & 1.13 & 0.82 & 59.97 & 58.90 & 59.97 & 58.90 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 4.94 & 22.54 & 0.28 & 0.00 & 0.80 & 2.32 & 0.33 & 2.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.81 & 0.30 & 0.30 & 0.00 & 0.09 & 0.07 & 0.05 & 0.07 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 7.71 & 82.09 & 1.41 & 0.83 & 60.78 & 61.22 & 60.30 & 61.22 \\
\hline Lane Group LOS & E & A & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & Yes & No & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 2.04 & 0.10 & 0.11 & 0.00 & 0.13 & 0.04 & 0.10 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 51.00 & 2.50 & 2.73 & 0.01 & 3.31 & 0.97 & 2.43 & 0.97 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 3.67 & 0.18 & 0.20 & 0.00 & 0.24 & 0.07 & 0.17 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 91.81 & 4.49 & 4.92 & 0.02 & 5.95 & 1.75 & 4.37 & 1.75 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 7.71 & 7.71 & 82.09 & 1.41 & 0.83 & 60.78 & 60.78 & 61.22 & 60.30 & 60.30 & 61.22 \\
\hline Movement LOS & E & A & A & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{7.89} & \multicolumn{3}{|c|}{1.59} & \multicolumn{3}{|c|}{60.87} & \multicolumn{3}{|c|}{60.53} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{5.51} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.843} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
12.5
Level Of Service:
Volume to Capacity (v/c):
B
0.484

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 H
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Peak Hour Factor & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 4 & 288 & 35 & 9 & 201 & 4 & 4 & 1 & 4 & 23 & 2 & 6 \\
\hline Total Analysis Volume [veh/h] & 15 & 1152 & 138 & 35 & 803 & 15 & 14 & 5 & 18 & 93 & 7 & 25 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 7 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 17 & 22 & 0 & 29 & 34 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & Yes & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 2 & 66 & 66 & 4 & 68 & 68 & 2 & 18 & 4 & 10 & 12 & 12 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.02 & 0.66 & 0.66 & 0.04 & 0.68 & 0.68 & 0.02 & 0.18 & 0.04 & 0.10 & 0.12 & 0.12 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.01 & 0.36 & 0.10 & 0.02 & 0.25 & 0.01 & 0.01 & 0.01 & 0.01 & 0.07 & 0.00 & 0.02 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1511 & 1297 & 1265 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 39 & 2100 & 937 & 70 & 2162 & 965 & 26 & 378 & 49 & 169 & 205 & 174 \\
\hline d1, Uniform Delay [s] & 48.07 & 9.17 & 6.49 & 46.74 & 6.96 & 5.26 & 48.73 & 33.98 & 46.97 & 46.00 & 38.73 & 39.26 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.06 & 1.04 & 0.33 & 5.32 & 0.49 & 0.03 & 8.89 & 0.03 & 4.51 & 2.75 & 0.07 & 0.38 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.38 & 0.55 & 0.15 & 0.50 & 0.37 & 0.02 & 0.38 & 0.02 & 0.37 & 0.55 & 0.03 & 0.14 \\
\hline d, Delay for Lane Group [s/veh] & 54.13 & 10.21 & 6.82 & 52.06 & 7.45 & 5.29 & 57.62 & 34.01 & 51.48 & 48.75 & 38.80 & 39.63 \\
\hline Lane Group LOS & D & B & A & D & A & A & E & C & D & D & D & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.41 & 4.82 & 0.85 & 0.89 & 2.54 & 0.08 & 0.30 & 0.19 & 0.50 & 2.35 & 0.15 & 0.55 \\
\hline 50th-Percentile Queue Length [ft] & 10.22 & 120.44 & 21.29 & 22.37 & 63.55 & 1.89 & 7.61 & 4.70 & 12.43 & 58.66 & 3.76 & 13.71 \\
\hline 95th-Percentile Queue Length [veh] & 0.74 & 8.42 & 1.53 & 1.61 & 4.58 & 0.14 & 0.55 & 0.34 & 0.89 & 4.22 & 0.27 & 0.99 \\
\hline 95th-Percentile Queue Length [ft] & 18.39 & 210.43 & 38.33 & 40.26 & 114.38 & 3.40 & 13.69 & 8.46 & 22.37 & 105.60 & 6.77 & 24.68 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 54.13 & 10.21 & 6.82 & 52.06 & 7.45 & 5.29 & 50.32 & 34.01 & 51.48 & 48.75 & 38.80 & 39.63 \\
\hline Movement LOS & D & B & A & D & A & A & D & C & D & D & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.35} & \multicolumn{3}{|c|}{9.24} & \multicolumn{3}{|c|}{48.74} & \multicolumn{3}{|c|}{46.37} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{12.50} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.484} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
15.6

B
0.675

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Peak Hour Factor & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 318 & 45 & 22 & 236 & 2 & 2 & 4 & 6 & 31 & 7 & 15 \\
\hline Total Analysis Volume [veh/h] & 24 & 1272 & 180 & 87 & 945 & 8 & 6 & 15 & 25 & 123 & 27 & 61 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 11 & 0 & 29 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 38 & 38 & 6 & 41 & 41 & 1 & 4 & 4 & 7 & 10 & 10 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.04 & 0.54 & 0.54 & 0.08 & 0.58 & 0.58 & 0.01 & 0.05 & 0.05 & 0.10 & 0.14 & 0.14 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.02 & 0.40 & 0.13 & 0.03 & 0.30 & 0.01 & 0.00 & 0.01 & 0.02 & 0.08 & 0.02 & 0.04 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 61 & 1710 & 763 & 256 & 1851 & 826 & 19 & 92 & 79 & 157 & 237 & 202 \\
\hline d1, Uniform Delay [s] & 32.92 & 12.57 & 8.65 & 30.37 & 8.79 & 6.23 & 34.36 & 31.59 & 31.86 & 30.88 & 26.26 & 26.99 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.02 & 2.98 & 0.73 & 0.78 & 1.01 & 0.02 & 9.07 & 0.81 & 2.29 & 8.20 & 0.21 & 0.83 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.39 & 0.74 & 0.24 & 0.34 & 0.51 & 0.01 & 0.31 & 0.16 & 0.32 & 0.78 & 0.11 & 0.30 \\
\hline d, Delay for Lane Group [s/veh] & 36.94 & 15.55 & 9.38 & 31.15 & 9.80 & 6.25 & 43.43 & 32.40 & 34.16 & 39.08 & 26.47 & 27.82 \\
\hline Lane Group LOS & D & B & A & C & A & A & D & C & C & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.43 & 5.98 & 1.18 & 0.65 & 3.03 & 0.04 & 0.15 & 0.26 & 0.45 & 2.31 & 0.39 & 0.93 \\
\hline 50th-Percentile Queue Length [ft] & 10.67 & 149.58 & 29.55 & 16.18 & 75.78 & 0.95 & 3.70 & 6.48 & 11.26 & 57.84 & 9.84 & 23.21 \\
\hline 95th-Percentile Queue Length [veh] & 0.77 & 9.99 & 2.13 & 1.17 & 5.46 & 0.07 & 0.27 & 0.47 & 0.81 & 4.16 & 0.71 & 1.67 \\
\hline 95th-Percentile Queue Length [ft] & 19.20 & 249.87 & 53.18 & 29.13 & 136.40 & 1.71 & 6.66 & 11.66 & 20.28 & 104.12 & 17.71 & 41.77 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.94 & 15.55 & 9.38 & 31.15 & 9.80 & 6.25 & 43.43 & 32.40 & 34.16 & 39.08 & 26.47 & 27.82 \\
\hline Movement LOS & D & B & A & C & A & A & D & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.14} & \multicolumn{3}{|c|}{11.56} & \multicolumn{3}{|c|}{34.79} & \multicolumn{3}{|c|}{34.21} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.58} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.675} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
13.0

B
0.614

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 38 & 326 & 1 & 1 & 219 & 11 & 22 & 0 & 21 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 151 & 1306 & 5 & 2 & 878 & 46 & 90 & 1 & 84 & 5 & 2 & 10 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 21 & 27 & 0 & 13 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 8 & 46 & 46 & 0 & 38 & 38 & 6 & 7 & 7 & 1 & 2 & 2 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.12 & 0.66 & 0.66 & 0.00 & 0.55 & 0.55 & 0.08 & 0.10 & 0.10 & 0.01 & 0.02 & 0.02 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.09 & 0.41 & 0.00 & 0.00 & 0.28 & 0.03 & 0.06 & 0.00 & 0.06 & 0.00 & 0.00 & 0.01 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 190 & 2106 & 940 & 9 & 1743 & 778 & 135 & 161 & 137 & 18 & 38 & 32 \\
\hline d1, Uniform Delay [s] & 30.10 & 6.89 & 4.08 & 34.78 & 9.99 & 7.48 & 31.21 & 28.73 & 30.51 & 34.46 & 33.59 & 33.79 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 7.28 & 1.39 & 0.01 & 12.36 & 1.04 & 0.15 & 5.60 & 0.02 & 4.41 & 8.43 & 0.57 & 5.29 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.79 & 0.62 & 0.01 & 0.23 & 0.50 & 0.06 & 0.67 & 0.01 & 0.61 & 0.28 & 0.05 & 0.31 \\
\hline d, Delay for Lane Group [s/veh] & 37.38 & 8.27 & 4.09 & 47.14 & 11.03 & 7.63 & 36.81 & 28.74 & 34.92 & 42.89 & 34.16 & 39.07 \\
\hline Lane Group LOS & D & A & A & D & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 2.58 & 3.24 & 0.02 & 0.06 & 3.15 & 0.26 & 1.64 & 0.02 & 1.48 & 0.12 & 0.04 & 0.21 \\
\hline 50th-Percentile Queue Length [ft] & 64.48 & 81.06 & 0.39 & 1.53 & 78.63 & 6.46 & 40.93 & 0.39 & 37.09 & 3.09 & 0.96 & 5.26 \\
\hline 95th-Percentile Queue Length [veh] & 4.64 & 5.84 & 0.03 & 0.11 & 5.66 & 0.47 & 2.95 & 0.03 & 2.67 & 0.22 & 0.07 & 0.38 \\
\hline 95th-Percentile Queue Length [ft] & 116.07 & 145.91 & 0.70 & 2.75 & 141.53 & 11.63 & 73.67 & 0.69 & 66.76 & 5.57 & 1.73 & 9.47 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 37.38 & 8.27 & 4.09 & 47.14 & 11.03 & 7.63 & 36.81 & 28.74 & 34.92 & 42.89 & 34.16 & 39.07 \\
\hline Movement LOS & D & A & A & D & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.26} & \multicolumn{3}{|c|}{10.94} & \multicolumn{3}{|c|}{35.86} & \multicolumn{3}{|c|}{39.62} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{13.00} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.614} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
144.6

F
1.258

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Peak Hour Factor & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 117 & 360 & 53 & 7 & 222 & 16 & 20 & 47 & 144 & 45 & 36 & 5 \\
\hline Total Analysis Volume [veh/h] & 467 & 1442 & 214 & 30 & 890 & 65 & 79 & 186 & 578 & 181 & 142 & 21 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 51 & 51 & 4 & 27 & 27 & 7 & 38 & 38 & 11 & 42 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.06 & 0.32 & 0.32 & 0.09 & 0.35 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.29 & 0.49 & 0.52 & 0.02 & 0.28 & 0.05 & 0.05 & 0.11 & 0.41 & 0.11 & 0.10 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1603 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1639 \\
\hline c, Capacity [veh/h] & 373 & 708 & 677 & 59 & 721 & 322 & 99 & 529 & 450 & 146 & 566 \\
\hline d1, Uniform Delay [s] & 46.00 & 34.66 & 34.66 & 56.72 & 46.44 & 37.66 & 55.54 & 31.61 & 41.06 & 54.50 & 28.55 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 134.37 & 90.87 & 113.08 & 6.65 & 117.06 & 1.41 & 13.53 & 0.40 & 144.26 & 151.55 & 0.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.25 & 1.17 & 1.22 & 0.51 & 1.23 & 0.20 & 0.80 & 0.35 & 1.28 & 1.24 & 0.29 \\
\hline d, Delay for Lane Group [s/veh] & 180.37 & 125.53 & 147.74 & 63.37 & 163.50 & 39.07 & 69.07 & 32.00 & 185.32 & 206.05 & 28.83 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.37 & 36.57 & 39.15 & 0.97 & 21.88 & 1.61 & 2.73 & 4.22 & 31.11 & 10.58 & 3.47 \\
\hline 50th-Percentile Queue Length [ft] & 609.25 & 914.25 & 978.83 & 24.19 & 547.09 & 40.26 & 68.27 & 105.60 & 777.83 & 264.43 & 86.71 \\
\hline 95th-Percentile Queue Length [veh] & 36.52 & 51.82 & 56.56 & 1.74 & 32.93 & 2.90 & 4.92 & 7.59 & 46.51 & 17.13 & 6.24 \\
\hline 95th-Percentile Queue Length [ft] & 912.94 & 1295.61 & 1414.09 & 43.53 & 823.35 & 72.47 & 122.89 & 189.87 & 1162.64 & 428.37 & 156.07 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 180.37 & 134.98 & 147.74 & 63.37 & 163.50 & 39.07 & 69.07 & 32.00 & 185.32 & 206.05 & 28.83 & 28.83 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{146.25} & \multicolumn{3}{|c|}{152.24} & \multicolumn{3}{|c|}{140.60} & \multicolumn{3}{|c|}{122.07} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{144.58} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.258} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 86.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.196
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Peak Hour Factor & 0.9270 & 0.9270 & 0.9270 & 0.9270 & 0.9270 & 0.9270 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 417 & 106 & 85 & 328 & 82 & 122 \\
\hline Total Analysis Volume [veh/h] & 1668 & 423 & 339 & 1312 & 328 & 487 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.52 & 0.30 & 0.21 & 0.41 & 0.11 & 0.34 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.43 & 48.95 & 12.48 & 34.44 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 100.29 & 6.10 & 101.54 & 1.48 & 0.26 & 113.95 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.21 & 0.69 & 1.16 & 0.63 & 0.37 & 1.21 \\
\hline d, Delay for Lane Group [s/veh] & 134.30 & 33.53 & 150.49 & 13.96 & 34.70 & 156.92 \\
\hline Lane Group LOS & F & C & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 37.36 & 9.99 & 16.60 & 8.94 & 3.88 & 24.61 \\
\hline 50th-Percentile Queue Length [ft] & 934.03 & 249.79 & 415.11 & 223.50 & 97.08 & 615.31 \\
\hline 95th-Percentile Queue Length [veh] & 53.88 & 15.18 & 25.00 & 13.84 & 6.99 & 36.45 \\
\hline 95th-Percentile Queue Length [ft] & 1347.06 & 379.39 & 625.09 & 346.09 & 174.74 & 911.33 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 134.30 & 33.53 & 150.49 & 13.96 & 34.70 & 156.92 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{113.91} & \multicolumn{2}{|c|}{41.99} & \multicolumn{2}{|c|}{107.73} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{86.75} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.196} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline SG: 1 26s & SG: 2 56s & SG: 4 38s \\
\hline & SG: 102 15s & \\
\hline SG: 6 82s & & SG: 7 38s \\
\hline
\end{tabular}

PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes Delay (sec / veh):

15 minutes

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Peak Hour Factor & 0.6720 & 0.6720 & 0.6720 & 0.6720 & 0.6720 & 0.6720 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 31 & 1 & 0 & 10 & 2 \\
\hline Total Analysis Volume [veh/h] & 3 & 122 & 6 & 1 & 40 & 7 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.11 & 0.00 & 0.00 & 0.02 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 9.52 & 8.79 & 0.00 & 0.00 & 7.29 & 0.00 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.40 & 0.40 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 9.88 & 9.88 & 0.00 & 0.00 & 1.91 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{8.81} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{6.20} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.78} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 13.2 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.081
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Peak Hour Factor & 0.8260 & 0.8260 & 0.8260 & 0.8260 & 0.8260 & 0.8260 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 48 & 10 & 12 & 33 & 11 & 37 \\
\hline Total Analysis Volume [veh/h] & 190 & 40 & 48 & 133 & 45 & 148 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Prority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.08 & 0.18 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.79 & 0.00 & 13.18 & 11.02 \\
\hline Movement LOS & A & A & A & A & B & B \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.11 & 0.00 & 1.04 & 1.04 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.79 & 0.00 & 25.88 & 25.88 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.07} & \multicolumn{2}{|c|}{11.52} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.30} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay \((\) sec \(/\) veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Peak Hour Factor & 0.8070 & 0.8070 & 0.8070 & 0.8070 & 0.8070 & 0.8070 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 17 & 56 & 40 & 26 & 32 & 25 \\
\hline Total Analysis Volume [veh/h] & 69 & 226 & 159 & 103 & 126 & 102 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.42 & 0.67 & 0.67 & 0.82 & 0.73 & 0.87 & 0.53 \\
\hline 95th-Percentile Queue Length [ft] & 10.40 & 16.82 & 16.82 & 20.51 & 18.19 & 21.79 & 13.25 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.93} & \multicolumn{2}{|c|}{9.87} & \multicolumn{2}{|c|}{10.17} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{9.98} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{A} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh): Level Of Service:
16.1 C

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
t
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 39 & 72 & 2 & 1 & 52 & 16 & 23 & 1 & 28 & 1 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 157 & 28 & 8 & 4 & 207 & 66 & 90 & 5 & 114 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03


Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:I...Itvcs.vistro
Report File: Q:\...\Existing AM.pdf

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & \begin{tabular}{c} 
Winchester Road at Keller \\
Road
\end{tabular} & Signalized & HCM 2010 & NB Left & \(5,215.732\) & 2.8 & A \\
\hline 2 & \begin{tabular}{c} 
Winchester Road at Pourroy \\
Road/Abelia Street
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.639 & 17.2 & B \\
\hline 3 & \begin{tabular}{c} 
Winchester Road at Whisper \\
Heights Parkway/Pourroy \\
Road
\end{tabular} & Signalized & HCM 2010 & EB Left & 0.694 & 12.8 & B \\
\hline 4 & \begin{tabular}{c} 
Winchester Road at Jean \\
Nicholas Road/Skyview Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 0.839 & 14.3 & B \\
\hline 5 & \begin{tabular}{c} 
Winchester Road at Max \\
Gillis Boulevard/Thompson \\
Road
\end{tabular} & Signalized & HCM 2010 & EB Right & 1.448 & 180.6 & F \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 6 & \begin{tabular}{c} 
Winchester Road at Benton \\
Road
\end{tabular} & Signalized & HCM 2010 & SB Left & 0.911 & 20.8 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.004 & 10.7 & B \\
\hline 8 & \begin{tabular}{c} 
Jean Nicholas Road at Elliot \\
Road
\end{tabular} & Two-way stop & HCM 2010 & WB Left & 0.000 & 9.4 & A \\
\hline 9 & \begin{tabular}{c} 
Pourroy Road at Skyview \\
Road
\end{tabular} & All-way stop & HCM 2010 & EB Left & & 11.2 & B \\
\hline 10 & \begin{tabular}{c} 
Pourroy Road at Thompson \\
Road
\end{tabular} & All-way stop & HCM 2010 & SB Thru & & 13.9 & B \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
2.8
5215.73

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
4
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 189 & 1 & 0 & 295 & 1 & 0 & 0 & 1 & 2 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 756 & 3 & 0 & 1181 & 3 & 1 & 1 & 4 & 9 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 27 & 89 & 0 & 11 & 73 & 0 & 0 & 20 & 0 & 0 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 106 & 0 & 105 & 105 & 2 & 2 & 2 & 2 \\
\hline g/C, Green / Cycle & 0.00 & 0.88 & 0.00 & 0.88 & 0.88 & 0.02 & 0.02 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.45 & 0.00 & 0.37 & 0.00 & 0.03 & 0.00 & 4693.71 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 74 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1475 & 0 & 2805 & 1252 & 46 & 28 & 60 & 28 \\
\hline d1, Uniform Delay [s] & 59.79 & 1.56 & 0.00 & 1.40 & 0.88 & 58.37 & 57.86 & 60.00 & 57.82 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.29 & 0.00 & 0.47 & 0.00 & 0.38 & 2.37 & 5.22 & 1.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.51 & 0.00 & 0.42 & 0.00 & 0.04 & 0.14 & 0.15 & 0.11 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 2.85 & 0.00 & 1.87 & 0.89 & 58.75 & 60.23 & 65.22 & 59.53 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.53 & 0.00 & 0.18 & 0.00 & 0.07 & 0.14 & 0.36 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 13.17 & 0.00 & 4.54 & 0.03 & 1.64 & 3.44 & 9.08 & 2.57 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 0.95 & 0.00 & 0.33 & 0.00 & 0.12 & 0.25 & 0.65 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 23.70 & 0.00 & 8.17 & 0.05 & 2.96 & 6.20 & 16.34 & 4.62 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 2.85 & 2.85 & 0.00 & 1.87 & 0.89 & 58.75 & 58.75 & 60.23 & 65.22 & 65.22 & 59.53 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{2.94} & \multicolumn{3}{|c|}{1.86} & \multicolumn{3}{|c|}{59.74} & \multicolumn{3}{|c|}{63.80} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{2.84} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{5215.732} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
17.2
Level Of Service:
Volume to Capacity (v/c):
B
0.639

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 166 & 45 & 19 & 264 & 15 & 10 & 4 & 9 & 49 & 3 & 16 \\
\hline Total Analysis Volume [veh/h] & 27 & 664 & 179 & 76 & 1057 & 61 & 42 & 15 & 34 & 194 & 13 & 64 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|r|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 21 & 0 & 11 & 21 & 0 & 15 & 19 & 0 & 19 & 23 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 34 & 34 & 5 & 37 & 37 & 4 & 4 & 4 & 10 & 11 & 11 \\
\hline g / C, Green / Cycle & 0.04 & 0.49 & 0.49 & 0.08 & 0.52 & 0.52 & 0.06 & 0.06 & 0.06 & 0.15 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.21 & 0.13 & 0.05 & 0.33 & 0.04 & 0.03 & 0.01 & 0.02 & 0.12 & 0.01 & 0.04 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 67 & 1546 & 690 & 125 & 1661 & 742 & 91 & 105 & 89 & 235 & 256 & 217 \\
\hline d1, Uniform Delay [s] & 32.74 & 11.78 & 10.67 & 31.28 & 12.06 & 8.42 & 32.03 & 31.10 & 31.58 & 29.04 & 25.38 & 26.37 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.86 & 0.87 & 0.91 & 4.72 & 1.87 & 0.22 & 3.62 & 0.62 & 2.68 & 7.29 & 0.08 & 0.75 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.40 & 0.43 & 0.26 & 0.61 & 0.64 & 0.08 & 0.46 & 0.14 & 0.38 & 0.83 & 0.05 & 0.29 \\
\hline d, Delay for Lane Group [s/veh] & 36.60 & 12.65 & 11.58 & 36.01 & 13.93 & 8.64 & 35.65 & 31.72 & 34.25 & 36.33 & 25.46 & 27.12 \\
\hline Lane Group LOS & D & B & B & D & B & A & D & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.46 & 2.51 & 1.31 & 1.24 & 4.25 & 0.35 & 0.76 & 0.25 & 0.60 & 3.36 & 0.18 & 0.91 \\
\hline 50th-Percentile Queue Length [ft] & 11.53 & 62.70 & 32.69 & 30.97 & 106.19 & 8.81 & 18.98 & 6.27 & 15.04 & 83.91 & 4.38 & 22.80 \\
\hline 95th-Percentile Queue Length [veh] & 0.83 & 4.51 & 2.35 & 2.23 & 7.63 & 0.63 & 1.37 & 0.45 & 1.08 & 6.04 & 0.32 & 1.64 \\
\hline 95th-Percentile Queue Length [ft] & 20.76 & 112.85 & 58.85 & 55.75 & 190.70 & 15.86 & 34.16 & 11.28 & 27.07 & 151.05 & 7.89 & 41.04 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.60 & 12.65 & 11.58 & 36.01 & 13.93 & 8.64 & 35.65 & 31.72 & 34.25 & 36.33 & 25.46 & 27.12 \\
\hline Movement LOS & D & B & B & D & B & A & D & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.17} & \multicolumn{3}{|c|}{15.06} & \multicolumn{3}{|c|}{34.48} & \multicolumn{3}{|c|}{33.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.19} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.639} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
12.8

B
0.694

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 195 & 21 & 13 & 311 & 3 & 5 & 3 & 3 & 40 & 6 & 21 \\
\hline Total Analysis Volume [veh/h] & 24 & 779 & 82 & 51 & 1243 & 13 & 19 & 11 & 13 & 160 & 22 & 84 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 21 & 13 & 0 & 40 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 0.00 & 0.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 0.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 41 & 41 & 4 & 43 & 43 & 2 & 0 & 0 & 12 & 6 & 6 \\
\hline g / C, Green / Cycle & 0.04 & 0.59 & 0.59 & 0.06 & 0.61 & 0.61 & 0.03 & 0.00 & 0.00 & 0.18 & 0.09 & 0.09 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.24 & 0.06 & 0.02 & 0.39 & 0.01 & 0.01 & 0.01 & 0.01 & 0.13 & 0.01 & 0.06 \\
\hline s, saturation flow rate [veh/h] & 1258 & 3192 & 1425 & 2443 & 3192 & 1425 & 1597 & 1676 & 1425 & 1258 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 124 & 1868 & 834 & 206 & 1950 & 870 & 53 & 0 & 0 & 303 & 149 & 127 \\
\hline d1, Uniform Delay [s] & 34.59 & 7.99 & 6.41 & 32.90 & 8.71 & 5.37 & 33.25 & 0.00 & 0.00 & 28.47 & 29.55 & 30.99 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 0.75 & 0.69 & 0.24 & 0.62 & 1.61 & 0.03 & 4.12 & 0.00 & 0.00 & 1.43 & 0.45 & 5.82 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.19 & 0.42 & 0.10 & 0.25 & 0.64 & 0.01 & 0.36 & 0.00 & 0.00 & 0.53 & 0.15 & 0.66 \\
\hline d, Delay for Lane Group [s/veh] & 35.34 & 8.68 & 6.65 & 33.52 & 10.32 & 5.40 & 37.36 & 0.00 & 0.00 & 29.90 & 30.00 & 36.81 \\
\hline Lane Group LOS & D & A & A & C & B & A & D & A & A & C & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.40 & 2.25 & 0.40 & 0.40 & 4.01 & 0.05 & 0.37 & 0.00 & 0.00 & 2.60 & 0.35 & 1.53 \\
\hline 50th-Percentile Queue Length [ft] & 9.91 & 56.14 & 10.09 & 9.99 & 100.29 & 1.34 & 9.29 & 0.00 & 0.00 & 65.02 & 8.76 & 38.33 \\
\hline 95th-Percentile Queue Length [veh] & 0.71 & 4.04 & 0.73 & 0.72 & 7.22 & 0.10 & 0.67 & 0.00 & 0.00 & 4.68 & 0.63 & 2.76 \\
\hline 95th-Percentile Queue Length [ft] & 17.84 & 101.05 & 18.16 & 17.97 & 180.52 & 2.42 & 16.72 & 0.00 & 0.00 & 117.04 & 15.77 & 68.99 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.34 & 8.68 & 6.65 & 33.52 & 10.32 & 5.40 & 37.36 & 0.00 & 0.00 & 29.90 & 30.00 & 36.81 \\
\hline Movement LOS & D & A & A & C & B & A & D & A & A & C & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.22} & \multicolumn{3}{|c|}{11.18} & \multicolumn{3}{|c|}{16.51} & \multicolumn{3}{|c|}{32.09} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{12.80} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.694} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 14.3 \\
Level Of Service: & B \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.839
\end{tabular}

B
0.839

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 24 & 188 & 1 & 2 & 353 & 26 & 16 & 1 & 34 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 98 & 753 & 5 & 7 & 1410 & 103 & 65 & 5 & 137 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 33 & 33 & 1 & 28 & 28 & 5 & 7 & 7 & 0 & 3 & 3 \\
\hline g / C, Green / Cycle & 0.10 & 0.58 & 0.58 & 0.01 & 0.49 & 0.49 & 0.08 & 0.12 & 0.12 & 0.01 & 0.05 & 0.05 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.24 & 0.00 & 0.00 & 0.44 & 0.07 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 156 & 1842 & 822 & 21 & 1572 & 702 & 127 & 204 & 173 & 9 & 80 & 68 \\
\hline d1, Uniform Delay [s] & 24.56 & 6.63 & 5.09 & 27.70 & 13.07 & 7.87 & 25.00 & 21.92 & 24.18 & 28.04 & 25.77 & 25.82 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.10 & 0.15 & 0.00 & 8.96 & 2.07 & 0.10 & 3.13 & 0.05 & 7.86 & 18.23 & 0.33 & 0.66 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.63 & 0.41 & 0.01 & 0.33 & 0.90 & 0.15 & 0.51 & 0.02 & 0.79 & 0.32 & 0.06 & 0.10 \\
\hline d, Delay for Lane Group [s/veh] & 28.67 & 6.78 & 5.09 & 36.66 & 15.14 & 7.96 & 28.13 & 21.97 & 32.04 & 46.27 & 26.09 & 26.48 \\
\hline Lane Group LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.24 & 1.33 & 0.01 & 0.13 & 5.44 & 0.46 & 0.89 & 0.06 & 2.03 & 0.09 & 0.07 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 30.92 & 33.22 & 0.35 & 3.32 & 135.94 & 11.42 & 22.36 & 1.44 & 50.79 & 2.15 & 1.69 & 2.43 \\
\hline 95th-Percentile Queue Length [veh] & 2.23 & 2.39 & 0.02 & 0.24 & 9.26 & 0.82 & 1.61 & 0.10 & 3.66 & 0.15 & 0.12 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 55.65 & 59.79 & 0.62 & 5.98 & 231.55 & 20.56 & 40.24 & 2.58 & 91.43 & 3.87 & 3.05 & 4.38 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 28.67 & 6.78 & 5.09 & 36.66 & 15.14 & 7.96 & 28.13 & 21.97 & 32.04 & 46.27 & 26.09 & 26.48 \\
\hline Movement LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.28} & \multicolumn{3}{|c|}{14.75} & \multicolumn{3}{|c|}{30.57} & \multicolumn{3}{|c|}{30.31} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.30} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.839} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
180.6

F
1.448

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 100 & 181 & 26 & 6 & 354 & 24 & 18 & 33 & 148 & 58 & 65 & 5 \\
\hline Total Analysis Volume [veh/h] & 398 & 726 & 105 & 23 & 1415 & 97 & 73 & 131 & 594 & 232 & 259 & 19 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 26 & 0 & 39 & 40 & 0 & 44 & 38 & 38 & 17 & 11 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 53 & 53 & 4 & 36 & 36 & 7 & 34 & 34 & 13 & 40 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.03 & 0.30 & 0.30 & 0.06 & 0.28 & 0.28 & 0.11 & 0.33 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.25 & 0.25 & 0.25 & 0.01 & 0.44 & 0.07 & 0.05 & 0.08 & 0.42 & 0.15 & 0.17 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1603 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1656 \\
\hline c, Capacity [veh/h] & 279 & 745 & 713 & 50 & 960 & 429 & 92 & 473 & 402 & 173 & 552 \\
\hline d1, Uniform Delay [s] & 49.50 & 24.78 & 24.80 & 57.13 & 41.95 & 31.47 & 55.85 & 33.52 & 43.06 & 53.50 & 32.05 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 210.55 & 3.14 & 3.30 & 6.47 & 218.68 & 1.22 & 14.23 & 0.31 & 227.28 & 186.98 & 0.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.42 & 0.57 & 0.57 & 0.46 & 1.47 & 0.23 & 0.80 & 0.28 & 1.48 & 1.34 & 0.50 \\
\hline d, Delay for Lane Group [s/veh] & 260.05 & 27.91 & 28.10 & 63.60 & 260.62 & 32.69 & 70.08 & 33.83 & 270.33 & 240.48 & 32.76 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.30 & 8.89 & 8.56 & 0.75 & 42.42 & 2.15 & 2.55 & 3.03 & 37.20 & 14.19 & 6.57 \\
\hline 50th-Percentile Queue Length [ft] & 607.40 & 222.14 & 214.07 & 18.74 & 1060.61 & 53.86 & 63.64 & 75.71 & 929.89 & 354.85 & 164.13 \\
\hline 95th-Percentile Queue Length [veh] & 37.66 & 13.77 & 13.36 & 1.35 & 64.90 & 3.88 & 4.58 & 5.45 & 57.37 & 22.65 & 10.77 \\
\hline 95th-Percentile Queue Length [ft] & 941.55 & 344.36 & 334.05 & 33.73 & 1622.56 & 96.94 & 114.56 & 136.28 & 1434.25 & 566.23 & 269.18 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 260.05 & 27.99 & 28.10 & 63.60 & 260.62 & 32.69 & 70.08 & 33.83 & 270.33 & 240.48 & 32.76 & 32.76 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{103.15} & \multicolumn{3}{|c|}{243.27} & \multicolumn{3}{|c|}{213.19} & \multicolumn{3}{|c|}{127.25} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{180.55} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.448} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 20.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.911
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 237 & 58 & 84 & 456 & 101 & 65 \\
\hline Total Analysis Volume [veh/h] & 946 & 232 & 334 & 1824 & 402 & 261 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 26 & 45 & 25 & 25 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 27 & 17 & 47 & 15 & 15 \\
\hline g / C, Green / Cycle & 0.38 & 0.38 & 0.24 & 0.68 & 0.21 & 0.21 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.16 & 0.21 & 0.57 & 0.13 & 0.18 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1213 & 542 & 379 & 2154 & 655 & 301 \\
\hline d1, Uniform Delay [s] & 19.15 & 16.09 & 25.78 & 8.66 & 25.06 & 26.70 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.20 & 0.50 & 0.11 & 0.15 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.00 & 2.47 & 11.31 & 4.35 & 0.94 & 10.24 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.43 & 0.88 & 0.85 & 0.61 & 0.87 \\
\hline d, Delay for Lane Group [s/veh] & 24.14 & 18.56 & 37.09 & 13.01 & 26.00 & 36.95 \\
\hline Lane Group LOS & C & B & D & B & C \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 6.23 & 2.59 & 5.77 & 6.20 & 2.97 & 4.84 \\
\hline 50th-Percentile Queue Length [ft] & 155.87 & 64.85 & 144.15 & 154.94 & 74.18 & 121.09 \\
\hline 95th-Percentile Queue Length [veh] & 10.33 & 4.67 & 9.70 & 10.28 & 5.34 & 8.45 \\
\hline 95th-Percentile Queue Length [ft] & 258.25 & 116.74 & 242.60 & 257.01 & 133.52 & 211.32 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 24.14 & 18.56 & 37.09 & 13.01 & 26.00 \\
\hline Movement LOS & C & B & D & B & C \\
\hline d_A, Approach Delay [s/veh] & 23.04 & 16.74 & D & \\
\hline Approach LOS & C & B & \\
\hline d_I, Intersection Delay [s/veh] & 20.85 & C \\
\hline Intersection LOS & C & \\
\hline Intersection V/C & 0.911 \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.004
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 27 & 1 & 1 & 30 & 1 \\
\hline Total Analysis Volume [veh/h] & 3 & 108 & 5 & 4 & 120 & 4 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.10 & 0.00 & 0.00 & 0.07 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.67 & 8.75 & 0.00 & 0.00 & 7.41 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.35 & 0.35 & 0.00 & 0.00 & 0.24 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 8.76 & 8.76 & 0.00 & 0.00 & 6.03 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{8.80} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.18} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.65} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec /veh): & 9.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & A \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.000
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 0 & 17 & 0 & 0 & 4 \\
\hline Total Analysis Volume [veh/h] & 0 & 0 & 66 & 0 & 0 & 18 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.00 & 0.02 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.31 & 0.00 & 9.41 & 8.37 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.13 & 0.00 & 0.05 & 0.05 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.18 & 0.00 & 1.26 & 1.26 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.31} & \multicolumn{2}{|c|}{8.37} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.54} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 29 & 42 & 55 & 36 & 42 & 35 \\
\hline Total Analysis Volume [veh/h] & 115 & 170 & 219 & 143 & 168 & 140 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.84 & 0.53 & 0.53 & 1.35 & 1.19 & 1.36 & 0.83 \\
\hline 95th-Percentile Queue Length [ft] & 20.98 & 13.30 & 13.30 & 33.84 & 29.80 & 34.08 & 20.85 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.81} & \multicolumn{2}{|c|}{11.33} & \multicolumn{2}{|c|}{11.44} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.21} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 13.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 34 & 50 & 0 & 0 & 73 & 19 & 13 & 1 & 33 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 137 & 200 & 0 & 1 & 293 & 76 & 53 & 4 & 133 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 3.12 & 3.46 & 0.34 & 0.02 & 0.80 \\
\hline 95th-Percentile Queue Length [ft] & 77.93 & 86.50 & 8.56 & 0.54 & 20.09 \\
\hline Approach Delay [s/veh] & 14.84 & 15.06 & 10.15 & 0.09 \\
\hline Approach LOS & B & C & B & \\
\hline Intersection Delay [s/veh] & \multicolumn{4}{|c|}{13.88} \\
\hline Intersection LOS & B \\
\hline
\end{tabular}

Traffic Volume - Future Total Volume


Version 4.00-03
Traffic Volume - Future Total Volume


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\Existing AM_new.pdf

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & \begin{tabular}{c} 
Winchester Road at Keller \\
Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.628 & 2.8 & A \\
\hline 2 & \begin{tabular}{c} 
Winchester Road at Pourroy \\
Road/Abelia Street
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.639 & 17.2 & B \\
\hline 3 & \begin{tabular}{c} 
Winchester Road at Whisper \\
Heights Parkway/Pourroy \\
Road
\end{tabular} & Signalized & HCM 2010 & EB Left & 0.700 & 15.2 & B \\
\hline 4 & \begin{tabular}{c} 
Winchester Road at Jean \\
Nicholas Road/Skyview Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 0.779 & 15.7 & B \\
\hline 5 & \begin{tabular}{c} 
Winchester Road at Max \\
Gillis Boulevard/Thompson \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.448 & 180.4 & F \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 6 & \begin{tabular}{c} 
Winchester Road at Benton \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Right & 0.943 & 21.0 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.004 & 10.7 & B \\
\hline 8 & \begin{tabular}{c} 
Jean Nicholas Road at Elliot \\
Road
\end{tabular} & Two-way stop & HCM 2010 & WB Left & 0.182 & 19.0 & C \\
\hline 9 & \begin{tabular}{c} 
Pourroy Road at Skyview \\
Road
\end{tabular} & All-way stop & HCM 2010 & EB Left & & 11.2 & B \\
\hline 10 & \begin{tabular}{c} 
Pourroy Road at Thompson \\
Road
\end{tabular} & All-way stop & HCM 2010 & SB Thru & & 13.9 & B \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
2.8

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
A
0.628

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 189 & 1 & 0 & 295 & 1 & 0 & 0 & 1 & 2 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 756 & 3 & 0 & 1181 & 3 & 1 & 1 & 4 & 9 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 80 & 0 & 11 & 80 & 0 & 0 & 29 & 0 & 0 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 106 & 0 & 105 & 105 & 2 & 2 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.00 & 0.88 & 0.00 & 0.88 & 0.88 & 0.02 & 0.02 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.45 & 0.00 & 0.37 & 0.00 & 0.01 & 0.00 & 0.11 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 161 & 1425 & 80 & 1425 \\
\hline c, Capacity [veh/h] & 7 & 1474 & 1 & 2802 & 1251 & 48 & 28 & 62 & 28 \\
\hline d1, Uniform Delay [s] & 59.71 & 1.58 & 0.00 & 1.42 & 0.90 & 57.88 & 57.81 & 59.97 & 57.77 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 8.00 & 1.29 & 0.00 & 0.47 & 0.00 & 0.35 & 2.30 & 1.08 & 1.66 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.13 & 0.51 & 0.00 & 0.42 & 0.00 & 0.04 & 0.14 & 0.15 & 0.11 \\
\hline d, Delay for Lane Group [s/veh] & 67.71 & 2.87 & 0.00 & 1.89 & 0.90 & 58.23 & 60.11 & 61.05 & 59.43 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.53 & 0.00 & 0.18 & 0.00 & 0.06 & 0.14 & 0.29 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 0.57 & 13.19 & 0.00 & 4.54 & 0.03 & 1.61 & 3.44 & 7.35 & 2.56 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 0.95 & 0.00 & 0.33 & 0.00 & 0.12 & 0.25 & 0.53 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 1.02 & 23.74 & 0.00 & 8.18 & 0.05 & 2.90 & 6.18 & 13.23 & 4.61 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 67.71 & 2.87 & 2.87 & 0.00 & 1.89 & 0.90 & 58.23 & 58.23 & 60.11 & 61.05 & 61.05 & 59.43 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{2.96} & \multicolumn{3}{|c|}{1.88} & \multicolumn{3}{|c|}{59.49} & \multicolumn{3}{|c|}{60.64} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{2.84} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.628} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes
\(\begin{array}{cc}\text { Delay (sec / veh): } & 17.2 \\ \text { Level Of Service: } & \mathrm{B} \\ \text { Volume to Capacity }(\mathrm{v} / \mathrm{c}): & 0.639\end{array}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 166 & 45 & 19 & 264 & 15 & 10 & 4 & 9 & 49 & 3 & 16 \\
\hline Total Analysis Volume [veh/h] & 27 & 664 & 179 & 76 & 1057 & 61 & 42 & 15 & 34 & 194 & 13 & 64 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 15 & 19 & 0 & 21 & 25 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 34 & 34 & 5 & 37 & 37 & 4 & 4 & 4 & 10 & 11 & 11 \\
\hline g / C, Green / Cycle & 0.04 & 0.48 & 0.48 & 0.08 & 0.52 & 0.52 & 0.06 & 0.06 & 0.06 & 0.15 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.21 & 0.13 & 0.05 & 0.33 & 0.04 & 0.03 & 0.01 & 0.02 & 0.12 & 0.01 & 0.04 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 67 & 1544 & 689 & 125 & 1659 & 741 & 91 & 105 & 89 & 236 & 257 & 218 \\
\hline d1, Uniform Delay [s] & 32.74 & 11.81 & 10.70 & 31.28 & 12.09 & 8.45 & 32.03 & 31.10 & 31.57 & 29.00 & 25.34 & 26.33 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.86 & 0.88 & 0.91 & 4.72 & 1.88 & 0.22 & 3.62 & 0.62 & 2.67 & 7.05 & 0.08 & 0.74 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.40 & 0.43 & 0.26 & 0.61 & 0.64 & 0.08 & 0.46 & 0.14 & 0.38 & 0.82 & 0.05 & 0.29 \\
\hline d, Delay for Lane Group [s/veh] & 36.60 & 12.69 & 11.61 & 36.01 & 13.97 & 8.67 & 35.65 & 31.72 & 34.25 & 36.05 & 25.42 & 27.07 \\
\hline Lane Group LOS & D & B & B & D & B & A & D & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.46 & 2.51 & 1.31 & 1.24 & 4.26 & 0.35 & 0.76 & 0.25 & 0.60 & 3.34 & 0.18 & 0.91 \\
\hline 50th-Percentile Queue Length [ft] & 11.53 & 62.84 & 32.77 & 30.97 & 106.48 & 8.83 & 18.98 & 6.27 & 15.04 & 83.51 & 4.38 & 22.77 \\
\hline 95th-Percentile Queue Length [veh] & 0.83 & 4.52 & 2.36 & 2.23 & 7.64 & 0.64 & 1.37 & 0.45 & 1.08 & 6.01 & 0.32 & 1.64 \\
\hline 95th-Percentile Queue Length [ft] & 20.76 & 113.11 & 58.98 & 55.75 & 191.10 & 15.90 & 34.16 & 11.28 & 27.07 & 150.32 & 7.88 & 40.99 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.60 & 12.69 & 11.61 & 36.01 & 13.97 & 8.67 & 35.65 & 31.72 & 34.25 & 36.05 & 25.42 & 27.07 \\
\hline Movement LOS & D & B & B & D & B & A & D & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.21} & \multicolumn{3}{|c|}{15.10} & \multicolumn{3}{|c|}{34.48} & \multicolumn{3}{|c|}{33.42} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.20} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.639} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
15.2

B
0.700

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
715
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 195 & 21 & 13 & 311 & 3 & 5 & 3 & 3 & 40 & 6 & 21 \\
\hline Total Analysis Volume [veh/h] & 24 & 779 & 82 & 51 & 1243 & 13 & 19 & 11 & 13 & 160 & 22 & 84 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 11 & 0 & 19 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 2 & 30 & 30 & 4 & 32 & 32 & 2 & 2 & 2 & 8 & 8 & 8 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.07 & 0.53 & 0.53 & 0.03 & 0.04 & 0.04 & 0.13 & 0.13 & 0.13 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.24 & 0.06 & 0.02 & 0.39 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.06 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 64 & 1595 & 712 & 212 & 1686 & 752 & 53 & 67 & 57 & 202 & 223 & 190 \\
\hline d1, Uniform Delay [s] & 28.15 & 9.96 & 7.99 & 26.54 & 10.97 & 6.76 & 28.46 & 27.91 & 27.98 & 25.51 & 22.90 & 24.02 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.65 & 1.07 & 0.33 & 0.58 & 2.93 & 0.04 & 4.10 & 1.15 & 2.03 & 6.90 & 0.19 & 1.62 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.38 & 0.49 & 0.12 & 0.24 & 0.74 & 0.02 & 0.36 & 0.16 & 0.23 & 0.79 & 0.10 & 0.44 \\
\hline d, Delay for Lane Group [s/veh] & 31.80 & 11.03 & 8.32 & 27.13 & 13.90 & 6.80 & 32.56 & 29.06 & 30.01 & 32.42 & 23.09 & 25.64 \\
\hline Lane Group LOS & C & B & A & C & B & A & C & C & C & C & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.36 & 2.45 & 0.44 & 0.32 & 4.58 & 0.06 & 0.32 & 0.17 & 0.21 & 2.47 & 0.27 & 1.12 \\
\hline 50th-Percentile Queue Length [ft] & 8.93 & 61.31 & 10.98 & 7.91 & 114.47 & 1.47 & 7.98 & 4.23 & 5.19 & 61.72 & 6.76 & 28.01 \\
\hline 95th-Percentile Queue Length [veh] & 0.64 & 4.41 & 0.79 & 0.57 & 8.09 & 0.11 & 0.57 & 0.30 & 0.37 & 4.44 & 0.49 & 2.02 \\
\hline 95th-Percentile Queue Length [ft] & 16.08 & 110.37 & 19.76 & 14.23 & 202.20 & 2.65 & 14.37 & 7.62 & 9.33 & 111.09 & 12.16 & 50.42 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 31.80 & 11.03 & 8.32 & 27.13 & 13.90 & 6.80 & 32.56 & 29.06 & 30.01 & 32.42 & 23.09 & 25.64 \\
\hline Movement LOS & C & B & A & C & B & A & C & C & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.34} & \multicolumn{3}{|c|}{14.34} & \multicolumn{3}{|c|}{30.89} & \multicolumn{3}{|c|}{29.51} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.18} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.700} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
15.7

B
0.779

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 24 & 188 & 1 & 2 & 353 & 26 & 16 & 1 & 34 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 98 & 753 & 5 & 7 & 1410 & 103 & 65 & 5 & 137 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 20 & 0 & 11 & 20 & 0 & 20 & 28 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 44 & 44 & 1 & 39 & 39 & 5 & 8 & 8 & 0 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.09 & 0.63 & 0.63 & 0.01 & 0.56 & 0.56 & 0.07 & 0.12 & 0.12 & 0.01 & 0.05 & 0.05 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.24 & 0.00 & 0.00 & 0.44 & 0.07 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 139 & 2008 & 896 & 23 & 1777 & 793 & 118 & 203 & 173 & 12 & 92 & 78 \\
\hline d1, Uniform Delay [s] & 31.21 & 6.33 & 4.85 & 34.26 & 12.36 & 7.44 & 31.42 & 27.21 & 30.01 & 34.67 & 31.47 & 31.53 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.44 & 0.54 & 0.01 & 7.00 & 3.74 & 0.34 & 4.00 & 0.05 & 7.96 & 10.74 & 0.24 & 0.49 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.71 & 0.38 & 0.01 & 0.30 & 0.79 & 0.13 & 0.55 & 0.02 & 0.79 & 0.25 & 0.05 & 0.09 \\
\hline d, Delay for Lane Group [s/veh] & 37.65 & 6.86 & 4.86 & 41.27 & 16.10 & 7.78 & 35.42 & 27.26 & 37.97 & 45.42 & 31.71 & 32.02 \\
\hline Lane Group LOS & D & A & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.69 & 1.71 & 0.02 & 0.15 & 6.69 & 0.58 & 1.16 & 0.07 & 2.54 & 0.08 & 0.08 & 0.12 \\
\hline 50th-Percentile Queue Length [ft] & 42.18 & 42.65 & 0.47 & 3.80 & 167.28 & 14.54 & 28.98 & 1.86 & 63.56 & 2.12 & 2.10 & 3.00 \\
\hline 95th-Percentile Queue Length [veh] & 3.04 & 3.07 & 0.03 & 0.27 & 10.93 & 1.05 & 2.09 & 0.13 & 4.58 & 0.15 & 0.15 & 0.22 \\
\hline 95th-Percentile Queue Length [ft] & 75.93 & 76.77 & 0.84 & 6.85 & 273.34 & 26.18 & 52.16 & 3.34 & 114.41 & 3.82 & 3.79 & 5.40 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 37.65 & 6.86 & 4.86 & 41.27 & 16.10 & 7.78 & 35.42 & 27.26 & 37.97 & 45.42 & 31.71 & 32.02 \\
\hline Movement LOS & D & A & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.38} & \multicolumn{3}{|c|}{15.65} & \multicolumn{3}{|c|}{36.91} & \multicolumn{3}{|c|}{34.60} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.72} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.779} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
180.4

F
1.448

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 100 & 181 & 26 & 6 & 354 & 24 & 18 & 33 & 148 & 58 & 65 & 5 \\
\hline Total Analysis Volume [veh/h] & 398 & 726 & 105 & 23 & 1415 & 97 & 73 & 131 & 594 & 232 & 259 & 19 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 26 & 0 & 39 & 40 & 0 & 37 & 39 & 39 & 16 & 18 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 53 & 53 & 4 & 36 & 36 & 7 & 35 & 35 & 12 & 40 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.03 & 0.30 & 0.30 & 0.06 & 0.29 & 0.29 & 0.10 & 0.33 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.25 & 0.25 & 0.25 & 0.01 & 0.44 & 0.07 & 0.05 & 0.08 & 0.42 & 0.15 & 0.17 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1603 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1656 \\
\hline c, Capacity [veh/h] & 279 & 746 & 713 & 50 & 961 & 429 & 92 & 487 & 414 & 160 & 552 \\
\hline d1, Uniform Delay [s] & 49.50 & 24.75 & 24.78 & 57.13 & 41.93 & 31.45 & 55.86 & 32.77 & 42.57 & 54.00 & 32.07 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 210.55 & 3.13 & 3.29 & 6.47 & 218.11 & 1.22 & 14.34 & 0.29 & 209.17 & 235.00 & 0.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.42 & 0.57 & 0.57 & 0.46 & 1.47 & 0.23 & 0.80 & 0.27 & 1.43 & 1.45 & 0.50 \\
\hline d, Delay for Lane Group [s/veh] & 260.05 & 27.89 & 28.07 & 63.60 & 260.04 & 32.67 & 70.20 & 33.06 & 251.74 & 289.00 & 32.78 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.30 & 8.88 & 8.56 & 0.75 & 42.39 & 2.15 & 2.55 & 2.99 & 36.16 & 15.24 & 6.57 \\
\hline 50th-Percentile Queue Length [ft] & 607.40 & 222.06 & 213.99 & 18.74 & 1059.69 & 53.84 & 63.70 & 74.70 & 903.89 & 380.96 & 164.14 \\
\hline 95th-Percentile Queue Length [veh] & 37.66 & 13.77 & 13.36 & 1.35 & 64.83 & 3.88 & 4.59 & 5.38 & 55.46 & 24.51 & 10.77 \\
\hline 95th-Percentile Queue Length [ft] & 941.55 & 344.25 & 333.94 & 33.73 & 1620.82 & 96.91 & 114.66 & 134.46 & 1386.55 & 612.71 & 269.20 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 260.05 & 27.96 & 28.07 & 63.60 & 260.04 & 32.67 & 70.20 & 33.06 & 251.74 & 289.00 & 32.78 & 32.78 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{103.13} & \multicolumn{3}{|c|}{242.73} & \multicolumn{3}{|c|}{199.24} & \multicolumn{3}{|c|}{149.34} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{180.38} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.448} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 21.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.943
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 237 & 58 & 84 & 456 & 101 & 65 \\
\hline Total Analysis Volume [veh/h] & 946 & 232 & 334 & 1824 & 402 & 261 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 22 & 41 & 19 & 19 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 21 & 14 & 39 & 13 & 13 \\
\hline g / C, Green / Cycle & 0.35 & 0.35 & 0.24 & 0.66 & 0.21 & 0.21 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.16 & 0.21 & 0.57 & 0.13 & 0.18 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1108 & 495 & 385 & 2089 & 659 & 303 \\
\hline d1, Uniform Delay [s] & 18.22 & 15.31 & 21.92 & 8.38 & 21.44 & 22.84 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.21 & 0.50 & 0.11 & 0.22 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 8.40 & 3.17 & 10.92 & 5.41 & 0.92 & 13.66 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.85 & 0.47 & 0.87 & 0.87 & 0.61 & 0.86 \\
\hline d, Delay for Lane Group [s/veh] & 26.62 & 18.48 & 32.84 & 13.79 & 22.36 & 36.50 \\
\hline Lane Group LOS & C & B & C & B & C & D \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 5.90 & 2.33 & 4.83 & 5.26 & 2.46 & 4.43 \\
\hline 50th-Percentile Queue Length [ft] & 147.40 & 58.33 & 120.65 & 131.38 & 61.42 & 110.79 \\
\hline 95th-Percentile Queue Length [veh] & 9.88 & 4.20 & 8.43 & 9.02 & 4.42 & 7.88 \\
\hline 95th-Percentile Queue Length [ft] & 246.96 & 105.00 & 210.72 & 225.38 & 110.56 & 197.10 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 26.62 & 18.48 & 32.84 & 13.79 & 22.36 \\
\hline Movement LOS & C & B & C & B & C \\
\hline d_A, Approach Delay [s/veh] & 25.02 & 16.74 & D \\
\hline Approach LOS & C & B & \\
\hline d_I, Intersection Delay [s/veh] & 21.03 & C \\
\hline Intersection LOS & C \\
\hline Intersection V/C & 0.943 \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.004
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 27 & 1 & 1 & 30 & 1 \\
\hline Total Analysis Volume [veh/h] & 3 & 108 & 5 & 4 & 120 & 4 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.10 & 0.00 & 0.00 & 0.07 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.67 & 8.75 & 0.00 & 0.00 & 7.41 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.35 & 0.35 & 0.00 & 0.00 & 0.24 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 8.76 & 8.76 & 0.00 & 0.00 & 6.03 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{8.80} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.18} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.65} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 19.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.182
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 64 & 4 & 32 & 47 & 17 & 43 \\
\hline Total Analysis Volume [veh/h] & 255 & 18 & 127 & 186 & 66 & 172 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.10 & 0.00 & 0.18 & 0.22 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.09 & 0.00 & 18.97 & 13.72 \\
\hline Movement LOS & A & A & A & A & C & B \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.33 & 0.00 & 1.94 & 1.94 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 8.17 & 0.00 & 48.60 & 48.60 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.28} & \multicolumn{2}{|c|}{15.17} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{5.63} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 29 & 42 & 55 & 36 & 42 & 35 \\
\hline Total Analysis Volume [veh/h] & 115 & 170 & 219 & 143 & 168 & 140 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.84 & 0.53 & 0.53 & 1.35 & 1.19 & 1.36 & 0.83 \\
\hline 95th-Percentile Queue Length [ft] & 20.98 & 13.30 & 13.30 & 33.84 & 29.80 & 34.08 & 20.85 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.81} & \multicolumn{2}{|c|}{11.33} & \multicolumn{2}{|c|}{11.44} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.21} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 13.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 34 & 50 & 0 & 0 & 73 & 19 & 13 & 1 & 33 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 137 & 200 & 0 & 1 & 293 & 76 & 53 & 4 & 133 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 3.12 & 3.46 & 0.34 & 0.02 & 0.80 \\
\hline 95th-Percentile Queue Length [ft] & 77.93 & 86.50 & 8.56 & 0.54 & 20.09 \\
\hline Approach Delay [s/veh] & 14.84 & 15.06 & 10.15 & 0.09 \\
\hline Approach LOS & B & C & B & \\
\hline Intersection Delay [s/veh] & \multicolumn{4}{|c|}{13.88} \\
\hline Intersection LOS & B \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:I...Itvcs.vistro
Report File: Q:\...\Existing PM.pdf

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.843 & 5.5 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 0.484 & 12.5 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.634 & 12.8 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.658 & 8.9 & A \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.258 & 144.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.196 & 86.8 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.003 & 9.5 & A \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.000 & 9.2 & A \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 10.0 & A \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 16.1 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
5.5

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
A
0.843

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Peak Hour Factor & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 301 & 1 & 1 & 214 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1203 & 3 & 2 & 858 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 89 & 0 & 11 & 89 & 0 & 0 & 20 & 0 & 0 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.89 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.72 & 0.00 & 0.27 & 0.00 & 0.04 & 0.00 & 0.03 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1676 & 1597 & 3192 & 1425 & 105 & 1425 & 92 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1485 & 7 & 2818 & 1258 & 46 & 13 & 61 & 13 \\
\hline d1, Uniform Delay [s] & 59.13 & 2.77 & 59.55 & 1.13 & 0.82 & 59.97 & 58.90 & 59.97 & 58.90 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 4.94 & 22.54 & 0.28 & 0.00 & 0.80 & 2.32 & 0.33 & 2.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.81 & 0.30 & 0.30 & 0.00 & 0.09 & 0.07 & 0.05 & 0.07 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 7.71 & 82.09 & 1.41 & 0.83 & 60.78 & 61.22 & 60.30 & 61.22 \\
\hline Lane Group LOS & E & A & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & Yes & No & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 2.04 & 0.10 & 0.11 & 0.00 & 0.13 & 0.04 & 0.10 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 51.00 & 2.50 & 2.73 & 0.01 & 3.31 & 0.97 & 2.43 & 0.97 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 3.67 & 0.18 & 0.20 & 0.00 & 0.24 & 0.07 & 0.17 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 91.81 & 4.49 & 4.92 & 0.02 & 5.95 & 1.75 & 4.37 & 1.75 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 7.71 & 7.71 & 82.09 & 1.41 & 0.83 & 60.78 & 60.78 & 61.22 & 60.30 & 60.30 & 61.22 \\
\hline Movement LOS & E & A & A & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{7.89} & \multicolumn{3}{|c|}{1.59} & \multicolumn{3}{|c|}{60.87} & \multicolumn{3}{|c|}{60.53} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{5.51} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.843} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh)
12.5

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
B
0.484

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 H
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Peak Hour Factor & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 4 & 288 & 35 & 9 & 201 & 4 & 4 & 1 & 4 & 23 & 2 & 6 \\
\hline Total Analysis Volume [veh/h] & 15 & 1152 & 138 & 35 & 803 & 15 & 14 & 5 & 18 & 93 & 7 & 25 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 7 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 17 & 22 & 0 & 29 & 34 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & Yes & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 2 & 66 & 66 & 4 & 68 & 68 & 2 & 18 & 4 & 10 & 12 & 12 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.02 & 0.66 & 0.66 & 0.04 & 0.68 & 0.68 & 0.02 & 0.18 & 0.04 & 0.10 & 0.12 & 0.12 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.01 & 0.36 & 0.10 & 0.02 & 0.25 & 0.01 & 0.01 & 0.01 & 0.01 & 0.07 & 0.00 & 0.02 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1511 & 1297 & 1265 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 39 & 2100 & 937 & 70 & 2162 & 965 & 26 & 378 & 49 & 169 & 205 & 174 \\
\hline d1, Uniform Delay [s] & 48.07 & 9.17 & 6.49 & 46.74 & 6.96 & 5.26 & 48.73 & 33.98 & 46.97 & 46.00 & 38.73 & 39.26 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.06 & 1.04 & 0.33 & 5.32 & 0.49 & 0.03 & 8.89 & 0.03 & 4.51 & 2.75 & 0.07 & 0.38 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.38 & 0.55 & 0.15 & 0.50 & 0.37 & 0.02 & 0.38 & 0.02 & 0.37 & 0.55 & 0.03 & 0.14 \\
\hline d, Delay for Lane Group [s/veh] & 54.13 & 10.21 & 6.82 & 52.06 & 7.45 & 5.29 & 57.62 & 34.01 & 51.48 & 48.75 & 38.80 & 39.63 \\
\hline Lane Group LOS & D & B & A & D & A & A & E & C & D & D & D & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.41 & 4.82 & 0.85 & 0.89 & 2.54 & 0.08 & 0.30 & 0.19 & 0.50 & 2.35 & 0.15 & 0.55 \\
\hline 50th-Percentile Queue Length [ft] & 10.22 & 120.44 & 21.29 & 22.37 & 63.55 & 1.89 & 7.61 & 4.70 & 12.43 & 58.66 & 3.76 & 13.71 \\
\hline 95th-Percentile Queue Length [veh] & 0.74 & 8.42 & 1.53 & 1.61 & 4.58 & 0.14 & 0.55 & 0.34 & 0.89 & 4.22 & 0.27 & 0.99 \\
\hline 95th-Percentile Queue Length [ft] & 18.39 & 210.43 & 38.33 & 40.26 & 114.38 & 3.40 & 13.69 & 8.46 & 22.37 & 105.60 & 6.77 & 24.68 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 54.13 & 10.21 & 6.82 & 52.06 & 7.45 & 5.29 & 50.32 & 34.01 & 51.48 & 48.75 & 38.80 & 39.63 \\
\hline Movement LOS & D & B & A & D & A & A & D & C & D & D & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.35} & \multicolumn{3}{|c|}{9.24} & \multicolumn{3}{|c|}{48.74} & \multicolumn{3}{|c|}{46.37} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{12.50} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.484} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
12.8

B
0.634

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Peak Hour Factor & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 318 & 45 & 22 & 236 & 2 & 2 & 4 & 6 & 31 & 7 & 15 \\
\hline Total Analysis Volume [veh/h] & 24 & 1272 & 180 & 87 & 945 & 8 & 6 & 15 & 25 & 123 & 27 & 61 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 59 & 0 & 11 & 45 & 0 & 11 & 37 & 0 & 30 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 0.00 & 0.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 0.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 68 & 68 & 7 & 71 & 71 & 1 & 0 & 0 & 14 & 8 & 8 \\
\hline g / C, Green / Cycle & 0.03 & 0.68 & 0.68 & 0.07 & 0.71 & 0.71 & 0.01 & 0.00 & 0.00 & 0.14 & 0.08 & 0.08 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.40 & 0.13 & 0.04 & 0.30 & 0.01 & 0.00 & 0.01 & 0.02 & 0.10 & 0.02 & 0.04 \\
\hline s, saturation flow rate [veh/h] & 1253 & 3192 & 1425 & 2434 & 3192 & 1425 & 1597 & 1676 & 1425 & 1253 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 90 & 2161 & 965 & 188 & 2270 & 1013 & 17 & 0 & 0 & 214 & 141 & 120 \\
\hline d1, Uniform Delay [s] & 49.45 & 8.67 & 5.97 & 47.04 & 5.93 & 4.20 & 49.11 & 0.00 & 0.00 & 43.62 & 42.64 & 43.83 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 1.56 & 1.18 & 0.43 & 1.77 & 0.56 & 0.01 & 11.51 & 0.00 & 0.00 & 2.44 & 0.65 & 3.33 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.27 & 0.59 & 0.19 & 0.46 & 0.42 & 0.01 & 0.35 & 0.00 & 0.00 & 0.58 & 0.19 & 0.51 \\
\hline d, Delay for Lane Group [s/veh] & 51.01 & 9.86 & 6.40 & 48.81 & 6.49 & 4.21 & 60.62 & 0.00 & 0.00 & 46.05 & 43.30 & 47.16 \\
\hline Lane Group LOS & D & A & A & D & A & A & E & A & A & D & D & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.61 & 5.62 & 1.14 & 1.06 & 2.87 & 0.04 & 0.20 & 0.00 & 0.00 & 3.11 & 0.64 & 1.55 \\
\hline 50th-Percentile Queue Length [ft] & 15.26 & 140.47 & 28.50 & 26.45 & 71.87 & 0.91 & 5.12 & 0.00 & 0.00 & 77.74 & 16.11 & 38.69 \\
\hline 95th-Percentile Queue Length [veh] & 1.10 & 9.51 & 2.05 & 1.90 & 5.17 & 0.07 & 0.37 & 0.00 & 0.00 & 5.60 & 1.16 & 2.79 \\
\hline 95th-Percentile Queue Length [ft] & 27.47 & 237.66 & 51.31 & 47.60 & 129.36 & 1.63 & 9.21 & 0.00 & 0.00 & 139.94 & 29.00 & 69.64 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 51.01 & 9.86 & 6.40 & 48.81 & 6.49 & 4.21 & 60.62 & 0.00 & 0.00 & 46.05 & 43.30 & 47.16 \\
\hline Movement LOS & D & A & A & D & A & A & E & A & A & D & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.10} & \multicolumn{3}{|c|}{10.02} & \multicolumn{3}{|c|}{7.91} & \multicolumn{3}{|c|}{46.02} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{12.77} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.634} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
8.9

Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):

A
0.658

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 38 & 326 & 1 & 1 & 219 & 11 & 22 & 0 & 21 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 151 & 1306 & 5 & 2 & 878 & 46 & 90 & 1 & 84 & 5 & 2 & 10 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 75 & 61 & 0 & 14 & 43 & 0 & 45 & 34 & 0 & 11 & 70 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 0.00 & 0.00 & 4.00 & 4.00 & 4.00 & 4.00 & 0.00 & 0.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 0.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 0.00 \\
\hline g_i, Effective Green Time [s] & 90 & 85 & 85 & 0 & 0 & 0 & 22 & 17 & 17 & 1 & 0 & 0 \\
\hline g / C, Green / Cycle & 0.75 & 0.71 & 0.71 & 0.00 & 0.00 & 0.00 & 0.19 & 0.14 & 0.14 & 0.01 & 0.00 & 0.00 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.27 & 0.41 & 0.00 & 0.00 & 0.28 & 0.03 & 0.16 & 0.00 & 0.06 & 0.01 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 565 & 3192 & 1425 & 1268 & 3192 & 1425 & 565 & 1676 & 1425 & 566 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 473 & 2262 & 1010 & 60 & 0 & 0 & 156 & 243 & 207 & 60 & 0 & 0 \\
\hline d1, Uniform Delay [s] & 5.96 & 8.62 & 5.11 & 60.00 & 0.00 & 0.00 & 49.19 & 43.87 & 46.59 & 60.00 & 0.00 & 0.00 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.50 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 1.78 & 1.08 & 0.01 & 0.22 & 0.00 & 0.00 & 3.34 & 0.01 & 1.28 & 0.59 & 0.00 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.32 & 0.58 & 0.00 & 0.03 & 0.00 & 0.00 & 0.58 & 0.00 & 0.41 & 0.08 & 0.00 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 7.74 & 9.70 & 5.12 & 60.22 & 0.00 & 0.00 & 52.53 & 43.88 & 47.87 & 60.59 & 0.00 & 0.00 \\
\hline Lane Group LOS & A & A & A & E & A & A & D & D & D & E & A & A \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.26 & 6.62 & 0.03 & 0.06 & 0.00 & 0.00 & 2.80 & 0.03 & 2.36 & 0.16 & 0.00 & 0.00 \\
\hline 50th-Percentile Queue Length [ft] & 31.42 & 165.46 & 0.77 & 1.56 & 0.00 & 0.00 & 69.98 & 0.65 & 59.00 & 4.08 & 0.00 & 0.00 \\
\hline 95th-Percentile Queue Length [veh] & 2.26 & 10.84 & 0.06 & 0.11 & 0.00 & 0.00 & 5.04 & 0.05 & 4.25 & 0.29 & 0.00 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 56.56 & 270.94 & 1.39 & 2.81 & 0.00 & 0.00 & 125.96 & 1.17 & 106.21 & 7.35 & 0.00 & 0.00 \\
\hline
\end{tabular}

\title{
Movement, Approach, \& Intersection Results
}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 7.74 & 9.70 & 5.12 & 60.22 & 0.00 & 0.00 & 52.53 & 43.88 & 47.87 & 60.59 & 0.00 & 0.00 \\
\hline Movement LOS & A & A & A & E & A & A & D & D & D & E & A & A \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.48} & \multicolumn{3}{|c|}{0.13} & \multicolumn{3}{|c|}{50.24} & \multicolumn{3}{|c|}{17.82} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{B} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{8.94} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.658} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & - & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
144.6

F
1.258

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Peak Hour Factor & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 117 & 360 & 53 & 7 & 222 & 16 & 20 & 47 & 144 & 45 & 36 & 5 \\
\hline Total Analysis Volume [veh/h] & 467 & 1442 & 214 & 30 & 890 & 65 & 79 & 186 & 578 & 181 & 142 & 21 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 51 & 51 & 4 & 27 & 27 & 7 & 38 & 38 & 11 & 42 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.06 & 0.32 & 0.32 & 0.09 & 0.35 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.29 & 0.49 & 0.52 & 0.02 & 0.28 & 0.05 & 0.05 & 0.11 & 0.41 & 0.11 & 0.10 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1603 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1639 \\
\hline c, Capacity [veh/h] & 373 & 708 & 677 & 59 & 721 & 322 & 99 & 529 & 450 & 146 & 566 \\
\hline d1, Uniform Delay [s] & 46.00 & 34.66 & 34.66 & 56.72 & 46.44 & 37.66 & 55.54 & 31.61 & 41.06 & 54.50 & 28.55 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 134.37 & 90.87 & 113.08 & 6.65 & 117.06 & 1.41 & 13.53 & 0.40 & 144.26 & 151.55 & 0.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.25 & 1.17 & 1.22 & 0.51 & 1.23 & 0.20 & 0.80 & 0.35 & 1.28 & 1.24 & 0.29 \\
\hline d, Delay for Lane Group [s/veh] & 180.37 & 125.53 & 147.74 & 63.37 & 163.50 & 39.07 & 69.07 & 32.00 & 185.32 & 206.05 & 28.83 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.37 & 36.57 & 39.15 & 0.97 & 21.88 & 1.61 & 2.73 & 4.22 & 31.11 & 10.58 & 3.47 \\
\hline 50th-Percentile Queue Length [ft] & 609.25 & 914.25 & 978.83 & 24.19 & 547.09 & 40.26 & 68.27 & 105.60 & 777.83 & 264.43 & 86.71 \\
\hline 95th-Percentile Queue Length [veh] & 36.52 & 51.82 & 56.56 & 1.74 & 32.93 & 2.90 & 4.92 & 7.59 & 46.51 & 17.13 & 6.24 \\
\hline 95th-Percentile Queue Length [ft] & 912.94 & 1295.61 & 1414.09 & 43.53 & 823.35 & 72.47 & 122.89 & 189.87 & 1162.64 & 428.37 & 156.07 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 180.37 & 134.98 & 147.74 & 63.37 & 163.50 & 39.07 & 69.07 & 32.00 & 185.32 & 206.05 & 28.83 & 28.83 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{146.25} & \multicolumn{3}{|c|}{152.24} & \multicolumn{3}{|c|}{140.60} & \multicolumn{3}{|c|}{122.07} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{144.58} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.258} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 86.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.196
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Peak Hour Factor & 0.9270 & 0.9270 & 0.9270 & 0.9270 & 0.9270 & 0.9270 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 417 & 106 & 85 & 328 & 82 & 122 \\
\hline Total Analysis Volume [veh/h] & 1668 & 423 & 339 & 1312 & 328 & 487 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.52 & 0.30 & 0.21 & 0.41 & 0.11 & 0.34 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.43 & 48.95 & 12.48 & 34.44 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 100.29 & 6.10 & 101.54 & 1.48 & 0.26 & 113.95 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.21 & 0.69 & 1.16 & 0.63 & 0.37 & 1.21 \\
\hline d, Delay for Lane Group [s/veh] & 134.30 & 33.53 & 150.49 & 13.96 & 34.70 & 156.92 \\
\hline Lane Group LOS & F & C & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 37.36 & 9.99 & 16.60 & 8.94 & 3.88 & 24.61 \\
\hline 50th-Percentile Queue Length [ft] & 934.03 & 249.79 & 415.11 & 223.50 & 97.08 & 615.31 \\
\hline 95th-Percentile Queue Length [veh] & 53.88 & 15.18 & 25.00 & 13.84 & 6.99 & 36.45 \\
\hline 95th-Percentile Queue Length [ft] & 1347.06 & 379.39 & 625.09 & 346.09 & 174.74 & 911.33 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 134.30 & 33.53 & 150.49 & 13.96 & 34.70 & 156.92 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{113.91} & \multicolumn{2}{|c|}{41.99} & \multicolumn{2}{|c|}{107.73} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{86.75} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.196} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline SG: 1 26s & SG: 2 56s & SG: 4 38s \\
\hline & SG: 102 15s & \\
\hline SG: 6 82s & & SG: 7 38s \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes Delay (sec / veh):

15 minutes

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\(T\)} & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Peak Hour Factor & 0.6720 & 0.6720 & 0.6720 & 0.6720 & 0.6720 & 0.6720 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 31 & 1 & 0 & 10 & 2 \\
\hline Total Analysis Volume [veh/h] & 3 & 122 & 6 & 1 & 40 & 7 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.11 & 0.00 & 0.00 & 0.02 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 9.52 & 8.79 & 0.00 & 0.00 & 7.29 & 0.00 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.40 & 0.40 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 9.88 & 9.88 & 0.00 & 0.00 & 1.91 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{8.81} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{6.20} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.78} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 9.2 \\
Analysis Method: & HCM 2010 & Level Of Service: & A \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.000
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Peak Hour Factor & 0.8260 & 0.8260 & 0.8260 & 0.8260 & 0.8260 & 0.8260 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 0 & 11 & 0 & 0 & 10 \\
\hline Total Analysis Volume [veh/h] & 0 & 0 & 45 & 0 & 0 & 40 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.03 & 0.00 & 0.00 & 0.04 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.28 & 0.00 & 9.19 & 8.44 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.09 & 0.00 & 0.11 & 0.11 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.14 & 0.00 & 2.87 & 2.87 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.28} & \multicolumn{2}{|c|}{8.44} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.83} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay \((\) sec \(/\) veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Peak Hour Factor & 0.8070 & 0.8070 & 0.8070 & 0.8070 & 0.8070 & 0.8070 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 17 & 56 & 40 & 26 & 32 & 25 \\
\hline Total Analysis Volume [veh/h] & 69 & 226 & 159 & 103 & 126 & 102 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.42 & 0.67 & 0.67 & 0.82 & 0.73 & 0.87 & 0.53 \\
\hline 95th-Percentile Queue Length [ft] & 10.40 & 16.82 & 16.82 & 20.51 & 18.19 & 21.79 & 13.25 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.93} & \multicolumn{2}{|c|}{9.87} & \multicolumn{2}{|c|}{10.17} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{9.98} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{A} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh): Level Of Service:
16.1 C

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
t
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 39 & 72 & 2 & 1 & 52 & 16 & 23 & 1 & 28 & 1 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 157 & 28 & 8 & 4 & 207 & 66 & 90 & 5 & 114 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 5.75 & 2.18 & 0.64 & 0.03 & 0.68 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 143.87 & 54.57 & 15.93 & 0.69 & 16.90 & 1.68 \\
\hline Approach Delay [s/veh] & 20.81 & 12.84 & & 10.48 & & 10.34 \\
\hline Approach LOS & C & B & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{16.09} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

Traffic Volume - Future Total Volume


Version 4.00-03
Traffic Volume - Future Total Volume


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\Existing PM_new.pdf

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.843 & 5.5 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 0.484 & 12.5 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.675 & 15.6 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.614 & 13.0 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.258 & 144.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.196 & 86.8 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.003 & 9.5 & A \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.081 & 13.2 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 10.0 & A \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 16.1 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03
Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
5.5

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
A
0.843

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Peak Hour Factor & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 & 0.9480 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 301 & 1 & 1 & 214 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1203 & 3 & 2 & 858 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 89 & 0 & 11 & 89 & 0 & 0 & 20 & 0 & 0 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.89 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.72 & 0.00 & 0.27 & 0.00 & 0.04 & 0.00 & 0.03 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1676 & 1597 & 3192 & 1425 & 105 & 1425 & 92 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1485 & 7 & 2818 & 1258 & 46 & 13 & 61 & 13 \\
\hline d1, Uniform Delay [s] & 59.13 & 2.77 & 59.55 & 1.13 & 0.82 & 59.97 & 58.90 & 59.97 & 58.90 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 4.94 & 22.54 & 0.28 & 0.00 & 0.80 & 2.32 & 0.33 & 2.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.81 & 0.30 & 0.30 & 0.00 & 0.09 & 0.07 & 0.05 & 0.07 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 7.71 & 82.09 & 1.41 & 0.83 & 60.78 & 61.22 & 60.30 & 61.22 \\
\hline Lane Group LOS & E & A & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & Yes & No & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 2.04 & 0.10 & 0.11 & 0.00 & 0.13 & 0.04 & 0.10 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 51.00 & 2.50 & 2.73 & 0.01 & 3.31 & 0.97 & 2.43 & 0.97 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 3.67 & 0.18 & 0.20 & 0.00 & 0.24 & 0.07 & 0.17 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 91.81 & 4.49 & 4.92 & 0.02 & 5.95 & 1.75 & 4.37 & 1.75 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 7.71 & 7.71 & 82.09 & 1.41 & 0.83 & 60.78 & 60.78 & 61.22 & 60.30 & 60.30 & 61.22 \\
\hline Movement LOS & E & A & A & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{7.89} & \multicolumn{3}{|c|}{1.59} & \multicolumn{3}{|c|}{60.87} & \multicolumn{3}{|c|}{60.53} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{5.51} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.843} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
12.5
Level Of Service:
Volume to Capacity (v/c):
B
0.484

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 H
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Peak Hour Factor & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 & 0.9690 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 4 & 288 & 35 & 9 & 201 & 4 & 4 & 1 & 4 & 23 & 2 & 6 \\
\hline Total Analysis Volume [veh/h] & 15 & 1152 & 138 & 35 & 803 & 15 & 14 & 5 & 18 & 93 & 7 & 25 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 7 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 17 & 22 & 0 & 29 & 34 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & Yes & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 0.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 2 & 66 & 66 & 4 & 68 & 68 & 2 & 18 & 4 & 10 & 12 & 12 \\
\hline g / C, Green / Cycle & 0.02 & 0.66 & 0.66 & 0.04 & 0.68 & 0.68 & 0.02 & 0.18 & 0.04 & 0.10 & 0.12 & 0.12 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.01 & 0.36 & 0.10 & 0.02 & 0.25 & 0.01 & 0.01 & 0.01 & 0.01 & 0.07 & 0.00 & 0.02 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1511 & 1297 & 1265 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 39 & 2100 & 937 & 70 & 2162 & 965 & 26 & 378 & 49 & 169 & 205 & 174 \\
\hline d1, Uniform Delay [s] & 48.07 & 9.17 & 6.49 & 46.74 & 6.96 & 5.26 & 48.73 & 33.98 & 46.97 & 46.00 & 38.73 & 39.26 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.06 & 1.04 & 0.33 & 5.32 & 0.49 & 0.03 & 8.89 & 0.03 & 4.51 & 2.75 & 0.07 & 0.38 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.38 & 0.55 & 0.15 & 0.50 & 0.37 & 0.02 & 0.38 & 0.02 & 0.37 & 0.55 & 0.03 & 0.14 \\
\hline d, Delay for Lane Group [s/veh] & 54.13 & 10.21 & 6.82 & 52.06 & 7.45 & 5.29 & 57.62 & 34.01 & 51.48 & 48.75 & 38.80 & 39.63 \\
\hline Lane Group LOS & D & B & A & D & A & A & E & C & D & D & D & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.41 & 4.82 & 0.85 & 0.89 & 2.54 & 0.08 & 0.30 & 0.19 & 0.50 & 2.35 & 0.15 & 0.55 \\
\hline 50th-Percentile Queue Length [ft] & 10.22 & 120.44 & 21.29 & 22.37 & 63.55 & 1.89 & 7.61 & 4.70 & 12.43 & 58.66 & 3.76 & 13.71 \\
\hline 95th-Percentile Queue Length [veh] & 0.74 & 8.42 & 1.53 & 1.61 & 4.58 & 0.14 & 0.55 & 0.34 & 0.89 & 4.22 & 0.27 & 0.99 \\
\hline 95th-Percentile Queue Length [ft] & 18.39 & 210.43 & 38.33 & 40.26 & 114.38 & 3.40 & 13.69 & 8.46 & 22.37 & 105.60 & 6.77 & 24.68 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 54.13 & 10.21 & 6.82 & 52.06 & 7.45 & 5.29 & 50.32 & 34.01 & 51.48 & 48.75 & 38.80 & 39.63 \\
\hline Movement LOS & D & B & A & D & A & A & D & C & D & D & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.35} & \multicolumn{3}{|c|}{9.24} & \multicolumn{3}{|c|}{48.74} & \multicolumn{3}{|c|}{46.37} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{12.50} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.484} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
15.6

B
0.675

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
715
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Peak Hour Factor & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 & 0.9490 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 318 & 45 & 22 & 236 & 2 & 2 & 4 & 6 & 31 & 7 & 15 \\
\hline Total Analysis Volume [veh/h] & 24 & 1272 & 180 & 87 & 945 & 8 & 6 & 15 & 25 & 123 & 27 & 61 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 11 & 0 & 29 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 38 & 38 & 6 & 41 & 41 & 1 & 4 & 4 & 7 & 10 & 10 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.04 & 0.54 & 0.54 & 0.08 & 0.58 & 0.58 & 0.01 & 0.05 & 0.05 & 0.10 & 0.14 & 0.14 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.02 & 0.40 & 0.13 & 0.03 & 0.30 & 0.01 & 0.00 & 0.01 & 0.02 & 0.08 & 0.02 & 0.04 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 61 & 1710 & 763 & 256 & 1851 & 826 & 19 & 92 & 79 & 157 & 237 & 202 \\
\hline d1, Uniform Delay [s] & 32.92 & 12.57 & 8.65 & 30.37 & 8.79 & 6.23 & 34.36 & 31.59 & 31.86 & 30.88 & 26.26 & 26.99 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.02 & 2.98 & 0.73 & 0.78 & 1.01 & 0.02 & 9.07 & 0.81 & 2.29 & 8.20 & 0.21 & 0.83 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.39 & 0.74 & 0.24 & 0.34 & 0.51 & 0.01 & 0.31 & 0.16 & 0.32 & 0.78 & 0.11 & 0.30 \\
\hline d, Delay for Lane Group [s/veh] & 36.94 & 15.55 & 9.38 & 31.15 & 9.80 & 6.25 & 43.43 & 32.40 & 34.16 & 39.08 & 26.47 & 27.82 \\
\hline Lane Group LOS & D & B & A & C & A & A & D & C & C & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.43 & 5.98 & 1.18 & 0.65 & 3.03 & 0.04 & 0.15 & 0.26 & 0.45 & 2.31 & 0.39 & 0.93 \\
\hline 50th-Percentile Queue Length [ft] & 10.67 & 149.58 & 29.55 & 16.18 & 75.78 & 0.95 & 3.70 & 6.48 & 11.26 & 57.84 & 9.84 & 23.21 \\
\hline 95th-Percentile Queue Length [veh] & 0.77 & 9.99 & 2.13 & 1.17 & 5.46 & 0.07 & 0.27 & 0.47 & 0.81 & 4.16 & 0.71 & 1.67 \\
\hline 95th-Percentile Queue Length [ft] & 19.20 & 249.87 & 53.18 & 29.13 & 136.40 & 1.71 & 6.66 & 11.66 & 20.28 & 104.12 & 17.71 & 41.77 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.94 & 15.55 & 9.38 & 31.15 & 9.80 & 6.25 & 43.43 & 32.40 & 34.16 & 39.08 & 26.47 & 27.82 \\
\hline Movement LOS & D & B & A & C & A & A & D & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.14} & \multicolumn{3}{|c|}{11.56} & \multicolumn{3}{|c|}{34.79} & \multicolumn{3}{|c|}{34.21} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.58} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.675} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
13.0

B
0.614

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 & 0.9810 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 38 & 326 & 1 & 1 & 219 & 11 & 22 & 0 & 21 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 151 & 1306 & 5 & 2 & 878 & 46 & 90 & 1 & 84 & 5 & 2 & 10 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 21 & 27 & 0 & 13 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 8 & 46 & 46 & 0 & 38 & 38 & 6 & 7 & 7 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.12 & 0.66 & 0.66 & 0.00 & 0.55 & 0.55 & 0.08 & 0.10 & 0.10 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.09 & 0.41 & 0.00 & 0.00 & 0.28 & 0.03 & 0.06 & 0.00 & 0.06 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 190 & 2106 & 940 & 9 & 1743 & 778 & 135 & 161 & 137 & 18 & 38 & 32 \\
\hline d1, Uniform Delay [s] & 30.10 & 6.89 & 4.08 & 34.78 & 9.99 & 7.48 & 31.21 & 28.73 & 30.51 & 34.46 & 33.59 & 33.79 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 7.28 & 1.39 & 0.01 & 12.36 & 1.04 & 0.15 & 5.60 & 0.02 & 4.41 & 8.43 & 0.57 & 5.29 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.79 & 0.62 & 0.01 & 0.23 & 0.50 & 0.06 & 0.67 & 0.01 & 0.61 & 0.28 & 0.05 & 0.31 \\
\hline d, Delay for Lane Group [s/veh] & 37.38 & 8.27 & 4.09 & 47.14 & 11.03 & 7.63 & 36.81 & 28.74 & 34.92 & 42.89 & 34.16 & 39.07 \\
\hline Lane Group LOS & D & A & A & D & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 2.58 & 3.24 & 0.02 & 0.06 & 3.15 & 0.26 & 1.64 & 0.02 & 1.48 & 0.12 & 0.04 & 0.21 \\
\hline 50th-Percentile Queue Length [ft] & 64.48 & 81.06 & 0.39 & 1.53 & 78.63 & 6.46 & 40.93 & 0.39 & 37.09 & 3.09 & 0.96 & 5.26 \\
\hline 95th-Percentile Queue Length [veh] & 4.64 & 5.84 & 0.03 & 0.11 & 5.66 & 0.47 & 2.95 & 0.03 & 2.67 & 0.22 & 0.07 & 0.38 \\
\hline 95th-Percentile Queue Length [ft] & 116.07 & 145.91 & 0.70 & 2.75 & 141.53 & 11.63 & 73.67 & 0.69 & 66.76 & 5.57 & 1.73 & 9.47 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 37.38 & 8.27 & 4.09 & 47.14 & 11.03 & 7.63 & 36.81 & 28.74 & 34.92 & 42.89 & 34.16 & 39.07 \\
\hline Movement LOS & D & A & A & D & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.26} & \multicolumn{3}{|c|}{10.94} & \multicolumn{3}{|c|}{35.86} & \multicolumn{3}{|c|}{39.62} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{13.00} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.614} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
144.6

F
1.258

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Peak Hour Factor & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 & 0.9350 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 117 & 360 & 53 & 7 & 222 & 16 & 20 & 47 & 144 & 45 & 36 & 5 \\
\hline Total Analysis Volume [veh/h] & 467 & 1442 & 214 & 30 & 890 & 65 & 79 & 186 & 578 & 181 & 142 & 21 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 51 & 51 & 4 & 27 & 27 & 7 & 38 & 38 & 11 & 42 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.06 & 0.32 & 0.32 & 0.09 & 0.35 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.29 & 0.49 & 0.52 & 0.02 & 0.28 & 0.05 & 0.05 & 0.11 & 0.41 & 0.11 & 0.10 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1603 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1639 \\
\hline c, Capacity [veh/h] & 373 & 708 & 677 & 59 & 721 & 322 & 99 & 529 & 450 & 146 & 566 \\
\hline d1, Uniform Delay [s] & 46.00 & 34.66 & 34.66 & 56.72 & 46.44 & 37.66 & 55.54 & 31.61 & 41.06 & 54.50 & 28.55 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 134.37 & 90.87 & 113.08 & 6.65 & 117.06 & 1.41 & 13.53 & 0.40 & 144.26 & 151.55 & 0.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.25 & 1.17 & 1.22 & 0.51 & 1.23 & 0.20 & 0.80 & 0.35 & 1.28 & 1.24 & 0.29 \\
\hline d, Delay for Lane Group [s/veh] & 180.37 & 125.53 & 147.74 & 63.37 & 163.50 & 39.07 & 69.07 & 32.00 & 185.32 & 206.05 & 28.83 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.37 & 36.57 & 39.15 & 0.97 & 21.88 & 1.61 & 2.73 & 4.22 & 31.11 & 10.58 & 3.47 \\
\hline 50th-Percentile Queue Length [ft] & 609.25 & 914.25 & 978.83 & 24.19 & 547.09 & 40.26 & 68.27 & 105.60 & 777.83 & 264.43 & 86.71 \\
\hline 95th-Percentile Queue Length [veh] & 36.52 & 51.82 & 56.56 & 1.74 & 32.93 & 2.90 & 4.92 & 7.59 & 46.51 & 17.13 & 6.24 \\
\hline 95th-Percentile Queue Length [ft] & 912.94 & 1295.61 & 1414.09 & 43.53 & 823.35 & 72.47 & 122.89 & 189.87 & 1162.64 & 428.37 & 156.07 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 180.37 & 134.98 & 147.74 & 63.37 & 163.50 & 39.07 & 69.07 & 32.00 & 185.32 & 206.05 & 28.83 & 28.83 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{146.25} & \multicolumn{3}{|c|}{152.24} & \multicolumn{3}{|c|}{140.60} & \multicolumn{3}{|c|}{122.07} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{144.58} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.258} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 86.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.196
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Peak Hour Factor & 0.9270 & 0.9270 & 0.9270 & 0.9270 & 0.9270 & 0.9270 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 417 & 106 & 85 & 328 & 82 & 122 \\
\hline Total Analysis Volume [veh/h] & 1668 & 423 & 339 & 1312 & 328 & 487 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.52 & 0.30 & 0.21 & 0.41 & 0.11 & 0.34 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.43 & 48.95 & 12.48 & 34.44 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 100.29 & 6.10 & 101.54 & 1.48 & 0.26 & 113.95 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.21 & 0.69 & 1.16 & 0.63 & 0.37 & 1.21 \\
\hline d, Delay for Lane Group [s/veh] & 134.30 & 33.53 & 150.49 & 13.96 & 34.70 & 156.92 \\
\hline Lane Group LOS & F & C & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 37.36 & 9.99 & 16.60 & 8.94 & 3.88 & 24.61 \\
\hline 50th-Percentile Queue Length [ft] & 934.03 & 249.79 & 415.11 & 223.50 & 97.08 & 615.31 \\
\hline 95th-Percentile Queue Length [veh] & 53.88 & 15.18 & 25.00 & 13.84 & 6.99 & 36.45 \\
\hline 95th-Percentile Queue Length [ft] & 1347.06 & 379.39 & 625.09 & 346.09 & 174.74 & 911.33 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 134.30 & 33.53 & 150.49 & 13.96 & 34.70 & 156.92 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{113.91} & \multicolumn{2}{|c|}{41.99} & \multicolumn{2}{|c|}{107.73} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{86.75} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.196} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline SG: 1 26s & SG: 2 56s & SG: 4 38s \\
\hline & SG: 102 15s & \\
\hline SG: 6 82s & & SG: 7 38s \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes Delay (sec / veh):

15 minutes

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\(T\)} & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Peak Hour Factor & 0.6720 & 0.6720 & 0.6720 & 0.6720 & 0.6720 & 0.6720 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 31 & 1 & 0 & 10 & 2 \\
\hline Total Analysis Volume [veh/h] & 3 & 122 & 6 & 1 & 40 & 7 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.11 & 0.00 & 0.00 & 0.02 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 9.52 & 8.79 & 0.00 & 0.00 & 7.29 & 0.00 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.40 & 0.40 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 9.88 & 9.88 & 0.00 & 0.00 & 1.91 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{8.81} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{6.20} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.78} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 13.2 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.081
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Peak Hour Factor & 0.8260 & 0.8260 & 0.8260 & 0.8260 & 0.8260 & 0.8260 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 48 & 10 & 12 & 33 & 11 & 37 \\
\hline Total Analysis Volume [veh/h] & 190 & 40 & 48 & 133 & 45 & 148 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Prority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.08 & 0.18 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.79 & 0.00 & 13.18 & 11.02 \\
\hline Movement LOS & A & A & A & A & B & B \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.11 & 0.00 & 1.04 & 1.04 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.79 & 0.00 & 25.88 & 25.88 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.07} & \multicolumn{2}{|c|}{11.52} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.30} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\sec /\) veh): & Level Of Service: \\
Analysis Method: & HCM 2010 & & \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Peak Hour Factor & 0.8070 & 0.8070 & 0.8070 & 0.8070 & 0.8070 & 0.8070 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 17 & 56 & 40 & 26 & 32 & 25 \\
\hline Total Analysis Volume [veh/h] & 69 & 226 & 159 & 103 & 126 & 102 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.42 & 0.67 & 0.67 & 0.82 & 0.73 & 0.87 & 0.53 \\
\hline 95th-Percentile Queue Length [ft] & 10.40 & 16.82 & 16.82 & 20.51 & 18.19 & 21.79 & 13.25 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.93} & \multicolumn{2}{|c|}{9.87} & \multicolumn{2}{|c|}{10.17} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{9.98} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{A} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh): Level Of Service:
16.1 C

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
t
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 & 0.8540 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 39 & 72 & 2 & 1 & 52 & 16 & 23 & 1 & 28 & 1 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 157 & 28 & 8 & 4 & 207 & 66 & 90 & 5 & 114 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 5.75 & 2.18 & 0.64 & 0.03 & 0.68 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 143.87 & 54.57 & 15.93 & 0.69 & 16.90 & 1.68 \\
\hline Approach Delay [s/veh] & 20.81 & 12.84 & & 10.48 & & 10.34 \\
\hline Approach LOS & C & B & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{16.09} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


\section*{Appendix D. Intersection Volumes, Delay, and LOS Calculation Outputs, Existing Plus Project Conditions}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & WB Left & 5,955.496 & 4.2 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & EB Left & 0.849 & 33.3 & C \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.726 & 18.0 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.784 & 16.1 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.463 & 180.4 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.943 & 24.6 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.292 & 23.8 & C \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.237 & 22.4 & C \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 12.7 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 15.5 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
4.2

15 minutes

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
A 5,955.496

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 12 & 0 & 30 & 0 & 0 & 0 & 0 & 15 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 701 & 15 & 0 & 1088 & 3 & 1 & 1 & 4 & 23 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 196 & 4 & 0 & 304 & 1 & 0 & 0 & 1 & 6 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 782 & 17 & 0 & 1214 & 3 & 1 & 1 & 4 & 26 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 90 & 0 & 11 & 90 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 104 & 0 & 103 & 103 & 4 & 4 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.00 & 0.86 & 0.00 & 0.86 & 0.86 & 0.04 & 0.04 & 0.04 & 0.04 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.48 & 0.00 & 0.38 & 0.00 & 0.00 & 0.00 & 5359.47 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1670 & 1597 & 3192 & 1425 & 591 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1441 & 0 & 2748 & 1227 & 67 & 53 & 60 & 53 \\
\hline d1, Uniform Delay [s] & 59.79 & 2.17 & 0.00 & 1.88 & 1.16 & 55.71 & 55.77 & 60.00 & 55.73 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.54 & 0.00 & 0.52 & 0.00 & 0.18 & 0.60 & 21.18 & 0.44 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.55 & 0.00 & 0.44 & 0.00 & 0.03 & 0.08 & 0.43 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 3.71 & 0.00 & 2.39 & 1.17 & 55.89 & 56.36 & 81.18 & 56.17 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & F & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.74 & 0.00 & 0.34 & 0.00 & 0.06 & 0.13 & 1.16 & 0.09 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 18.48 & 0.00 & 8.44 & 0.04 & 1.55 & 3.15 & 29.04 & 2.36 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 1.33 & 0.00 & 0.61 & 0.00 & 0.11 & 0.23 & 2.09 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 33.26 & 0.00 & 15.19 & 0.07 & 2.78 & 5.67 & 52.28 & 4.24 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 3.71 & 3.71 & 0.00 & 2.39 & 1.17 & 55.89 & 55.89 & 56.36 & 81.18 & 81.18 & 56.17 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & F & F & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{3.80} & \multicolumn{3}{|c|}{2.39} & \multicolumn{3}{|c|}{56.21} & \multicolumn{3}{|c|}{78.59} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{4.17} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{5955.496} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
33.3
Level Of Service:
Volume to Capacity (v/c):
c
0.849

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 165 & 0 & 0 & 0 & 0 & 45 & 36 & 24 & 136 & 0 & 30 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 189 & 601 & 162 & 69 & 957 & 100 & 74 & 38 & 167 & 176 & 42 & 58 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 52 & 166 & 45 & 19 & 264 & 28 & 20 & 10 & 46 & 49 & 12 & 16 \\
\hline Total Analysis Volume [veh/h] & 209 & 664 & 179 & 76 & 1057 & 110 & 82 & 42 & 185 & 194 & 46 & 64 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 29 & 28 & 0 & 24 & 23 & 0 & 29 & 21 & 0 & 27 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 15 & 49 & 49 & 6 & 40 & 40 & 7 & 15 & 15 & 14 & 23 & 23 \\
\hline g / C, Green / Cycle & 0.15 & 0.49 & 0.49 & 0.06 & 0.40 & 0.40 & 0.07 & 0.15 & 0.15 & 0.14 & 0.23 & 0.23 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.13 & 0.21 & 0.13 & 0.05 & 0.33 & 0.08 & 0.05 & 0.03 & 0.13 & 0.12 & 0.03 & 0.04 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 242 & 1546 & 690 & 100 & 1262 & 564 & 105 & 254 & 216 & 226 & 382 & 324 \\
\hline d1, Uniform Delay [s] & 41.48 & 16.80 & 15.22 & 46.20 & 27.36 & 19.83 & 46.08 & 36.98 & 41.43 & 41.98 & 30.71 & 31.28 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 8.92 & 0.87 & 0.91 & 11.24 & 6.72 & 0.77 & 11.90 & 0.30 & 9.44 & 9.02 & 0.14 & 0.29 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.86 & 0.43 & 0.26 & 0.76 & 0.84 & 0.20 & 0.78 & 0.17 & 0.86 & 0.86 & 0.12 & 0.20 \\
\hline d, Delay for Lane Group [s/veh] & 50.40 & 17.68 & 16.13 & 57.44 & 34.08 & 20.60 & 57.98 & 37.28 & 50.87 & 51.00 & 30.85 & 31.57 \\
\hline Lane Group LOS & D & B & B & E & C & C & E & D & D & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 5.20 & 4.30 & 2.18 & 2.03 & 10.89 & 1.59 & 2.34 & 0.91 & 4.97 & 5.05 & 0.86 & 1.23 \\
\hline 50th-Percentile Queue Length [ft] & 129.94 & 107.61 & 54.62 & 50.87 & 272.32 & 39.66 & 58.59 & 22.84 & 124.23 & 126.27 & 21.55 & 30.67 \\
\hline 95th-Percentile Queue Length [veh] & 8.94 & 7.71 & 3.93 & 3.66 & 16.31 & 2.86 & 4.22 & 1.64 & 8.63 & 8.74 & 1.55 & 2.21 \\
\hline 95th-Percentile Queue Length [ft] & 223.42 & 192.67 & 98.32 & 91.57 & 407.64 & 71.39 & 105.46 & 41.12 & 215.63 & 218.41 & 38.79 & 55.21 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 50.40 & 17.68 & 16.13 & 57.44 & 34.08 & 20.60 & 57.98 & 37.28 & 50.87 & 51.00 & 30.85 & 31.57 \\
\hline Movement LOS & D & B & B & E & C & C & E & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{23.92} & \multicolumn{3}{|c|}{34.31} & \multicolumn{3}{|c|}{50.91} & \multicolumn{3}{|c|}{43.86} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{33.31} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.849} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Scenario 3: 3: E+P AM
Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
18.0

B
0.726

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 61 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 75 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 22 & 791 & 74 & 107 & 1194 & 12 & 17 & 10 & 12 & 144 & 20 & 151 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 220 & 21 & 30 & 332 & 3 & 5 & 3 & 3 & 40 & 6 & 42 \\
\hline Total Analysis Volume [veh/h] & 24 & 879 & 82 & 119 & 1327 & 13 & 19 & 11 & 13 & 160 & 22 & 168 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 21 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 35 & 35 & 6 & 39 & 39 & 2 & 4 & 4 & 9 & 10 & 10 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.09 & 0.56 & 0.56 & 0.03 & 0.05 & 0.05 & 0.12 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.28 & 0.06 & 0.04 & 0.42 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.12 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 61 & 1604 & 716 & 282 & 1771 & 791 & 51 & 90 & 77 & 199 & 246 & 209 \\
\hline d1, Uniform Delay [s] & 32.92 & 11.98 & 9.21 & 30.14 & 11.89 & 7.01 & 33.25 & 31.59 & 31.67 & 29.87 & 25.88 & 28.96 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.02 & 1.35 & 0.32 & 1.00 & 2.96 & 0.04 & 4.45 & 0.59 & 1.03 & 7.42 & 0.16 & 7.10 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.39 & 0.55 & 0.11 & 0.42 & 0.75 & 0.02 & 0.37 & 0.12 & 0.17 & 0.80 & 0.09 & 0.80 \\
\hline d, Delay for Lane Group [s/veh] & 36.94 & 13.33 & 9.54 & 31.14 & 14.84 & 7.05 & 37.70 & 32.18 & 32.70 & 37.29 & 26.04 & 36.05 \\
\hline Lane Group LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.43 & 3.72 & 0.56 & 0.89 & 5.97 & 0.07 & 0.37 & 0.19 & 0.23 & 2.93 & 0.32 & 3.03 \\
\hline 50th-Percentile Queue Length [ft] & 10.67 & 93.03 & 13.88 & 22.14 & 149.17 & 1.72 & 9.36 & 4.74 & 5.72 & 73.23 & 7.92 & 75.70 \\
\hline 95th-Percentile Queue Length [veh] & 0.77 & 6.70 & 1.00 & 1.59 & 9.97 & 0.12 & 0.67 & 0.34 & 0.41 & 5.27 & 0.57 & 5.45 \\
\hline 95th-Percentile Queue Length [ft] & 19.20 & 167.45 & 24.98 & 39.86 & 249.32 & 3.10 & 16.85 & 8.53 & 10.29 & 131.81 & 14.26 & 136.26 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.94 & 13.33 & 9.54 & 31.14 & 14.84 & 7.05 & 37.70 & 32.18 & 32.70 & 37.29 & 26.04 & 36.05 \\
\hline Movement LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.59} & \multicolumn{3}{|c|}{16.10} & \multicolumn{3}{|c|}{34.78} & \multicolumn{3}{|c|}{35.99} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.97} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.726} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
16.1

B
0.784

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 0 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 86 & 751 & 4 & 6 & 1313 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 24 & 214 & 1 & 2 & 374 & 26 & 16 & 1 & 34 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 98 & 855 & 5 & 7 & 1495 & 103 & 65 & 5 & 137 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 31 & 39 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 53 & 53 & 1 & 48 & 48 & 5 & 10 & 10 & 1 & 5 & 5 \\
\hline g / C, Green / Cycle & 0.08 & 0.66 & 0.66 & 0.01 & 0.60 & 0.60 & 0.07 & 0.12 & 0.12 & 0.01 & 0.06 & 0.06 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.27 & 0.00 & 0.00 & 0.47 & 0.07 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 126 & 2105 & 940 & 23 & 1898 & 847 & 109 & 201 & 171 & 11 & 98 & 83 \\
\hline d1, Uniform Delay [s] & 36.25 & 6.35 & 4.67 & 39.15 & 12.40 & 7.11 & 36.29 & 31.17 & 34.38 & 39.61 & 35.66 & 35.73 \\
\hline k, delay calibration & 0.14 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.76 & 0.58 & 0.01 & 7.48 & 3.40 & 0.29 & 5.09 & 0.05 & 8.47 & 11.65 & 0.21 & 0.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.41 & 0.01 & 0.31 & 0.79 & 0.12 & 0.60 & 0.02 & 0.80 & 0.26 & 0.05 & 0.08 \\
\hline d, Delay for Lane Group [s/veh] & 49.01 & 6.94 & 4.68 & 46.63 & 15.80 & 7.40 & 41.38 & 31.22 & 42.85 & 51.26 & 35.87 & 36.16 \\
\hline Lane Group LOS & D & A & A & D & B & A & D & C & D & D & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 2.17 & 2.22 & 0.02 & 0.17 & 7.86 & 0.62 & 1.36 & 0.09 & 2.94 & 0.09 & 0.10 & 0.14 \\
\hline 50th-Percentile Queue Length [ft] & 54.22 & 55.53 & 0.51 & 4.33 & 196.61 & 15.49 & 34.12 & 2.17 & 73.40 & 2.37 & 2.41 & 3.43 \\
\hline 95th-Percentile Queue Length [veh] & 3.90 & 4.00 & 0.04 & 0.31 & 12.46 & 1.11 & 2.46 & 0.16 & 5.28 & 0.17 & 0.17 & 0.25 \\
\hline 95th-Percentile Queue Length [ft] & 97.60 & 99.96 & 0.91 & 7.79 & 311.59 & 27.87 & 61.42 & 3.90 & 132.12 & 4.27 & 4.34 & 6.17 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 49.01 & 6.94 & 4.68 & 46.63 & 15.80 & 7.40 & 41.38 & 31.22 & 42.85 & 51.26 & 35.87 & 36.16 \\
\hline Movement LOS & D & A & A & D & B & A & D & C & D & D & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.23} & \multicolumn{3}{|c|}{15.39} & \multicolumn{3}{|c|}{42.11} & \multicolumn{3}{|c|}{39.08} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{16.07} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.784} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
180.4

F
1.463

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 45 & 0 & 24 & 39 & 12 & 15 & 0 & 0 & 0 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 359 & 699 & 95 & 45 & 1314 & 99 & 81 & 118 & 535 & 209 & 233 & 47 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 100 & 194 & 26 & 12 & 365 & 27 & 22 & 33 & 148 & 58 & 65 & 13 \\
\hline Total Analysis Volume [veh/h] & 398 & 776 & 105 & 50 & 1458 & 110 & 90 & 131 & 594 & 232 & 259 & 52 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 27 & 0 & 39 & 41 & 0 & 34 & 38 & 38 & 16 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 52 & 52 & 6 & 37 & 37 & 8 & 34 & 34 & 12 & 38 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.05 & 0.31 & 0.31 & 0.07 & 0.28 & 0.28 & 0.10 & 0.31 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.25 & 0.27 & 0.27 & 0.03 & 0.46 & 0.08 & 0.06 & 0.08 & 0.42 & 0.15 & 0.19 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1608 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1628 \\
\hline c, Capacity [veh/h] & 279 & 733 & 703 & 76 & 987 & 441 & 112 & 473 & 402 & 160 & 509 \\
\hline d1, Uniform Delay [s] & 49.50 & 25.97 & 26.01 & 56.21 & 41.44 & 31.01 & 55.01 & 33.53 & 43.07 & 54.00 & 35.07 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.17 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 210.55 & 3.80 & 4.00 & 9.45 & 219.92 & 1.35 & 12.67 & 0.31 & 227.62 & 235.00 & 1.87 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.42 & 0.61 & 0.62 & 0.66 & 1.48 & 0.25 & 0.81 & 0.28 & 1.48 & 1.45 & 0.61 \\
\hline d, Delay for Lane Group [s/veh] & 260.05 & 29.77 & 30.01 & 65.66 & 261.36 & 32.37 & 67.68 & 33.84 & 270.69 & 289.00 & 36.93 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.30 & 9.82 & 9.51 & 1.63 & 43.76 & 2.43 & 3.07 & 3.03 & 37.21 & 15.24 & 7.96 \\
\hline 50th-Percentile Queue Length [ft] & 607.40 & 245.56 & 237.65 & 40.75 & 1093.95 & 60.81 & 76.87 & 75.72 & 930.34 & 380.96 & 198.99 \\
\hline 95th-Percentile Queue Length [veh] & 37.66 & 14.96 & 14.56 & 2.93 & 66.93 & 4.38 & 5.53 & 5.45 & 57.40 & 24.51 & 12.59 \\
\hline 95th-Percentile Queue Length [ft] & 941.55 & 374.06 & 364.06 & 73.35 & 1673.33 & 109.46 & 138.37 & 136.30 & 1435.11 & 612.71 & 314.67 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 260.05 & 29.88 & 30.01 & 65.66 & 261.36 & 32.37 & 67.68 & 33.84 & 270.69 & 289.00 & 36.93 & 36.93 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{101.51} & \multicolumn{3}{|c|}{239.74} & \multicolumn{3}{|c|}{210.20} & \multicolumn{3}{|c|}{144.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{180.40} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.463} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 24.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.943
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 15 & 0 & 27 & 12 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 895 & 216 & 338 & 1708 & 374 & 273 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 241 & 58 & 91 & 459 & 101 & 73 \\
\hline Total Analysis Volume [veh/h] & 962 & 232 & 363 & 1837 & 402 & 294 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 28 & 47 & 23 & 23 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

PLACEWORKS

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 24 & 24 & 18 & 46 & 16 & 16 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.34 & 0.34 & 0.26 & 0.65 & 0.23 & 0.23 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.16 & 0.23 & 0.58 & 0.13 & 0.21 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1086 & 485 & 409 & 2086 & 721 & 331 \\
\hline d1, Uniform Delay [s] & 21.85 & 18.23 & 25.11 & 9.92 & 23.73 & 26.02 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.20 & 0.50 & 0.11 & 0.26 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 10.65 & 3.36 & 11.21 & 5.76 & 0.68 & 16.53 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.89 & 0.48 & 0.89 & 0.88 & 0.56 & 0.89 \\
\hline d, Delay for Lane Group [s/veh] & 32.49 & 21.59 & 36.32 & 15.68 & 24.41 & 42.55 \\
\hline Lane Group LOS & C & C & D & B & B & D \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 7.66 & 2.89 & 6.19 & 7.54 & 2.85 & 5.99 \\
\hline 50th-Percentile Queue Length [ft] & 191.61 & 72.27 & 154.77 & 188.57 & 71.35 & 149.75 \\
\hline 95th-Percentile Queue Length [veh] & 12.20 & 5.20 & 10.27 & 12.05 & 5.14 & 10.00 \\
\hline 95th-Percentile Queue Length [ft] & 305.12 & 130.08 & 256.79 & 301.17 & 128.43 & 250.09 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 32.49 & 21.59 & 36.32 & 15.68 & 24.41 & 42.55 \\
\hline Movement LOS & C & C & D & B & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{30.38} & \multicolumn{2}{|c|}{19.09} & \multicolumn{2}{|c|}{32.07} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{24.59} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.943} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec /veh): & 23.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.292
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 196 & 47 & 0 & 240 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 79 & 200 & 50 & 88 & 243 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 27 & 68 & 17 & 30 & 83 \\
\hline Total Analysis Volume [veh/h] & 84 & 108 & 272 & 68 & 120 & 331 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.29 & 0.15 & 0.00 & 0.00 & 0.10 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 23.82 & 16.20 & 0.00 & 0.00 & 8.28 & 0.00 \\
\hline Movement LOS & C & C & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 2.19 & 2.19 & 0.00 & 0.00 & 0.33 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 54.84 & 54.84 & 0.00 & 0.00 & 8.17 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{19.53} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.20} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.83} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 22.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.237
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 24 & 0 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 189 & 22 & 118 & 138 & 56 & 146 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 64 & 7 & 40 & 47 & 19 & 49 \\
\hline Total Analysis Volume [veh/h] & 255 & 30 & 159 & 186 & 76 & 197 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.12 & 0.00 & 0.24 & 0.26 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.22 & 0.00 & 22.36 & 15.84 \\
\hline Movement LOS & A & A & A & A & C & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.43 & 0.00 & 2.71 & 2.71 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 10.63 & 0.00 & 67.68 & 67.68 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.79} & \multicolumn{2}{|c|}{17.65} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{6.78} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec / veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & & B
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 54 & 44 & 12 & 15 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 77 & 168 & 191 & 108 & 128 & 94 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 29 & 63 & 71 & 40 & 48 & 35 \\
\hline Total Analysis Volume [veh/h] & 115 & 250 & 285 & 161 & 191 & 140 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.90 & 0.91 & 0.91 & 2.01 & 1.78 & 1.82 & 0.93 \\
\hline 95th-Percentile Queue Length [ft] & 22.45 & 22.81 & 22.81 & 50.18 & 44.43 & 45.43 & 23.13 \\
\hline Approach Delay [s/veh] & \multicolumn{4}{|c|}{11.80} & B & 13.28 & 12.97 \\
\hline Approach LOS & \multicolumn{5}{|c|}{12.72} \\
\hline Intersection Delay [s/veh] & \multicolumn{5}{|c|}{B} \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 15.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 0 & 0 & 19 & 10 & 12 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 114 & 190 & 0 & 1 & 263 & 73 & 56 & 3 & 111 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 34 & 57 & 0 & 0 & 79 & 22 & 17 & 1 & 33 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 137 & 228 & 0 & 1 & 316 & 88 & 67 & 4 & 133 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 3.79 & 4.34 & 0.46 & 0.02 & 0.84 & 0.09 \\
\hline 95th-Percentile Queue Length [ft] & 94.80 & 108.53 & 11.49 & 0.56 & 20.92 & 2.36 \\
\hline Approach Delay [s/veh] & 16.60 & 17.24 & & 10.55 & & 10.57 \\
\hline Approach LOS & C & C & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{15.52} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Scenario 4: E+P PM
Report File: Q:\...IE+P PM_new.pdf
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.939 & 7.4 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.659 & 14.7 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.699 & 16.9 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.691 & 14.4 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.308 & 165.2 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.199 & 87.0 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 10.3 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.105 & 14.5 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.2 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 17.3 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
7.4

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):

A
0.939

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
771
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 3 & 0 & 4 & 0 & 0 & 0 & 0 & 2 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1146 & 6 & 2 & 817 & 1 & 2 & 2 & 1 & 5 & 0 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 320 & 2 & 1 & 228 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1279 & 7 & 2 & 912 & 1 & 2 & 2 & 1 & 6 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 88 & 0 & 11 & 88 & 0 & 0 & 21 & 0 & 0 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.88 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.77 & 0.00 & 0.29 & 0.00 & 0.05 & 0.00 & 0.08 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 84 & 1425 & 79 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1479 & 7 & 2808 & 1253 & 46 & 18 & 61 & 18 \\
\hline d1, Uniform Delay [s] & 59.13 & 3.53 & 59.55 & 1.22 & 0.87 & 59.97 & 58.52 & 59.97 & 58.52 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 7.22 & 22.54 & 0.31 & 0.00 & 0.80 & 1.28 & 0.69 & 1.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.87 & 0.30 & 0.32 & 0.00 & 0.09 & 0.06 & 0.10 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 10.74 & 82.09 & 1.52 & 0.87 & 60.77 & 59.80 & 60.67 & 59.80 \\
\hline Lane Group LOS & E & B & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 2.96 & 0.10 & 0.12 & 0.00 & 0.13 & 0.04 & 0.20 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 74.12 & 2.50 & 3.00 & 0.01 & 3.31 & 0.91 & 4.88 & 0.91 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 5.34 & 0.18 & 0.22 & 0.00 & 0.24 & 0.07 & 0.35 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 133.42 & 4.49 & 5.41 & 0.02 & 5.95 & 1.64 & 8.78 & 1.64 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 10.74 & 10.74 & 82.09 & 1.52 & 0.87 & 60.77 & 60.77 & 59.80 & 60.67 & 60.67 & 59.80 \\
\hline Movement LOS & E & B & B & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.90} & \multicolumn{3}{|c|}{1.70} & \multicolumn{3}{|c|}{60.58} & \multicolumn{3}{|c|}{60.54} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{7.37} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.939} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
14.7
Level Of Service:
Volume to Capacity (v/c):
B
0.659

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{T\|F} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 24 & 0 & 0 & 0 & 0 & 6 & 9 & 6 & 30 & 0 & 4 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 39 & 1116 & 134 & 34 & 778 & 21 & 23 & 11 & 47 & 90 & 11 & 24 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 11 & 308 & 37 & 9 & 215 & 6 & 6 & 3 & 13 & 25 & 3 & 7 \\
\hline Total Analysis Volume [veh/h] & 43 & 1233 & 148 & 38 & 860 & 23 & 25 & 12 & 52 & 99 & 12 & 27 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 18 & 19 & 0 & 21 & 22 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 39 & 39 & 4 & 39 & 39 & 3 & 5 & 5 & 6 & 8 & 8 \\
\hline g / C, Green / Cycle & 0.06 & 0.56 & 0.56 & 0.05 & 0.56 & 0.56 & 0.04 & 0.07 & 0.07 & 0.09 & 0.12 & 0.12 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.03 & 0.39 & 0.10 & 0.02 & 0.27 & 0.02 & 0.02 & 0.01 & 0.04 & 0.06 & 0.01 & 0.02 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 94 & 1780 & 795 & 87 & 1766 & 788 & 65 & 122 & 104 & 139 & 200 & 170 \\
\hline d1, Uniform Delay [s] & 31.98 & 11.20 & 7.67 & 32.18 & 9.59 & 7.12 & 32.85 & 30.40 & 31.33 & 31.21 & 27.43 & 27.76 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.45 & 2.24 & 0.52 & 3.44 & 0.96 & 0.07 & 3.71 & 0.35 & 3.68 & 6.56 & 0.12 & 0.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.46 & 0.69 & 0.19 & 0.44 & 0.49 & 0.03 & 0.39 & 0.10 & 0.50 & 0.71 & 0.06 & 0.16 \\
\hline d, Delay for Lane Group [s/veh] & 35.44 & 13.44 & 8.19 & 35.62 & 10.56 & 7.19 & 36.56 & 30.75 & 35.01 & 37.77 & 27.55 & 28.19 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.70 & 4.67 & 0.79 & 0.63 & 2.70 & 0.11 & 0.47 & 0.20 & 0.93 & 1.76 & 0.17 & 0.39 \\
\hline 50th-Percentile Queue Length [ft] & 17.58 & 116.68 & 19.76 & 15.66 & 67.42 & 2.82 & 11.72 & 4.88 & 23.15 & 43.89 & 4.28 & 9.86 \\
\hline 95th-Percentile Queue Length [veh] & 1.27 & 8.21 & 1.42 & 1.13 & 4.85 & 0.20 & 0.84 & 0.35 & 1.67 & 3.16 & 0.31 & 0.71 \\
\hline 95th-Percentile Queue Length [ft] & 31.65 & 205.25 & 35.57 & 28.19 & 121.35 & 5.07 & 21.09 & 8.79 & 41.67 & 79.01 & 7.71 & 17.76 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.44 & 13.44 & 8.19 & 35.62 & 10.56 & 7.19 & 36.56 & 30.75 & 35.01 & 37.77 & 27.55 & 28.19 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.56} & \multicolumn{3}{|c|}{11.51} & \multicolumn{3}{|c|}{34.87} & \multicolumn{3}{|c|}{35.00} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.659} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Scenario 4: 4: E+P PM
Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
16.9

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 14 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 12 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1219 & 171 & 97 & 913 & 8 & 6 & 14 & 24 & 117 & 26 & 70 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 339 & 48 & 27 & 254 & 2 & 2 & 4 & 7 & 33 & 7 & 19 \\
\hline Total Analysis Volume [veh/h] & 26 & 1354 & 190 & 108 & 1014 & 9 & 7 & 16 & 27 & 130 & 29 & 78 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 11 & 11 & 0 & 20 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 45 & 45 & 6 & 48 & 48 & 1 & 4 & 4 & 8 & 11 & 11 \\
\hline g / C, Green / Cycle & 0.04 & 0.56 & 0.56 & 0.08 & 0.60 & 0.60 & 0.01 & 0.05 & 0.05 & 0.10 & 0.14 & 0.14 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.42 & 0.13 & 0.03 & 0.32 & 0.01 & 0.00 & 0.01 & 0.02 & 0.08 & 0.02 & 0.05 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 64 & 1794 & 801 & 251 & 1924 & 859 & 23 & 93 & 79 & 163 & 240 & 204 \\
\hline d1, Uniform Delay [s] & 37.57 & 13.35 & 8.87 & 35.11 & 9.27 & 6.37 & 39.15 & 36.14 & 36.49 & 35.19 & 29.95 & 31.14 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.08 & 3.00 & 0.70 & 1.17 & 1.04 & 0.02 & 7.48 & 0.87 & 2.56 & 8.49 & 0.22 & 1.17 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.41 & 0.75 & 0.24 & 0.43 & 0.53 & 0.01 & 0.31 & 0.17 & 0.34 & 0.80 & 0.12 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 41.65 & 16.36 & 9.57 & 36.28 & 10.31 & 6.39 & 46.63 & 37.02 & 39.05 & 43.67 & 30.17 & 32.31 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.53 & 7.43 & 1.40 & 0.96 & 3.82 & 0.05 & 0.18 & 0.32 & 0.56 & 2.81 & 0.49 & 1.40 \\
\hline 50th-Percentile Queue Length [ft] & 13.29 & 185.72 & 35.02 & 24.02 & 95.57 & 1.21 & 4.57 & 7.99 & 14.04 & 70.17 & 12.32 & 35.07 \\
\hline 95th-Percentile Queue Length [veh] & 0.96 & 11.90 & 2.52 & 1.73 & 6.88 & 0.09 & 0.33 & 0.57 & 1.01 & 5.05 & 0.89 & 2.52 \\
\hline 95th-Percentile Queue Length [ft] & 23.91 & 297.47 & 63.04 & 43.24 & 172.02 & 2.18 & 8.22 & 14.37 & 25.28 & 126.30 & 22.17 & 63.12 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 41.65 & 16.36 & 9.57 & 36.28 & 10.31 & 6.39 & 46.63 & 37.02 & 39.05 & 43.67 & 30.17 & 32.31 \\
\hline Movement LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.95} & \multicolumn{3}{|c|}{12.76} & \multicolumn{3}{|c|}{39.46} & \multicolumn{3}{|c|}{38.28} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{16.91} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.699} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
14.4

B
0.691

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 0 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 148 & 1293 & 5 & 2 & 877 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 368 & 1 & 1 & 250 & 13 & 25 & 0 & 23 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 169 & 1473 & 6 & 2 & 999 & 51 & 100 & 1 & 93 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Scenario 4: 4: E+P PM
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 21 & 27 & 0 & 13 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 9 & 46 & 46 & 0 & 37 & 37 & 6 & 7 & 7 & 1 & 2 & 2 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.13 & 0.66 & 0.66 & 0.00 & 0.53 & 0.53 & 0.09 & 0.10 & 0.10 & 0.01 & 0.02 & 0.02 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.11 & 0.46 & 0.00 & 0.00 & 0.31 & 0.04 & 0.06 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 210 & 2091 & 933 & 9 & 1688 & 754 & 140 & 166 & 141 & 21 & 41 & 35 \\
\hline d1, Uniform Delay [s] & 29.61 & 7.76 & 4.20 & 34.78 & 11.35 & 8.09 & 31.21 & 28.55 & 30.52 & 34.36 & 33.49 & 33.71 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.99 & 2.02 & 0.01 & 12.36 & 1.53 & 0.17 & 6.70 & 0.01 & 5.20 & 7.64 & 0.49 & 5.17 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.80 & 0.70 & 0.01 & 0.23 & 0.59 & 0.07 & 0.72 & 0.01 & 0.66 & 0.29 & 0.05 & 0.32 \\
\hline d, Delay for Lane Group [s/veh] & 36.60 & 9.78 & 4.21 & 47.14 & 12.88 & 8.26 & 37.91 & 28.56 & 35.73 & 42.00 & 33.98 & 38.88 \\
\hline Lane Group LOS & D & A & A & D & B & A & D & C & D & D & C & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 2.85 & 4.22 & 0.02 & 0.06 & 4.08 & 0.31 & 1.85 & 0.02 & 1.66 & 0.14 & 0.04 & 0.23 \\
\hline 50th-Percentile Queue Length [ft] & 71.23 & 105.50 & 0.48 & 1.53 & 101.88 & 7.67 & 46.25 & 0.38 & 41.62 & 3.55 & 0.95 & 5.71 \\
\hline 95th-Percentile Queue Length [veh] & 5.13 & 7.59 & 0.03 & 0.11 & 7.34 & 0.55 & 3.33 & 0.03 & 3.00 & 0.26 & 0.07 & 0.41 \\
\hline 95th-Percentile Queue Length [ft] & 128.22 & 189.72 & 0.87 & 2.75 & 183.39 & 13.80 & 83.26 & 0.69 & 74.91 & 6.39 & 1.71 & 10.29 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.60 & 9.78 & 4.21 & 47.14 & 12.88 & 8.26 & 37.91 & 28.56 & 35.73 & 42.00 & 33.98 & 38.88 \\
\hline Movement LOS & D & A & A & D & B & A & D & C & D & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.51} & \multicolumn{3}{|c|}{12.72} & \multicolumn{3}{|c|}{36.81} & \multicolumn{3}{|c|}{39.35} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.38} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.691} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
165.2

F
1.308

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 0 & 6 & 7 & 3 & 2 & 0 & 0 & 0 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 437 & 1354 & 200 & 34 & 839 & 64 & 76 & 174 & 540 & 169 & 133 & 24 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 121 & 376 & 55 & 9 & 233 & 18 & 21 & 48 & 150 & 47 & 37 & 7 \\
\hline Total Analysis Volume [veh/h] & 485 & 1503 & 222 & 38 & 931 & 71 & 84 & 193 & 599 & 188 & 148 & 27 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Scenario 4: 4: E+P PM
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 50 & 50 & 5 & 27 & 27 & 8 & 38 & 38 & 11 & 41 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.07 & 0.32 & 0.32 & 0.09 & 0.34 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.51 & 0.54 & 0.02 & 0.29 & 0.05 & 0.05 & 0.12 & 0.42 & 0.12 & 0.11 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1604 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1632 \\
\hline c, Capacity [veh/h] & 373 & 700 & 669 & 67 & 721 & 322 & 105 & 529 & 450 & 146 & 558 \\
\hline d1, Uniform Delay [s] & 46.00 & 34.96 & 34.96 & 56.42 & 46.45 & 37.84 & 55.29 & 31.75 & 41.06 & 54.50 & 29.12 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 154.19 & 116.95 & 141.00 & 7.35 & 141.21 & 1.57 & 13.03 & 0.42 & 163.76 & 169.78 & 0.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.30 & 1.23 & 1.29 & 0.57 & 1.29 & 0.22 & 0.80 & 0.36 & 1.33 & 1.28 & 0.31 \\
\hline d, Delay for Lane Group [s/veh] & 200.19 & 151.91 & 175.96 & 63.77 & 187.65 & 39.41 & 68.31 & 32.17 & 204.82 & 224.28 & 29.44 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 26.42 & 41.24 & 43.92 & 1.22 & 24.30 & 1.77 & 2.89 & 4.40 & 33.56 & 11.32 & 3.78 \\
\hline 50th-Percentile Queue Length [ft] & 660.52 & 1030.99 & 1098.00 & 30.58 & 607.42 & 44.24 & 72.13 & 110.11 & 838.91 & 282.96 & 94.55 \\
\hline 95th-Percentile Queue Length [veh] & 39.86 & 59.54 & 64.54 & 2.20 & 36.81 & 3.19 & 5.19 & 7.85 & 50.57 & 18.34 & 6.81 \\
\hline 95th-Percentile Queue Length [ft] & 996.39 & 1488.53 & 1613.55 & 55.05 & 920.27 & 79.63 & 129.83 & 196.16 & 1264.25 & 458.58 & 170.20 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 200.19 & 162.16 & 175.96 & 63.77 & 187.65 & 39.41 & 68.31 & 32.17 & 204.82 & 224.28 & 29.44 & 29.44 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{171.89} & \multicolumn{3}{|c|}{173.01} & \multicolumn{3}{|c|}{153.69} & \multicolumn{3}{|c|}{130.35} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{165.24} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.308} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 87.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.199
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 0 & 4 & 3 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1548 & 392 & 318 & 1219 & 304 & 455 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 416 & 105 & 85 & 328 & 82 & 122 \\
\hline Total Analysis Volume [veh/h] & 1665 & 422 & 342 & 1311 & 327 & 489 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.52 & 0.30 & 0.21 & 0.41 & 0.11 & 0.34 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.40 & 48.95 & 12.47 & 34.43 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 99.37 & 6.06 & 105.29 & 1.48 & 0.26 & 115.90 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.21 & 0.68 & 1.17 & 0.63 & 0.37 & 1.21 \\
\hline d, Delay for Lane Group [s/veh] & 133.37 & 33.46 & 154.24 & 13.95 & 34.69 & 158.88 \\
\hline Lane Group LOS & F & C & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 37.18 & 9.95 & 16.91 & 8.93 & 3.87 & 24.83 \\
\hline 50th-Percentile Queue Length [ft] & 929.59 & 248.85 & 422.75 & 223.20 & 96.74 & 620.80 \\
\hline 95th-Percentile Queue Length [veh] & 53.60 & 15.13 & 25.50 & 13.83 & 6.97 & 36.81 \\
\hline 95th-Percentile Queue Length [ft] & 1339.89 & 378.21 & 637.47 & 345.71 & 174.14 & 920.35 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 133.37 & 33.46 & 154.24 & 13.95 & 34.69 & 158.88 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{113.17} & \multicolumn{2}{|c|}{42.97} & \multicolumn{2}{|c|}{109.11} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{86.98} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.199} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline SG: 1 26s & SG: 2 56s & SG: 4 38s \\
\hline & SG: 102 15s & \\
\hline SG: 6 82s & & SG: 7 38s \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes

Delay (sec / veh):
10.3

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 45 & 13 & 0 & 34 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 82 & 49 & 14 & 27 & 39 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 28 & 17 & 5 & 9 & 13 \\
\hline Total Analysis Volume [veh/h] & 14 & 112 & 67 & 19 & 37 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.11 & 0.00 & 0.00 & 0.02 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.27 & 9.23 & 0.00 & 0.00 & 7.44 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.45 & 0.45 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 11.36 & 11.36 & 0.00 & 0.00 & 1.88 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{9.35} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.06} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.81} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 14.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.105
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{T} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 1 & 4 & 0 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 157 & 34 & 44 & 110 & 39 & 127 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 53 & 11 & 15 & 37 & 13 & 43 \\
\hline Total Analysis Volume [veh/h] & 212 & 46 & 59 & 149 & 53 & 172 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.05 & 0.00 & 0.10 & 0.21 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.89 & 0.00 & 14.50 & 11.85 \\
\hline Movement LOS & A & A & A & A & B & B \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.14 & 0.00 & 1.37 & 1.37 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.54 & 0.00 & 34.33 & 34.33 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.24} & \multicolumn{2}{|c|}{12.47} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.73} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 10 & 3 & 2 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 56 & 191 & 138 & 86 & 104 & 82 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 71 & 51 & 32 & 39 & 31 \\
\hline Total Analysis Volume [veh/h] & 83 & 285 & 206 & 128 & 155 & 122 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.55 & 0.98 & 0.98 & 1.23 & 1.09 & 1.25 & 0.72 \\
\hline 95th-Percentile Queue Length [ft] & 13.81 & 24.46 & 24.46 & 30.71 & 27.27 & 31.19 & 18.03 \\
\hline Approach Delay [s/veh] & \multicolumn{4}{|c|}{11.01} & B & 11.20 & 11.40 \\
\hline Approach LOS & \multicolumn{5}{|c|}{11.18} \\
\hline Intersection Delay [s/veh] & \multicolumn{5}{|c|}{B} \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 17.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{2}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 4 & 0 & 0 & 5 & 2 & 2 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 134 & 250 & 7 & 3 & 182 & 58 & 79 & 4 & 97 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 40 & 75 & 2 & 1 & 55 & 17 & 24 & 1 & 29 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 161 & 300 & 8 & 4 & 219 & 70 & 95 & 5 & 117 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 6.44 & 2.45 & 0.69 & 0.03 & 0.71 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 160.96 & 61.18 & 17.29 & 0.70 & 17.80 & 1.71 \\
\hline Approach Delay [s/veh] & 22.85 & 13.51 & \multicolumn{3}{|c|}{10.71} & 10.49 \\
\hline Approach LOS & C & B & B \\
\hline Intersection Delay [s/veh] & C & C \\
\hline Intersection LOS & &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & WB Left & 5,955.496 & 4.2 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & EB Left & 0.849 & 33.3 & C \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.726 & 18.0 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.865 & 15.0 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.463 & 180.4 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.943 & 24.6 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.292 & 23.8 & C \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.012 & 10.1 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 12.7 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 15.5 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
4.2
A 5,955.496

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 \%
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 12 & 0 & 30 & 0 & 0 & 0 & 0 & 15 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 701 & 15 & 0 & 1088 & 3 & 1 & 1 & 4 & 23 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 196 & 4 & 0 & 304 & 1 & 0 & 0 & 1 & 6 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 782 & 17 & 0 & 1214 & 3 & 1 & 1 & 4 & 26 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 90 & 0 & 11 & 90 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 104 & 0 & 103 & 103 & 4 & 4 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.00 & 0.86 & 0.00 & 0.86 & 0.86 & 0.04 & 0.04 & 0.04 & 0.04 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.48 & 0.00 & 0.38 & 0.00 & 0.00 & 0.00 & 5359.47 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1670 & 1597 & 3192 & 1425 & 591 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1441 & 0 & 2748 & 1227 & 67 & 53 & 60 & 53 \\
\hline d1, Uniform Delay [s] & 59.79 & 2.17 & 0.00 & 1.88 & 1.16 & 55.71 & 55.77 & 60.00 & 55.73 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.54 & 0.00 & 0.52 & 0.00 & 0.18 & 0.60 & 21.18 & 0.44 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.55 & 0.00 & 0.44 & 0.00 & 0.03 & 0.08 & 0.43 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 3.71 & 0.00 & 2.39 & 1.17 & 55.89 & 56.36 & 81.18 & 56.17 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & F & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.74 & 0.00 & 0.34 & 0.00 & 0.06 & 0.13 & 1.16 & 0.09 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 18.48 & 0.00 & 8.44 & 0.04 & 1.55 & 3.15 & 29.04 & 2.36 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 1.33 & 0.00 & 0.61 & 0.00 & 0.11 & 0.23 & 2.09 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 33.26 & 0.00 & 15.19 & 0.07 & 2.78 & 5.67 & 52.28 & 4.24 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 3.71 & 3.71 & 0.00 & 2.39 & 1.17 & 55.89 & 55.89 & 56.36 & 81.18 & 81.18 & 56.17 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & F & F & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{3.80} & \multicolumn{3}{|c|}{2.39} & \multicolumn{3}{|c|}{56.21} & \multicolumn{3}{|c|}{78.59} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{4.17} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{5955.496} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 33.3 \\
Level Of Service: & C \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.849
\end{tabular}
0.849

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 165 & 0 & 0 & 0 & 0 & 45 & 36 & 24 & 136 & 0 & 30 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 189 & 601 & 162 & 69 & 957 & 100 & 74 & 38 & 167 & 176 & 42 & 58 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 52 & 166 & 45 & 19 & 264 & 28 & 20 & 10 & 46 & 49 & 12 & 16 \\
\hline Total Analysis Volume [veh/h] & 209 & 664 & 179 & 76 & 1057 & 110 & 82 & 42 & 185 & 194 & 46 & 64 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 100 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 29 & 28 & 0 & 24 & 23 & 0 & 29 & 21 & 0 & 27 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 15 & 49 & 49 & 6 & 40 & 40 & 7 & 15 & 15 & 14 & 23 & 23 \\
\hline g / C, Green / Cycle & 0.15 & 0.49 & 0.49 & 0.06 & 0.40 & 0.40 & 0.07 & 0.15 & 0.15 & 0.14 & 0.23 & 0.23 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.13 & 0.21 & 0.13 & 0.05 & 0.33 & 0.08 & 0.05 & 0.03 & 0.13 & 0.12 & 0.03 & 0.04 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 242 & 1546 & 690 & 100 & 1262 & 564 & 105 & 254 & 216 & 226 & 382 & 324 \\
\hline d1, Uniform Delay [s] & 41.48 & 16.80 & 15.22 & 46.20 & 27.36 & 19.83 & 46.08 & 36.98 & 41.43 & 41.98 & 30.71 & 31.28 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 8.92 & 0.87 & 0.91 & 11.24 & 6.72 & 0.77 & 11.90 & 0.30 & 9.44 & 9.02 & 0.14 & 0.29 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.86 & 0.43 & 0.26 & 0.76 & 0.84 & 0.20 & 0.78 & 0.17 & 0.86 & 0.86 & 0.12 & 0.20 \\
\hline d, Delay for Lane Group [s/veh] & 50.40 & 17.68 & 16.13 & 57.44 & 34.08 & 20.60 & 57.98 & 37.28 & 50.87 & 51.00 & 30.85 & 31.57 \\
\hline Lane Group LOS & D & B & B & E & C & C & E & D & D & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 5.20 & 4.30 & 2.18 & 2.03 & 10.89 & 1.59 & 2.34 & 0.91 & 4.97 & 5.05 & 0.86 & 1.23 \\
\hline 50th-Percentile Queue Length [ft] & 129.94 & 107.61 & 54.62 & 50.87 & 272.32 & 39.66 & 58.59 & 22.84 & 124.23 & 126.27 & 21.55 & 30.67 \\
\hline 95th-Percentile Queue Length [veh] & 8.94 & 7.71 & 3.93 & 3.66 & 16.31 & 2.86 & 4.22 & 1.64 & 8.63 & 8.74 & 1.55 & 2.21 \\
\hline 95th-Percentile Queue Length [ft] & 223.42 & 192.67 & 98.32 & 91.57 & 407.64 & 71.39 & 105.46 & 41.12 & 215.63 & 218.41 & 38.79 & 55.21 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 50.40 & 17.68 & 16.13 & 57.44 & 34.08 & 20.60 & 57.98 & 37.28 & 50.87 & 51.00 & 30.85 & 31.57 \\
\hline Movement LOS & D & B & B & E & C & C & E & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{23.92} & \multicolumn{3}{|c|}{34.31} & \multicolumn{3}{|c|}{50.91} & \multicolumn{3}{|c|}{43.86} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{33.31} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.849} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
18.0

B
0.726

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| F
\]} & \multicolumn{3}{|c|}{\[
71
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 61 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 75 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 22 & 791 & 74 & 107 & 1194 & 12 & 17 & 10 & 12 & 144 & 20 & 151 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 220 & 21 & 30 & 332 & 3 & 5 & 3 & 3 & 40 & 6 & 42 \\
\hline Total Analysis Volume [veh/h] & 24 & 879 & 82 & 119 & 1327 & 13 & 19 & 11 & 13 & 160 & 22 & 168 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 21 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 35 & 35 & 6 & 39 & 39 & 2 & 4 & 4 & 9 & 10 & 10 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.09 & 0.56 & 0.56 & 0.03 & 0.05 & 0.05 & 0.12 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.28 & 0.06 & 0.04 & 0.42 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.12 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 61 & 1604 & 716 & 282 & 1771 & 791 & 51 & 90 & 77 & 199 & 246 & 209 \\
\hline d1, Uniform Delay [s] & 32.92 & 11.98 & 9.21 & 30.14 & 11.89 & 7.01 & 33.25 & 31.59 & 31.67 & 29.87 & 25.88 & 28.96 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.02 & 1.35 & 0.32 & 1.00 & 2.96 & 0.04 & 4.45 & 0.59 & 1.03 & 7.42 & 0.16 & 7.10 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.39 & 0.55 & 0.11 & 0.42 & 0.75 & 0.02 & 0.37 & 0.12 & 0.17 & 0.80 & 0.09 & 0.80 \\
\hline d, Delay for Lane Group [s/veh] & 36.94 & 13.33 & 9.54 & 31.14 & 14.84 & 7.05 & 37.70 & 32.18 & 32.70 & 37.29 & 26.04 & 36.05 \\
\hline Lane Group LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.43 & 3.72 & 0.56 & 0.89 & 5.97 & 0.07 & 0.37 & 0.19 & 0.23 & 2.93 & 0.32 & 3.03 \\
\hline 50th-Percentile Queue Length [ft] & 10.67 & 93.03 & 13.88 & 22.14 & 149.17 & 1.72 & 9.36 & 4.74 & 5.72 & 73.23 & 7.92 & 75.70 \\
\hline 95th-Percentile Queue Length [veh] & 0.77 & 6.70 & 1.00 & 1.59 & 9.97 & 0.12 & 0.67 & 0.34 & 0.41 & 5.27 & 0.57 & 5.45 \\
\hline 95th-Percentile Queue Length [ft] & 19.20 & 167.45 & 24.98 & 39.86 & 249.32 & 3.10 & 16.85 & 8.53 & 10.29 & 131.81 & 14.26 & 136.26 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.94 & 13.33 & 9.54 & 31.14 & 14.84 & 7.05 & 37.70 & 32.18 & 32.70 & 37.29 & 26.04 & 36.05 \\
\hline Movement LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.59} & \multicolumn{3}{|c|}{16.10} & \multicolumn{3}{|c|}{34.78} & \multicolumn{3}{|c|}{35.99} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.97} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.726} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
15.0

B
0.865

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 0 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 86 & 751 & 4 & 6 & 1313 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 24 & 214 & 1 & 2 & 374 & 26 & 16 & 1 & 34 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 98 & 855 & 5 & 7 & 1495 & 103 & 65 & 5 & 137 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 29 & 0 & 11 & 29 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 34 & 34 & 1 & 29 & 29 & 5 & 7 & 7 & 0 & 3 & 3 \\
\hline g / C, Green / Cycle & 0.10 & 0.59 & 0.59 & 0.01 & 0.50 & 0.50 & 0.08 & 0.12 & 0.12 & 0.01 & 0.05 & 0.05 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.27 & 0.00 & 0.00 & 0.47 & 0.07 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 153 & 1869 & 835 & 21 & 1605 & 717 & 126 & 204 & 173 & 10 & 81 & 69 \\
\hline d1, Uniform Delay [s] & 25.45 & 6.86 & 5.04 & 28.59 & 13.59 & 7.79 & 25.86 & 22.64 & 24.97 & 28.94 & 26.54 & 26.60 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.37 & 0.18 & 0.00 & 8.79 & 3.00 & 0.09 & 3.25 & 0.05 & 7.88 & 17.40 & 0.31 & 0.63 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.64 & 0.46 & 0.01 & 0.33 & 0.93 & 0.14 & 0.52 & 0.02 & 0.79 & 0.31 & 0.06 & 0.10 \\
\hline d, Delay for Lane Group [s/veh] & 29.82 & 7.03 & 5.04 & 37.38 & 16.59 & 7.88 & 29.11 & 22.68 & 32.85 & 46.34 & 26.86 & 27.23 \\
\hline Lane Group LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.30 & 1.62 & 0.01 & 0.14 & 6.34 & 0.47 & 0.93 & 0.06 & 2.10 & 0.09 & 0.07 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 32.40 & 40.43 & 0.35 & 3.40 & 158.49 & 11.65 & 23.25 & 1.49 & 52.52 & 2.15 & 1.75 & 2.51 \\
\hline 95th-Percentile Queue Length [veh] & 2.33 & 2.91 & 0.03 & 0.24 & 10.47 & 0.84 & 1.67 & 0.11 & 3.78 & 0.16 & 0.13 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 58.32 & 72.77 & 0.64 & 6.12 & 261.72 & 20.97 & 41.84 & 2.69 & 94.53 & 3.88 & 3.15 & 4.52 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 29.82 & 7.03 & 5.04 & 37.38 & 16.59 & 7.88 & 29.11 & 22.68 & 32.85 & 46.34 & 26.86 & 27.23 \\
\hline Movement LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.35} & \multicolumn{3}{|c|}{16.12} & \multicolumn{3}{|c|}{31.43} & \multicolumn{3}{|c|}{30.92} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.01} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.865} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
180.4

F
1.463

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 45 & 0 & 24 & 39 & 12 & 15 & 0 & 0 & 0 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 359 & 699 & 95 & 45 & 1314 & 99 & 81 & 118 & 535 & 209 & 233 & 47 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 100 & 194 & 26 & 12 & 365 & 27 & 22 & 33 & 148 & 58 & 65 & 13 \\
\hline Total Analysis Volume [veh/h] & 398 & 776 & 105 & 50 & 1458 & 110 & 90 & 131 & 594 & 232 & 259 & 52 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 27 & 0 & 39 & 41 & 0 & 34 & 38 & 38 & 16 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 22, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 52 & 52 & 6 & 37 & 37 & 8 & 34 & 34 & 12 & 38 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.05 & 0.31 & 0.31 & 0.07 & 0.28 & 0.28 & 0.10 & 0.31 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.25 & 0.27 & 0.27 & 0.03 & 0.46 & 0.08 & 0.06 & 0.08 & 0.42 & 0.15 & 0.19 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1608 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1628 \\
\hline c, Capacity [veh/h] & 279 & 733 & 703 & 76 & 987 & 441 & 112 & 473 & 402 & 160 & 509 \\
\hline d1, Uniform Delay [s] & 49.50 & 25.97 & 26.01 & 56.21 & 41.44 & 31.01 & 55.01 & 33.53 & 43.07 & 54.00 & 35.07 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.17 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 210.55 & 3.80 & 4.00 & 9.45 & 219.92 & 1.35 & 12.67 & 0.31 & 227.62 & 235.00 & 1.87 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.42 & 0.61 & 0.62 & 0.66 & 1.48 & 0.25 & 0.81 & 0.28 & 1.48 & 1.45 & 0.61 \\
\hline d, Delay for Lane Group [s/veh] & 260.05 & 29.77 & 30.01 & 65.66 & 261.36 & 32.37 & 67.68 & 33.84 & 270.69 & 289.00 & 36.93 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.30 & 9.82 & 9.51 & 1.63 & 43.76 & 2.43 & 3.07 & 3.03 & 37.21 & 15.24 & 7.96 \\
\hline 50th-Percentile Queue Length [ft] & 607.40 & 245.56 & 237.65 & 40.75 & 1093.95 & 60.81 & 76.87 & 75.72 & 930.34 & 380.96 & 198.99 \\
\hline 95th-Percentile Queue Length [veh] & 37.66 & 14.96 & 14.56 & 2.93 & 66.93 & 4.38 & 5.53 & 5.45 & 57.40 & 24.51 & 12.59 \\
\hline 95th-Percentile Queue Length [ft] & 941.55 & 374.06 & 364.06 & 73.35 & 1673.33 & 109.46 & 138.37 & 136.30 & 1435.11 & 612.71 & 314.67 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 260.05 & 29.88 & 30.01 & 65.66 & 261.36 & 32.37 & 67.68 & 33.84 & 270.69 & 289.00 & 36.93 & 36.93 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{101.51} & \multicolumn{3}{|c|}{239.74} & \multicolumn{3}{|c|}{210.20} & \multicolumn{3}{|c|}{144.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{180.40} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.463} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03
Intersection Level Of Service Report Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 24.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.943
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 15 & 0 & 27 & 12 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 895 & 216 & 338 & 1708 & 374 & 273 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 241 & 58 & 91 & 459 & 101 & 73 \\
\hline Total Analysis Volume [veh/h] & 962 & 232 & 363 & 1837 & 402 & 294 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 28 & 47 & 23 & 23 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 24 & 24 & 18 & 46 & 16 & 16 \\
\hline g / C, Green / Cycle & 0.34 & 0.34 & 0.26 & 0.65 & 0.23 & 0.23 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.30 & 0.16 & 0.23 & 0.58 & 0.13 & 0.21 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1086 & 485 & 409 & 2086 & 721 & 331 \\
\hline d1, Uniform Delay [s] & 21.85 & 18.23 & 25.11 & 9.92 & 23.73 & 26.02 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.20 & 0.50 & 0.11 & 0.26 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 10.65 & 3.36 & 11.21 & 5.76 & 0.68 & 16.53 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.89 & 0.48 & 0.89 & 0.88 & 0.56 & 0.89 \\
\hline d, Delay for Lane Group [s/veh] & 32.49 & 21.59 & 36.32 & 15.68 & 24.41 & 42.55 \\
\hline Lane Group LOS & C & C & D & B & D & D \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 7.66 & 2.89 & 6.19 & 7.54 & 2.85 & 5.99 \\
\hline 50th-Percentile Queue Length [ft] & 191.61 & 72.27 & 154.77 & 188.57 & 71.35 & 149.75 \\
\hline 95th-Percentile Queue Length [veh] & 12.20 & 5.20 & 10.27 & 12.05 & 5.14 & 10.00 \\
\hline 95th-Percentile Queue Length [ft] & 305.12 & 130.08 & 256.79 & 301.17 & 128.43 & 250.09 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 32.49 & 21.59 & 36.32 & 15.68 & 24.41 & 42.55 \\
\hline Movement LOS & C & C & D & B & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{30.38} & \multicolumn{2}{|c|}{19.09} & \multicolumn{2}{|c|}{32.07} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{24.59} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.943} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec /veh): & 23.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.292
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 196 & 47 & 0 & 240 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 79 & 200 & 50 & 88 & 243 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 27 & 68 & 17 & 30 & 83 \\
\hline Total Analysis Volume [veh/h] & 84 & 108 & 272 & 68 & 120 & 331 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.29 & 0.15 & 0.00 & 0.00 & 0.10 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 23.82 & 16.20 & 0.00 & 0.00 & 8.28 & 0.00 \\
\hline Movement LOS & C & C & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 2.19 & 2.19 & 0.00 & 0.00 & 0.33 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 54.84 & 54.84 & 0.00 & 0.00 & 8.17 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{19.53} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.20} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.83} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.1 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.012
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 24 & 0 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 9 & 73 & 0 & 7 & 32 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 3 & 25 & 0 & 2 & 11 \\
\hline Total Analysis Volume [veh/h] & 0 & 12 & 99 & 0 & 9 & 43 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.06 & 0.00 & 0.01 & 0.04 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.39 & 0.00 & 10.09 & 8.54 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.20 & 0.00 & 0.16 & 0.16 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 4.92 & 0.00 & 4.12 & 4.12 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.39} & \multicolumn{2}{|c|}{8.81} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.30} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec / veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & & B
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 54 & 44 & 12 & 15 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 77 & 168 & 191 & 108 & 128 & 94 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 29 & 63 & 71 & 40 & 48 & 35 \\
\hline Total Analysis Volume [veh/h] & 115 & 250 & 285 & 161 & 191 & 140 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03
Intersection Settings
Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.90 & 0.91 & 0.91 & 2.01 & 1.78 & 1.82 & 0.93 \\
\hline 95th-Percentile Queue Length [ft] & 22.45 & 22.81 & 22.81 & 50.18 & 44.43 & 45.43 & 23.13 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.80} & \multicolumn{2}{|c|}{13.28} & \multicolumn{2}{|c|}{12.97} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{12.72} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 15.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 0 & 0 & 19 & 10 & 12 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 114 & 190 & 0 & 1 & 263 & 73 & 56 & 3 & 111 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 34 & 57 & 0 & 0 & 79 & 22 & 17 & 1 & 33 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 137 & 228 & 0 & 1 & 316 & 88 & 67 & 4 & 133 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 3.79 & 4.34 & 0.46 & 0.02 & 0.84 & 0.09 \\
\hline 95th-Percentile Queue Length [ft] & 94.80 & 108.53 & 11.49 & 0.56 & 20.92 & 2.36 \\
\hline Approach Delay [s/veh] & 16.60 & 17.24 & & 10.55 & & 10.57 \\
\hline Approach LOS & C & C & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{15.52} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.939 & 7.4 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.659 & 14.7 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.699 & 16.9 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.796 & 13.8 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.308 & 165.2 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.199 & 87.0 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 10.3 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.004 & 9.4 & A \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.2 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 17.3 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
7.4

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
A
0.939

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 3 & 0 & 4 & 0 & 0 & 0 & 0 & 2 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1146 & 6 & 2 & 817 & 1 & 2 & 2 & 1 & 5 & 0 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 320 & 2 & 1 & 228 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1279 & 7 & 2 & 912 & 1 & 2 & 2 & 1 & 6 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 88 & 0 & 11 & 88 & 0 & 0 & 21 & 0 & 0 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.88 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.77 & 0.00 & 0.29 & 0.00 & 0.05 & 0.00 & 0.08 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 84 & 1425 & 79 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1479 & 7 & 2808 & 1253 & 46 & 18 & 61 & 18 \\
\hline d1, Uniform Delay [s] & 59.13 & 3.53 & 59.55 & 1.22 & 0.87 & 59.97 & 58.52 & 59.97 & 58.52 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 7.22 & 22.54 & 0.31 & 0.00 & 0.80 & 1.28 & 0.69 & 1.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.87 & 0.30 & 0.32 & 0.00 & 0.09 & 0.06 & 0.10 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 10.74 & 82.09 & 1.52 & 0.87 & 60.77 & 59.80 & 60.67 & 59.80 \\
\hline Lane Group LOS & E & B & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 2.96 & 0.10 & 0.12 & 0.00 & 0.13 & 0.04 & 0.20 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 74.12 & 2.50 & 3.00 & 0.01 & 3.31 & 0.91 & 4.88 & 0.91 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 5.34 & 0.18 & 0.22 & 0.00 & 0.24 & 0.07 & 0.35 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 133.42 & 4.49 & 5.41 & 0.02 & 5.95 & 1.64 & 8.78 & 1.64 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 10.74 & 10.74 & 82.09 & 1.52 & 0.87 & 60.77 & 60.77 & 59.80 & 60.67 & 60.67 & 59.80 \\
\hline Movement LOS & E & B & B & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.90} & \multicolumn{3}{|c|}{1.70} & \multicolumn{3}{|c|}{60.58} & \multicolumn{3}{|c|}{60.54} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{7.37} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.939} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
14.7
Level Of Service:
Volume to Capacity (v/c):
B
0.659

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 24 & 0 & 0 & 0 & 0 & 6 & 9 & 6 & 30 & 0 & 4 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 39 & 1116 & 134 & 34 & 778 & 21 & 23 & 11 & 47 & 90 & 11 & 24 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 11 & 308 & 37 & 9 & 215 & 6 & 6 & 3 & 13 & 25 & 3 & 7 \\
\hline Total Analysis Volume [veh/h] & 43 & 1233 & 148 & 38 & 860 & 23 & 25 & 12 & 52 & 99 & 12 & 27 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 18 & 19 & 0 & 21 & 22 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 39 & 39 & 4 & 39 & 39 & 3 & 5 & 5 & 6 & 8 & 8 \\
\hline g / C, Green / Cycle & 0.06 & 0.56 & 0.56 & 0.05 & 0.56 & 0.56 & 0.04 & 0.07 & 0.07 & 0.09 & 0.12 & 0.12 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.03 & 0.39 & 0.10 & 0.02 & 0.27 & 0.02 & 0.02 & 0.01 & 0.04 & 0.06 & 0.01 & 0.02 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 94 & 1780 & 795 & 87 & 1766 & 788 & 65 & 122 & 104 & 139 & 200 & 170 \\
\hline d1, Uniform Delay [s] & 31.98 & 11.20 & 7.67 & 32.18 & 9.59 & 7.12 & 32.85 & 30.40 & 31.33 & 31.21 & 27.43 & 27.76 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.45 & 2.24 & 0.52 & 3.44 & 0.96 & 0.07 & 3.71 & 0.35 & 3.68 & 6.56 & 0.12 & 0.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.46 & 0.69 & 0.19 & 0.44 & 0.49 & 0.03 & 0.39 & 0.10 & 0.50 & 0.71 & 0.06 & 0.16 \\
\hline d, Delay for Lane Group [s/veh] & 35.44 & 13.44 & 8.19 & 35.62 & 10.56 & 7.19 & 36.56 & 30.75 & 35.01 & 37.77 & 27.55 & 28.19 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.70 & 4.67 & 0.79 & 0.63 & 2.70 & 0.11 & 0.47 & 0.20 & 0.93 & 1.76 & 0.17 & 0.39 \\
\hline 50th-Percentile Queue Length [ft] & 17.58 & 116.68 & 19.76 & 15.66 & 67.42 & 2.82 & 11.72 & 4.88 & 23.15 & 43.89 & 4.28 & 9.86 \\
\hline 95th-Percentile Queue Length [veh] & 1.27 & 8.21 & 1.42 & 1.13 & 4.85 & 0.20 & 0.84 & 0.35 & 1.67 & 3.16 & 0.31 & 0.71 \\
\hline 95th-Percentile Queue Length [ft] & 31.65 & 205.25 & 35.57 & 28.19 & 121.35 & 5.07 & 21.09 & 8.79 & 41.67 & 79.01 & 7.71 & 17.76 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.44 & 13.44 & 8.19 & 35.62 & 10.56 & 7.19 & 36.56 & 30.75 & 35.01 & 37.77 & 27.55 & 28.19 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.56} & \multicolumn{3}{|c|}{11.51} & \multicolumn{3}{|c|}{34.87} & \multicolumn{3}{|c|}{35.00} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.659} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
16.9

B
0.699

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{77浐} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{7 | \({ }^{\text {F }}\)} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 14 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 12 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1219 & 171 & 97 & 913 & 8 & 6 & 14 & 24 & 117 & 26 & 70 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 339 & 48 & 27 & 254 & 2 & 2 & 4 & 7 & 33 & 7 & 19 \\
\hline Total Analysis Volume [veh/h] & 26 & 1354 & 190 & 108 & 1014 & 9 & 7 & 16 & 27 & 130 & 29 & 78 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 80 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 11 & 11 & 0 & 20 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 45 & 45 & 6 & 48 & 48 & 1 & 4 & 4 & 8 & 11 & 11 \\
\hline g / C, Green / Cycle & 0.04 & 0.56 & 0.56 & 0.08 & 0.60 & 0.60 & 0.01 & 0.05 & 0.05 & 0.10 & 0.14 & 0.14 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.42 & 0.13 & 0.03 & 0.32 & 0.01 & 0.00 & 0.01 & 0.02 & 0.08 & 0.02 & 0.05 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 64 & 1794 & 801 & 251 & 1924 & 859 & 23 & 93 & 79 & 163 & 240 & 204 \\
\hline d1, Uniform Delay [s] & 37.57 & 13.35 & 8.87 & 35.11 & 9.27 & 6.37 & 39.15 & 36.14 & 36.49 & 35.19 & 29.95 & 31.14 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.08 & 3.00 & 0.70 & 1.17 & 1.04 & 0.02 & 7.48 & 0.87 & 2.56 & 8.49 & 0.22 & 1.17 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.41 & 0.75 & 0.24 & 0.43 & 0.53 & 0.01 & 0.31 & 0.17 & 0.34 & 0.80 & 0.12 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 41.65 & 16.36 & 9.57 & 36.28 & 10.31 & 6.39 & 46.63 & 37.02 & 39.05 & 43.67 & 30.17 & 32.31 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.53 & 7.43 & 1.40 & 0.96 & 3.82 & 0.05 & 0.18 & 0.32 & 0.56 & 2.81 & 0.49 & 1.40 \\
\hline 50th-Percentile Queue Length [ft] & 13.29 & 185.72 & 35.02 & 24.02 & 95.57 & 1.21 & 4.57 & 7.99 & 14.04 & 70.17 & 12.32 & 35.07 \\
\hline 95th-Percentile Queue Length [veh] & 0.96 & 11.90 & 2.52 & 1.73 & 6.88 & 0.09 & 0.33 & 0.57 & 1.01 & 5.05 & 0.89 & 2.52 \\
\hline 95th-Percentile Queue Length [ft] & 23.91 & 297.47 & 63.04 & 43.24 & 172.02 & 2.18 & 8.22 & 14.37 & 25.28 & 126.30 & 22.17 & 63.12 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 41.65 & 16.36 & 9.57 & 36.28 & 10.31 & 6.39 & 46.63 & 37.02 & 39.05 & 43.67 & 30.17 & 32.31 \\
\hline Movement LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.95} & \multicolumn{3}{|c|}{12.76} & \multicolumn{3}{|c|}{39.46} & \multicolumn{3}{|c|}{38.28} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{16.91} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.699} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
13.8

B
0.796

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 0 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 148 & 1293 & 5 & 2 & 877 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 368 & 1 & 1 & 250 & 13 & 25 & 0 & 23 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 169 & 1473 & 6 & 2 & 999 & 51 & 100 & 1 & 93 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 19 & 29 & 0 & 11 & 21 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 7 & 26 & 26 & 0 & 20 & 20 & 5 & 6 & 6 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.14 & 0.54 & 0.54 & 0.00 & 0.40 & 0.40 & 0.11 & 0.12 & 0.12 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.46 & 0.00 & 0.00 & 0.31 & 0.04 & 0.06 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 219 & 1709 & 763 & 6 & 1285 & 574 & 172 & 201 & 171 & 18 & 40 & 34 \\
\hline d1, Uniform Delay [s] & 20.26 & 9.74 & 5.27 & 24.15 & 12.64 & 9.00 & 20.66 & 18.85 & 20.15 & 23.85 & 23.21 & 23.36 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.72 & 1.39 & 0.00 & 24.75 & 1.05 & 0.07 & 3.09 & 0.01 & 2.68 & 9.81 & 0.52 & 5.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.77 & 0.86 & 0.01 & 0.31 & 0.78 & 0.09 & 0.58 & 0.00 & 0.54 & 0.32 & 0.05 & 0.32 \\
\hline d, Delay for Lane Group [s/veh] & 25.97 & 11.13 & 5.27 & 48.90 & 13.68 & 9.07 & 23.75 & 18.86 & 22.84 & 33.66 & 23.72 & 28.79 \\
\hline Lane Group LOS & C & B & A & D & B & A & C & B & C & C & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 1.79 & 3.40 & 0.01 & 0.06 & 3.11 & 0.22 & 1.12 & 0.01 & 1.02 & 0.11 & 0.03 & 0.16 \\
\hline 50th-Percentile Queue Length [ft] & 44.66 & 84.90 & 0.36 & 1.59 & 77.83 & 5.59 & 28.06 & 0.24 & 25.51 & 2.83 & 0.66 & 4.12 \\
\hline 95th-Percentile Queue Length [veh] & 3.22 & 6.11 & 0.03 & 0.11 & 5.60 & 0.40 & 2.02 & 0.02 & 1.84 & 0.20 & 0.05 & 0.30 \\
\hline 95th-Percentile Queue Length [ft] & 80.39 & 152.81 & 0.65 & 2.85 & 140.10 & 10.06 & 50.51 & 0.43 & 45.92 & 5.09 & 1.18 & 7.42 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 25.97 & 11.13 & 5.27 & 48.90 & 13.68 & 9.07 & 23.75 & 18.86 & 22.84 & 33.66 & 23.72 & 28.79 \\
\hline Movement LOS & C & B & A & D & B & A & C & B & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.63} & \multicolumn{3}{|c|}{13.53} & \multicolumn{3}{|c|}{23.28} & \multicolumn{3}{|c|}{29.80} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{13.78} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.796} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
165.2

F
1.308

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \mid
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 0 & 6 & 7 & 3 & 2 & 0 & 0 & 0 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 437 & 1354 & 200 & 34 & 839 & 64 & 76 & 174 & 540 & 169 & 133 & 24 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 121 & 376 & 55 & 9 & 233 & 18 & 21 & 48 & 150 & 47 & 37 & 7 \\
\hline Total Analysis Volume [veh/h] & 485 & 1503 & 222 & 38 & 931 & 71 & 84 & 193 & 599 & 188 & 148 & 27 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 50 & 50 & 5 & 27 & 27 & 8 & 38 & 38 & 11 & 41 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.07 & 0.32 & 0.32 & 0.09 & 0.34 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.51 & 0.54 & 0.02 & 0.29 & 0.05 & 0.05 & 0.12 & 0.42 & 0.12 & 0.11 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1604 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1632 \\
\hline c, Capacity [veh/h] & 373 & 700 & 669 & 67 & 721 & 322 & 105 & 529 & 450 & 146 & 558 \\
\hline d1, Uniform Delay [s] & 46.00 & 34.96 & 34.96 & 56.42 & 46.45 & 37.84 & 55.29 & 31.75 & 41.06 & 54.50 & 29.12 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 154.19 & 116.95 & 141.00 & 7.35 & 141.21 & 1.57 & 13.03 & 0.42 & 163.76 & 169.78 & 0.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.30 & 1.23 & 1.29 & 0.57 & 1.29 & 0.22 & 0.80 & 0.36 & 1.33 & 1.28 & 0.31 \\
\hline d, Delay for Lane Group [s/veh] & 200.19 & 151.91 & 175.96 & 63.77 & 187.65 & 39.41 & 68.31 & 32.17 & 204.82 & 224.28 & 29.44 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 26.42 & 41.24 & 43.92 & 1.22 & 24.30 & 1.77 & 2.89 & 4.40 & 33.56 & 11.32 & 3.78 \\
\hline 50th-Percentile Queue Length [ft] & 660.52 & 1030.99 & 1098.00 & 30.58 & 607.42 & 44.24 & 72.13 & 110.11 & 838.91 & 282.96 & 94.55 \\
\hline 95th-Percentile Queue Length [veh] & 39.86 & 59.54 & 64.54 & 2.20 & 36.81 & 3.19 & 5.19 & 7.85 & 50.57 & 18.34 & 6.81 \\
\hline 95th-Percentile Queue Length [ft] & 996.39 & 1488.53 & 1613.55 & 55.05 & 920.27 & 79.63 & 129.83 & 196.16 & 1264.25 & 458.58 & 170.20 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 200.19 & 162.16 & 175.96 & 63.77 & 187.65 & 39.41 & 68.31 & 32.17 & 204.82 & 224.28 & 29.44 & 29.44 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{171.89} & \multicolumn{3}{|c|}{173.01} & \multicolumn{3}{|c|}{153.69} & \multicolumn{3}{|c|}{130.35} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{165.24} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.308} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Generated with PTV VISTRO}

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 87.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.199
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 0 & 4 & 3 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1548 & 392 & 318 & 1219 & 304 & 455 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 416 & 105 & 85 & 328 & 82 & 122 \\
\hline Total Analysis Volume [veh/h] & 1665 & 422 & 342 & 1311 & 327 & 489 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & 0 \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline g / C, Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.52 & 0.30 & 0.21 & 0.41 & 0.11 & 0.34 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.40 & 48.95 & 12.47 & 34.43 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 99.37 & 6.06 & 105.29 & 1.48 & 0.26 & 115.90 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.21 & 0.68 & 1.17 & 0.63 & 0.37 & 1.21 \\
\hline d, Delay for Lane Group [s/veh] & 133.37 & 33.46 & 154.24 & 13.95 & 34.69 & 158.88 \\
\hline Lane Group LOS & F & C & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 37.18 & 9.95 & 16.91 & 8.93 & 3.87 & Yes \\
\hline 50th-Percentile Queue Length [ft] & 929.59 & 248.85 & 422.75 & 223.20 & 96.74 & 6 \\
\hline 95th-Percentile Queue Length [veh] & 53.60 & 15.13 & 25.50 & 13.83 & 6.97 & 36.81 \\
\hline 95th-Percentile Queue Length [ft] & 1339.89 & 378.21 & 637.47 & 345.71 & 174.14 & 9 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 133.37 & 33.46 & 154.24 & 13.95 & 34.69 & 158.88 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{113.17} & \multicolumn{2}{|c|}{42.97} & \multicolumn{2}{|c|}{109.11} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{86.98} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.199} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.018
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{5}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 45 & 13 & 0 & 34 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 82 & 49 & 14 & 27 & 39 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 28 & 17 & 5 & 9 & 13 \\
\hline Total Analysis Volume [veh/h] & 14 & 112 & 67 & 19 & 37 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.11 & 0.00 & 0.00 & 0.02 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.27 & 9.23 & 0.00 & 0.00 & 7.44 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.45 & 0.45 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 11.36 & 11.36 & 0.00 & 0.00 & 1.88 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{9.35} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.06} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.81} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 9.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & A \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.004
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 1 & 4 & 0 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 1 & 41 & 0 & 2 & 38 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 0 & 14 & 0 & 1 & 13 \\
\hline Total Analysis Volume [veh/h] & 0 & 1 & 55 & 0 & 3 & 51 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.03 & 0.00 & 0.00 & 0.05 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.30 & 0.00 & 9.38 & 8.50 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.11 & 0.00 & 0.16 & 0.16 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.63 & 0.00 & 3.99 & 3.99 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.30} & \multicolumn{2}{|c|}{8.55} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.85} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
4 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 10 & 3 & 2 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 56 & 191 & 138 & 86 & 104 & 82 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 71 & 51 & 32 & 39 & 31 \\
\hline Total Analysis Volume [veh/h] & 83 & 285 & 206 & 128 & 155 & 122 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.55 & 0.98 & 0.98 & 1.23 & 1.09 & 1.25 & 0.72 \\
\hline 95th-Percentile Queue Length [ft] & 13.81 & 24.46 & 24.46 & 30.71 & 27.27 & 31.19 & 18.03 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.01} & \multicolumn{2}{|c|}{11.20} & \multicolumn{2}{|c|}{11.40} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.18} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 17.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 4 & 0 & 0 & 5 & 2 & 2 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 134 & 250 & 7 & 3 & 182 & 58 & 79 & 4 & 97 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 40 & 75 & 2 & 1 & 55 & 17 & 24 & 1 & 29 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 161 & 300 & 8 & 4 & 219 & 70 & 95 & 5 & 117 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 6.44 & 2.45 & 0.69 & 0.03 & 0.71 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 160.96 & 61.18 & 17.29 & 0.70 & 17.80 & 1.71 \\
\hline Approach Delay [s/veh] & 22.85 & 13.51 & \multicolumn{3}{|c|}{10.71} & 10.49 \\
\hline Approach LOS & C & B & B & \\
\hline Intersection Delay [s/veh] & C & C \\
\hline Intersection LOS & &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & WB Left & 5,955.496 & 4.2 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & EB Left & 0.849 & 33.3 & C \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.726 & 18.0 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.784 & 16.1 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.463 & 180.4 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.943 & 24.6 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.292 & 23.8 & C \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.237 & 22.4 & C \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 12.7 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 15.5 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
4.2

15 minutes

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
A 5,955.496

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
4
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 12 & 0 & 30 & 0 & 0 & 0 & 0 & 15 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 701 & 15 & 0 & 1088 & 3 & 1 & 1 & 4 & 23 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 196 & 4 & 0 & 304 & 1 & 0 & 0 & 1 & 6 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 782 & 17 & 0 & 1214 & 3 & 1 & 1 & 4 & 26 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 90 & 0 & 11 & 90 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 104 & 0 & 103 & 103 & 4 & 4 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.00 & 0.86 & 0.00 & 0.86 & 0.86 & 0.04 & 0.04 & 0.04 & 0.04 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.48 & 0.00 & 0.38 & 0.00 & 0.00 & 0.00 & 5359.47 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1670 & 1597 & 3192 & 1425 & 591 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1441 & 0 & 2748 & 1227 & 67 & 53 & 60 & 53 \\
\hline d1, Uniform Delay [s] & 59.79 & 2.17 & 0.00 & 1.88 & 1.16 & 55.71 & 55.77 & 60.00 & 55.73 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.54 & 0.00 & 0.52 & 0.00 & 0.18 & 0.60 & 21.18 & 0.44 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.55 & 0.00 & 0.44 & 0.00 & 0.03 & 0.08 & 0.43 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 3.71 & 0.00 & 2.39 & 1.17 & 55.89 & 56.36 & 81.18 & 56.17 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & F & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.74 & 0.00 & 0.34 & 0.00 & 0.06 & 0.13 & 1.16 & 0.09 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 18.48 & 0.00 & 8.44 & 0.04 & 1.55 & 3.15 & 29.04 & 2.36 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 1.33 & 0.00 & 0.61 & 0.00 & 0.11 & 0.23 & 2.09 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 33.26 & 0.00 & 15.19 & 0.07 & 2.78 & 5.67 & 52.28 & 4.24 \\
\hline
\end{tabular}

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 3.71 & 3.71 & 0.00 & 2.39 & 1.17 & 55.89 & 55.89 & 56.36 & 81.18 & 81.18 & 56.17 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & F & F & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{3.80} & \multicolumn{3}{|c|}{2.39} & \multicolumn{3}{|c|}{56.21} & \multicolumn{3}{|c|}{78.59} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{4.17} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{5955.496} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
33.3
Level Of Service:
Volume to Capacity (v/c):
c
0.849

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 165 & 0 & 0 & 0 & 0 & 45 & 36 & 24 & 136 & 0 & 30 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 189 & 601 & 162 & 69 & 957 & 100 & 74 & 38 & 167 & 176 & 42 & 58 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 52 & 166 & 45 & 19 & 264 & 28 & 20 & 10 & 46 & 49 & 12 & 16 \\
\hline Total Analysis Volume [veh/h] & 209 & 664 & 179 & 76 & 1057 & 110 & 82 & 42 & 185 & 194 & 46 & 64 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 29 & 28 & 0 & 24 & 23 & 0 & 29 & 21 & 0 & 27 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 15 & 49 & 49 & 6 & 40 & 40 & 7 & 15 & 15 & 14 & 23 & 23 \\
\hline g / C, Green / Cycle & 0.15 & 0.49 & 0.49 & 0.06 & 0.40 & 0.40 & 0.07 & 0.15 & 0.15 & 0.14 & 0.23 & 0.23 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.13 & 0.21 & 0.13 & 0.05 & 0.33 & 0.08 & 0.05 & 0.03 & 0.13 & 0.12 & 0.03 & 0.04 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 242 & 1546 & 690 & 100 & 1262 & 564 & 105 & 254 & 216 & 226 & 382 & 324 \\
\hline d1, Uniform Delay [s] & 41.48 & 16.80 & 15.22 & 46.20 & 27.36 & 19.83 & 46.08 & 36.98 & 41.43 & 41.98 & 30.71 & 31.28 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 8.92 & 0.87 & 0.91 & 11.24 & 6.72 & 0.77 & 11.90 & 0.30 & 9.44 & 9.02 & 0.14 & 0.29 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.86 & 0.43 & 0.26 & 0.76 & 0.84 & 0.20 & 0.78 & 0.17 & 0.86 & 0.86 & 0.12 & 0.20 \\
\hline d, Delay for Lane Group [s/veh] & 50.40 & 17.68 & 16.13 & 57.44 & 34.08 & 20.60 & 57.98 & 37.28 & 50.87 & 51.00 & 30.85 & 31.57 \\
\hline Lane Group LOS & D & B & B & E & C & C & E & D & D & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 5.20 & 4.30 & 2.18 & 2.03 & 10.89 & 1.59 & 2.34 & 0.91 & 4.97 & 5.05 & 0.86 & 1.23 \\
\hline 50th-Percentile Queue Length [ft] & 129.94 & 107.61 & 54.62 & 50.87 & 272.32 & 39.66 & 58.59 & 22.84 & 124.23 & 126.27 & 21.55 & 30.67 \\
\hline 95th-Percentile Queue Length [veh] & 8.94 & 7.71 & 3.93 & 3.66 & 16.31 & 2.86 & 4.22 & 1.64 & 8.63 & 8.74 & 1.55 & 2.21 \\
\hline 95th-Percentile Queue Length [ft] & 223.42 & 192.67 & 98.32 & 91.57 & 407.64 & 71.39 & 105.46 & 41.12 & 215.63 & 218.41 & 38.79 & 55.21 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 50.40 & 17.68 & 16.13 & 57.44 & 34.08 & 20.60 & 57.98 & 37.28 & 50.87 & 51.00 & 30.85 & 31.57 \\
\hline Movement LOS & D & B & B & E & C & C & E & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{23.92} & \multicolumn{3}{|c|}{34.31} & \multicolumn{3}{|c|}{50.91} & \multicolumn{3}{|c|}{43.86} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{33.31} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.849} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
18.0

B
0.726

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
715
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 61 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 75 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 22 & 791 & 74 & 107 & 1194 & 12 & 17 & 10 & 12 & 144 & 20 & 151 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 220 & 21 & 30 & 332 & 3 & 5 & 3 & 3 & 40 & 6 & 42 \\
\hline Total Analysis Volume [veh/h] & 24 & 879 & 82 & 119 & 1327 & 13 & 19 & 11 & 13 & 160 & 22 & 168 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 21 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 35 & 35 & 6 & 39 & 39 & 2 & 4 & 4 & 9 & 10 & 10 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.09 & 0.56 & 0.56 & 0.03 & 0.05 & 0.05 & 0.12 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.28 & 0.06 & 0.04 & 0.42 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.12 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 61 & 1604 & 716 & 282 & 1771 & 791 & 51 & 90 & 77 & 199 & 246 & 209 \\
\hline d1, Uniform Delay [s] & 32.92 & 11.98 & 9.21 & 30.14 & 11.89 & 7.01 & 33.25 & 31.59 & 31.67 & 29.87 & 25.88 & 28.96 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.02 & 1.35 & 0.32 & 1.00 & 2.96 & 0.04 & 4.45 & 0.59 & 1.03 & 7.42 & 0.16 & 7.10 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.39 & 0.55 & 0.11 & 0.42 & 0.75 & 0.02 & 0.37 & 0.12 & 0.17 & 0.80 & 0.09 & 0.80 \\
\hline d, Delay for Lane Group [s/veh] & 36.94 & 13.33 & 9.54 & 31.14 & 14.84 & 7.05 & 37.70 & 32.18 & 32.70 & 37.29 & 26.04 & 36.05 \\
\hline Lane Group LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.43 & 3.72 & 0.56 & 0.89 & 5.97 & 0.07 & 0.37 & 0.19 & 0.23 & 2.93 & 0.32 & 3.03 \\
\hline 50th-Percentile Queue Length [ft] & 10.67 & 93.03 & 13.88 & 22.14 & 149.17 & 1.72 & 9.36 & 4.74 & 5.72 & 73.23 & 7.92 & 75.70 \\
\hline 95th-Percentile Queue Length [veh] & 0.77 & 6.70 & 1.00 & 1.59 & 9.97 & 0.12 & 0.67 & 0.34 & 0.41 & 5.27 & 0.57 & 5.45 \\
\hline 95th-Percentile Queue Length [ft] & 19.20 & 167.45 & 24.98 & 39.86 & 249.32 & 3.10 & 16.85 & 8.53 & 10.29 & 131.81 & 14.26 & 136.26 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.94 & 13.33 & 9.54 & 31.14 & 14.84 & 7.05 & 37.70 & 32.18 & 32.70 & 37.29 & 26.04 & 36.05 \\
\hline Movement LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.59} & \multicolumn{3}{|c|}{16.10} & \multicolumn{3}{|c|}{34.78} & \multicolumn{3}{|c|}{35.99} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.97} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.726} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
16.1

B
0.784

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 0 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 86 & 751 & 4 & 6 & 1313 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 24 & 214 & 1 & 2 & 374 & 26 & 16 & 1 & 34 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 98 & 855 & 5 & 7 & 1495 & 103 & 65 & 5 & 137 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 31 & 39 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 53 & 53 & 1 & 48 & 48 & 5 & 10 & 10 & 1 & 5 & 5 \\
\hline g / C, Green / Cycle & 0.08 & 0.66 & 0.66 & 0.01 & 0.60 & 0.60 & 0.07 & 0.12 & 0.12 & 0.01 & 0.06 & 0.06 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.27 & 0.00 & 0.00 & 0.47 & 0.07 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 126 & 2105 & 940 & 23 & 1898 & 847 & 109 & 201 & 171 & 11 & 98 & 83 \\
\hline d1, Uniform Delay [s] & 36.25 & 6.35 & 4.67 & 39.15 & 12.40 & 7.11 & 36.29 & 31.17 & 34.38 & 39.61 & 35.66 & 35.73 \\
\hline k, delay calibration & 0.14 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.76 & 0.58 & 0.01 & 7.48 & 3.40 & 0.29 & 5.09 & 0.05 & 8.47 & 11.65 & 0.21 & 0.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.41 & 0.01 & 0.31 & 0.79 & 0.12 & 0.60 & 0.02 & 0.80 & 0.26 & 0.05 & 0.08 \\
\hline d, Delay for Lane Group [s/veh] & 49.01 & 6.94 & 4.68 & 46.63 & 15.80 & 7.40 & 41.38 & 31.22 & 42.85 & 51.26 & 35.87 & 36.16 \\
\hline Lane Group LOS & D & A & A & D & B & A & D & C & D & D & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 2.17 & 2.22 & 0.02 & 0.17 & 7.86 & 0.62 & 1.36 & 0.09 & 2.94 & 0.09 & 0.10 & 0.14 \\
\hline 50th-Percentile Queue Length [ft] & 54.22 & 55.53 & 0.51 & 4.33 & 196.61 & 15.49 & 34.12 & 2.17 & 73.40 & 2.37 & 2.41 & 3.43 \\
\hline 95th-Percentile Queue Length [veh] & 3.90 & 4.00 & 0.04 & 0.31 & 12.46 & 1.11 & 2.46 & 0.16 & 5.28 & 0.17 & 0.17 & 0.25 \\
\hline 95th-Percentile Queue Length [ft] & 97.60 & 99.96 & 0.91 & 7.79 & 311.59 & 27.87 & 61.42 & 3.90 & 132.12 & 4.27 & 4.34 & 6.17 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 49.01 & 6.94 & 4.68 & 46.63 & 15.80 & 7.40 & 41.38 & 31.22 & 42.85 & 51.26 & 35.87 & 36.16 \\
\hline Movement LOS & D & A & A & D & B & A & D & C & D & D & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.23} & \multicolumn{3}{|c|}{15.39} & \multicolumn{3}{|c|}{42.11} & \multicolumn{3}{|c|}{39.08} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{16.07} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.784} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
180.4

F
1.463

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 45 & 0 & 24 & 39 & 12 & 15 & 0 & 0 & 0 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 359 & 699 & 95 & 45 & 1314 & 99 & 81 & 118 & 535 & 209 & 233 & 47 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 100 & 194 & 26 & 12 & 365 & 27 & 22 & 33 & 148 & 58 & 65 & 13 \\
\hline Total Analysis Volume [veh/h] & 398 & 776 & 105 & 50 & 1458 & 110 & 90 & 131 & 594 & 232 & 259 & 52 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 27 & 0 & 39 & 41 & 0 & 34 & 38 & 38 & 16 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 52 & 52 & 6 & 37 & 37 & 8 & 34 & 34 & 12 & 38 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.05 & 0.31 & 0.31 & 0.07 & 0.28 & 0.28 & 0.10 & 0.31 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.25 & 0.27 & 0.27 & 0.03 & 0.46 & 0.08 & 0.06 & 0.08 & 0.42 & 0.15 & 0.19 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1608 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1628 \\
\hline c, Capacity [veh/h] & 279 & 733 & 703 & 76 & 987 & 441 & 112 & 473 & 402 & 160 & 509 \\
\hline d1, Uniform Delay [s] & 49.50 & 25.97 & 26.01 & 56.21 & 41.44 & 31.01 & 55.01 & 33.53 & 43.07 & 54.00 & 35.07 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.17 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 210.55 & 3.80 & 4.00 & 9.45 & 219.92 & 1.35 & 12.67 & 0.31 & 227.62 & 235.00 & 1.87 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.42 & 0.61 & 0.62 & 0.66 & 1.48 & 0.25 & 0.81 & 0.28 & 1.48 & 1.45 & 0.61 \\
\hline d, Delay for Lane Group [s/veh] & 260.05 & 29.77 & 30.01 & 65.66 & 261.36 & 32.37 & 67.68 & 33.84 & 270.69 & 289.00 & 36.93 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.30 & 9.82 & 9.51 & 1.63 & 43.76 & 2.43 & 3.07 & 3.03 & 37.21 & 15.24 & 7.96 \\
\hline 50th-Percentile Queue Length [ft] & 607.40 & 245.56 & 237.65 & 40.75 & 1093.95 & 60.81 & 76.87 & 75.72 & 930.34 & 380.96 & 198.99 \\
\hline 95th-Percentile Queue Length [veh] & 37.66 & 14.96 & 14.56 & 2.93 & 66.93 & 4.38 & 5.53 & 5.45 & 57.40 & 24.51 & 12.59 \\
\hline 95th-Percentile Queue Length [ft] & 941.55 & 374.06 & 364.06 & 73.35 & 1673.33 & 109.46 & 138.37 & 136.30 & 1435.11 & 612.71 & 314.67 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 260.05 & 29.88 & 30.01 & 65.66 & 261.36 & 32.37 & 67.68 & 33.84 & 270.69 & 289.00 & 36.93 & 36.93 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{101.51} & \multicolumn{3}{|c|}{239.74} & \multicolumn{3}{|c|}{210.20} & \multicolumn{3}{|c|}{144.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{180.40} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.463} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 24.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.943
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 15 & 0 & 27 & 12 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 895 & 216 & 338 & 1708 & 374 & 273 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 241 & 58 & 91 & 459 & 101 & 73 \\
\hline Total Analysis Volume [veh/h] & 962 & 232 & 363 & 1837 & 402 & 294 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 28 & 47 & 23 & 23 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 24 & 24 & 18 & 46 & 16 & 16 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.34 & 0.34 & 0.26 & 0.65 & 0.23 & 0.23 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.30 & 0.16 & 0.23 & 0.58 & 0.13 & 0.21 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1086 & 485 & 409 & 2086 & 721 & 331 \\
\hline d1, Uniform Delay [s] & 21.85 & 18.23 & 25.11 & 9.92 & 23.73 & 26.02 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.20 & 0.50 & 0.11 & 0.26 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 10.65 & 3.36 & 11.21 & 5.76 & 0.68 & 16.53 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.89 & 0.48 & 0.89 & 0.88 & 0.56 & 0.89 \\
\hline d, Delay for Lane Group [s/veh] & 32.49 & 21.59 & 36.32 & 15.68 & 24.41 & 42.55 \\
\hline Lane Group LOS & C & C & D & B & B & D \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 7.66 & 2.89 & 6.19 & 7.54 & 2.85 & 5.99 \\
\hline 50th-Percentile Queue Length [ft] & 191.61 & 72.27 & 154.77 & 188.57 & 71.35 & 149.75 \\
\hline 95th-Percentile Queue Length [veh] & 12.20 & 5.20 & 10.27 & 12.05 & 5.14 & 10.00 \\
\hline 95th-Percentile Queue Length [ft] & 305.12 & 130.08 & 256.79 & 301.17 & 128.43 & 250.09 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 32.49 & 21.59 & 36.32 & 15.68 & 24.41 & 42.55 \\
\hline Movement LOS & C & C & D & B & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{30.38} & \multicolumn{2}{|c|}{19.09} & \multicolumn{2}{|c|}{32.07} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{24.59} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.943} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 23.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.292
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 196 & 47 & 0 & 240 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 79 & 200 & 50 & 88 & 243 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 27 & 68 & 17 & 30 & 83 \\
\hline Total Analysis Volume [veh/h] & 84 & 108 & 272 & 68 & 120 & 331 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.29 & 0.15 & 0.00 & 0.00 & 0.10 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 23.82 & 16.20 & 0.00 & 0.00 & 8.28 & 0.00 \\
\hline Movement LOS & C & C & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 2.19 & 2.19 & 0.00 & 0.00 & 0.33 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 54.84 & 54.84 & 0.00 & 0.00 & 8.17 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{19.53} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.20} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.83} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 22.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.237
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 24 & 0 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 189 & 22 & 118 & 138 & 56 & 146 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 64 & 7 & 40 & 47 & 19 & 49 \\
\hline Total Analysis Volume [veh/h] & 255 & 30 & 159 & 186 & 76 & 197 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.12 & 0.00 & 0.24 & 0.26 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.22 & 0.00 & 22.36 & 15.84 \\
\hline Movement LOS & A & A & A & A & C & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.43 & 0.00 & 2.71 & 2.71 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 10.63 & 0.00 & 67.68 & 67.68 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.79} & \multicolumn{2}{|c|}{17.65} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{6.78} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec / veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & & B
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 54 & 44 & 12 & 15 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 77 & 168 & 191 & 108 & 128 & 94 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 29 & 63 & 71 & 40 & 48 & 35 \\
\hline Total Analysis Volume [veh/h] & 115 & 250 & 285 & 161 & 191 & 140 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.90 & 0.91 & 0.91 & 2.01 & 1.78 & 1.82 & 0.93 \\
\hline 95th-Percentile Queue Length [ft] & 22.45 & 22.81 & 22.81 & 50.18 & 44.43 & 45.43 & 23.13 \\
\hline Approach Delay [s/veh] & \multicolumn{4}{|c|}{11.80} & B & 13.28 & 12.97 \\
\hline Approach LOS & \multicolumn{5}{|c|}{12.72} \\
\hline Intersection Delay [s/veh] & \multicolumn{5}{|c|}{B} \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 15.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 0 & 0 & 19 & 10 & 12 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 114 & 190 & 0 & 1 & 263 & 73 & 56 & 3 & 111 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 34 & 57 & 0 & 0 & 79 & 22 & 17 & 1 & 33 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 137 & 228 & 0 & 1 & 316 & 88 & 67 & 4 & 133 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 3.79 & 4.34 & 0.46 & 0.02 & 0.84 & 0.09 \\
\hline 95th-Percentile Queue Length [ft] & 94.80 & 108.53 & 11.49 & 0.56 & 20.92 & 2.36 \\
\hline Approach Delay [s/veh] & 16.60 & 17.24 & & 10.55 & & 10.57 \\
\hline Approach LOS & C & C & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{15.52} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Scenario 4: E+P PM
Report File: Q:\...IE+P PM_new.pdf
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.939 & 7.4 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.659 & 14.7 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.699 & 16.9 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.691 & 14.4 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.308 & 165.2 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.199 & 87.0 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 10.3 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.105 & 14.5 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.2 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 17.3 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
7.4

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):

A
0.939

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
771
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 3 & 0 & 4 & 0 & 0 & 0 & 0 & 2 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1146 & 6 & 2 & 817 & 1 & 2 & 2 & 1 & 5 & 0 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 320 & 2 & 1 & 228 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1279 & 7 & 2 & 912 & 1 & 2 & 2 & 1 & 6 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 88 & 0 & 11 & 88 & 0 & 0 & 21 & 0 & 0 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.88 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.77 & 0.00 & 0.29 & 0.00 & 0.05 & 0.00 & 0.08 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 84 & 1425 & 79 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1479 & 7 & 2808 & 1253 & 46 & 18 & 61 & 18 \\
\hline d1, Uniform Delay [s] & 59.13 & 3.53 & 59.55 & 1.22 & 0.87 & 59.97 & 58.52 & 59.97 & 58.52 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 7.22 & 22.54 & 0.31 & 0.00 & 0.80 & 1.28 & 0.69 & 1.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.87 & 0.30 & 0.32 & 0.00 & 0.09 & 0.06 & 0.10 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 10.74 & 82.09 & 1.52 & 0.87 & 60.77 & 59.80 & 60.67 & 59.80 \\
\hline Lane Group LOS & E & B & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 2.96 & 0.10 & 0.12 & 0.00 & 0.13 & 0.04 & 0.20 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 74.12 & 2.50 & 3.00 & 0.01 & 3.31 & 0.91 & 4.88 & 0.91 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 5.34 & 0.18 & 0.22 & 0.00 & 0.24 & 0.07 & 0.35 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 133.42 & 4.49 & 5.41 & 0.02 & 5.95 & 1.64 & 8.78 & 1.64 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 10.74 & 10.74 & 82.09 & 1.52 & 0.87 & 60.77 & 60.77 & 59.80 & 60.67 & 60.67 & 59.80 \\
\hline Movement LOS & E & B & B & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.90} & \multicolumn{3}{|c|}{1.70} & \multicolumn{3}{|c|}{60.58} & \multicolumn{3}{|c|}{60.54} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{7.37} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.939} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
14.7
Level Of Service:
Volume to Capacity (v/c):
B
0.659

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 24 & 0 & 0 & 0 & 0 & 6 & 9 & 6 & 30 & 0 & 4 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 39 & 1116 & 134 & 34 & 778 & 21 & 23 & 11 & 47 & 90 & 11 & 24 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 11 & 308 & 37 & 9 & 215 & 6 & 6 & 3 & 13 & 25 & 3 & 7 \\
\hline Total Analysis Volume [veh/h] & 43 & 1233 & 148 & 38 & 860 & 23 & 25 & 12 & 52 & 99 & 12 & 27 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Scenario 4: 4: E+P PM
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 18 & 19 & 0 & 21 & 22 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 39 & 39 & 4 & 39 & 39 & 3 & 5 & 5 & 6 & 8 & 8 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.06 & 0.56 & 0.56 & 0.05 & 0.56 & 0.56 & 0.04 & 0.07 & 0.07 & 0.09 & 0.12 & 0.12 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.03 & 0.39 & 0.10 & 0.02 & 0.27 & 0.02 & 0.02 & 0.01 & 0.04 & 0.06 & 0.01 & 0.02 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 94 & 1780 & 795 & 87 & 1766 & 788 & 65 & 122 & 104 & 139 & 200 & 170 \\
\hline d1, Uniform Delay [s] & 31.98 & 11.20 & 7.67 & 32.18 & 9.59 & 7.12 & 32.85 & 30.40 & 31.33 & 31.21 & 27.43 & 27.76 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.45 & 2.24 & 0.52 & 3.44 & 0.96 & 0.07 & 3.71 & 0.35 & 3.68 & 6.56 & 0.12 & 0.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.46 & 0.69 & 0.19 & 0.44 & 0.49 & 0.03 & 0.39 & 0.10 & 0.50 & 0.71 & 0.06 & 0.16 \\
\hline d, Delay for Lane Group [s/veh] & 35.44 & 13.44 & 8.19 & 35.62 & 10.56 & 7.19 & 36.56 & 30.75 & 35.01 & 37.77 & 27.55 & 28.19 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.70 & 4.67 & 0.79 & 0.63 & 2.70 & 0.11 & 0.47 & 0.20 & 0.93 & 1.76 & 0.17 & 0.39 \\
\hline 50th-Percentile Queue Length [ft] & 17.58 & 116.68 & 19.76 & 15.66 & 67.42 & 2.82 & 11.72 & 4.88 & 23.15 & 43.89 & 4.28 & 9.86 \\
\hline 95th-Percentile Queue Length [veh] & 1.27 & 8.21 & 1.42 & 1.13 & 4.85 & 0.20 & 0.84 & 0.35 & 1.67 & 3.16 & 0.31 & 0.71 \\
\hline 95th-Percentile Queue Length [ft] & 31.65 & 205.25 & 35.57 & 28.19 & 121.35 & 5.07 & 21.09 & 8.79 & 41.67 & 79.01 & 7.71 & 17.76 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.44 & 13.44 & 8.19 & 35.62 & 10.56 & 7.19 & 36.56 & 30.75 & 35.01 & 37.77 & 27.55 & 28.19 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.56} & \multicolumn{3}{|c|}{11.51} & \multicolumn{3}{|c|}{34.87} & \multicolumn{3}{|c|}{35.00} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.659} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Scenario 4: 4: E+P PM
Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
16.9

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):B

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
715
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 14 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 12 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1219 & 171 & 97 & 913 & 8 & 6 & 14 & 24 & 117 & 26 & 70 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 339 & 48 & 27 & 254 & 2 & 2 & 4 & 7 & 33 & 7 & 19 \\
\hline Total Analysis Volume [veh/h] & 26 & 1354 & 190 & 108 & 1014 & 9 & 7 & 16 & 27 & 130 & 29 & 78 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 11 & 11 & 0 & 20 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 45 & 45 & 6 & 48 & 48 & 1 & 4 & 4 & 8 & 11 & 11 \\
\hline g / C, Green / Cycle & 0.04 & 0.56 & 0.56 & 0.08 & 0.60 & 0.60 & 0.01 & 0.05 & 0.05 & 0.10 & 0.14 & 0.14 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.42 & 0.13 & 0.03 & 0.32 & 0.01 & 0.00 & 0.01 & 0.02 & 0.08 & 0.02 & 0.05 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 64 & 1794 & 801 & 251 & 1924 & 859 & 23 & 93 & 79 & 163 & 240 & 204 \\
\hline d1, Uniform Delay [s] & 37.57 & 13.35 & 8.87 & 35.11 & 9.27 & 6.37 & 39.15 & 36.14 & 36.49 & 35.19 & 29.95 & 31.14 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.08 & 3.00 & 0.70 & 1.17 & 1.04 & 0.02 & 7.48 & 0.87 & 2.56 & 8.49 & 0.22 & 1.17 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.41 & 0.75 & 0.24 & 0.43 & 0.53 & 0.01 & 0.31 & 0.17 & 0.34 & 0.80 & 0.12 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 41.65 & 16.36 & 9.57 & 36.28 & 10.31 & 6.39 & 46.63 & 37.02 & 39.05 & 43.67 & 30.17 & 32.31 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.53 & 7.43 & 1.40 & 0.96 & 3.82 & 0.05 & 0.18 & 0.32 & 0.56 & 2.81 & 0.49 & 1.40 \\
\hline 50th-Percentile Queue Length [ft] & 13.29 & 185.72 & 35.02 & 24.02 & 95.57 & 1.21 & 4.57 & 7.99 & 14.04 & 70.17 & 12.32 & 35.07 \\
\hline 95th-Percentile Queue Length [veh] & 0.96 & 11.90 & 2.52 & 1.73 & 6.88 & 0.09 & 0.33 & 0.57 & 1.01 & 5.05 & 0.89 & 2.52 \\
\hline 95th-Percentile Queue Length [ft] & 23.91 & 297.47 & 63.04 & 43.24 & 172.02 & 2.18 & 8.22 & 14.37 & 25.28 & 126.30 & 22.17 & 63.12 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 41.65 & 16.36 & 9.57 & 36.28 & 10.31 & 6.39 & 46.63 & 37.02 & 39.05 & 43.67 & 30.17 & 32.31 \\
\hline Movement LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.95} & \multicolumn{3}{|c|}{12.76} & \multicolumn{3}{|c|}{39.46} & \multicolumn{3}{|c|}{38.28} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{16.91} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.699} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
14.4

B
0.691

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 0 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 148 & 1293 & 5 & 2 & 877 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 368 & 1 & 1 & 250 & 13 & 25 & 0 & 23 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 169 & 1473 & 6 & 2 & 999 & 51 & 100 & 1 & 93 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Scenario 4: 4: E+P PM
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 21 & 27 & 0 & 13 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 9 & 46 & 46 & 0 & 37 & 37 & 6 & 7 & 7 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.13 & 0.66 & 0.66 & 0.00 & 0.53 & 0.53 & 0.09 & 0.10 & 0.10 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.46 & 0.00 & 0.00 & 0.31 & 0.04 & 0.06 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 210 & 2091 & 933 & 9 & 1688 & 754 & 140 & 166 & 141 & 21 & 41 & 35 \\
\hline d1, Uniform Delay [s] & 29.61 & 7.76 & 4.20 & 34.78 & 11.35 & 8.09 & 31.21 & 28.55 & 30.52 & 34.36 & 33.49 & 33.71 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.99 & 2.02 & 0.01 & 12.36 & 1.53 & 0.17 & 6.70 & 0.01 & 5.20 & 7.64 & 0.49 & 5.17 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.80 & 0.70 & 0.01 & 0.23 & 0.59 & 0.07 & 0.72 & 0.01 & 0.66 & 0.29 & 0.05 & 0.32 \\
\hline d, Delay for Lane Group [s/veh] & 36.60 & 9.78 & 4.21 & 47.14 & 12.88 & 8.26 & 37.91 & 28.56 & 35.73 & 42.00 & 33.98 & 38.88 \\
\hline Lane Group LOS & D & A & A & D & B & A & D & C & D & D & C & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 2.85 & 4.22 & 0.02 & 0.06 & 4.08 & 0.31 & 1.85 & 0.02 & 1.66 & 0.14 & 0.04 & 0.23 \\
\hline 50th-Percentile Queue Length [ft] & 71.23 & 105.50 & 0.48 & 1.53 & 101.88 & 7.67 & 46.25 & 0.38 & 41.62 & 3.55 & 0.95 & 5.71 \\
\hline 95th-Percentile Queue Length [veh] & 5.13 & 7.59 & 0.03 & 0.11 & 7.34 & 0.55 & 3.33 & 0.03 & 3.00 & 0.26 & 0.07 & 0.41 \\
\hline 95th-Percentile Queue Length [ft] & 128.22 & 189.72 & 0.87 & 2.75 & 183.39 & 13.80 & 83.26 & 0.69 & 74.91 & 6.39 & 1.71 & 10.29 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.60 & 9.78 & 4.21 & 47.14 & 12.88 & 8.26 & 37.91 & 28.56 & 35.73 & 42.00 & 33.98 & 38.88 \\
\hline Movement LOS & D & A & A & D & B & A & D & C & D & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.51} & \multicolumn{3}{|c|}{12.72} & \multicolumn{3}{|c|}{36.81} & \multicolumn{3}{|c|}{39.35} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.38} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.691} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
165.2

F
1.308

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 0 & 6 & 7 & 3 & 2 & 0 & 0 & 0 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 437 & 1354 & 200 & 34 & 839 & 64 & 76 & 174 & 540 & 169 & 133 & 24 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 121 & 376 & 55 & 9 & 233 & 18 & 21 & 48 & 150 & 47 & 37 & 7 \\
\hline Total Analysis Volume [veh/h] & 485 & 1503 & 222 & 38 & 931 & 71 & 84 & 193 & 599 & 188 & 148 & 27 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Scenario 4: 4: E+P PM
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 50 & 50 & 5 & 27 & 27 & 8 & 38 & 38 & 11 & 41 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.07 & 0.32 & 0.32 & 0.09 & 0.34 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.51 & 0.54 & 0.02 & 0.29 & 0.05 & 0.05 & 0.12 & 0.42 & 0.12 & 0.11 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1604 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1632 \\
\hline c, Capacity [veh/h] & 373 & 700 & 669 & 67 & 721 & 322 & 105 & 529 & 450 & 146 & 558 \\
\hline d1, Uniform Delay [s] & 46.00 & 34.96 & 34.96 & 56.42 & 46.45 & 37.84 & 55.29 & 31.75 & 41.06 & 54.50 & 29.12 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 154.19 & 116.95 & 141.00 & 7.35 & 141.21 & 1.57 & 13.03 & 0.42 & 163.76 & 169.78 & 0.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.30 & 1.23 & 1.29 & 0.57 & 1.29 & 0.22 & 0.80 & 0.36 & 1.33 & 1.28 & 0.31 \\
\hline d, Delay for Lane Group [s/veh] & 200.19 & 151.91 & 175.96 & 63.77 & 187.65 & 39.41 & 68.31 & 32.17 & 204.82 & 224.28 & 29.44 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 26.42 & 41.24 & 43.92 & 1.22 & 24.30 & 1.77 & 2.89 & 4.40 & 33.56 & 11.32 & 3.78 \\
\hline 50th-Percentile Queue Length [ft] & 660.52 & 1030.99 & 1098.00 & 30.58 & 607.42 & 44.24 & 72.13 & 110.11 & 838.91 & 282.96 & 94.55 \\
\hline 95th-Percentile Queue Length [veh] & 39.86 & 59.54 & 64.54 & 2.20 & 36.81 & 3.19 & 5.19 & 7.85 & 50.57 & 18.34 & 6.81 \\
\hline 95th-Percentile Queue Length [ft] & 996.39 & 1488.53 & 1613.55 & 55.05 & 920.27 & 79.63 & 129.83 & 196.16 & 1264.25 & 458.58 & 170.20 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 200.19 & 162.16 & 175.96 & 63.77 & 187.65 & 39.41 & 68.31 & 32.17 & 204.82 & 224.28 & 29.44 & 29.44 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{171.89} & \multicolumn{3}{|c|}{173.01} & \multicolumn{3}{|c|}{153.69} & \multicolumn{3}{|c|}{130.35} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{165.24} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.308} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 87.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.199
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 0 & 4 & 3 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1548 & 392 & 318 & 1219 & 304 & 455 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 416 & 105 & 85 & 328 & 82 & 122 \\
\hline Total Analysis Volume [veh/h] & 1665 & 422 & 342 & 1311 & 327 & 489 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.52 & 0.30 & 0.21 & 0.41 & 0.11 & 0.34 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.40 & 48.95 & 12.47 & 34.43 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 99.37 & 6.06 & 105.29 & 1.48 & 0.26 & 115.90 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.21 & 0.68 & 1.17 & 0.63 & 0.37 & 1.21 \\
\hline d, Delay for Lane Group [s/veh] & 133.37 & 33.46 & 154.24 & 13.95 & 34.69 & 158.88 \\
\hline Lane Group LOS & F & C & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 37.18 & 9.95 & 16.91 & 8.93 & 3.87 & 24.83 \\
\hline 50th-Percentile Queue Length [ft] & 929.59 & 248.85 & 422.75 & 223.20 & 96.74 & 620.80 \\
\hline 95th-Percentile Queue Length [veh] & 53.60 & 15.13 & 25.50 & 13.83 & 6.97 & 36.81 \\
\hline 95th-Percentile Queue Length [ft] & 1339.89 & 378.21 & 637.47 & 345.71 & 174.14 & 920.35 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 133.37 & 33.46 & 154.24 & 13.95 & 34.69 & 158.88 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{113.17} & \multicolumn{2}{|c|}{42.97} & \multicolumn{2}{|c|}{109.11} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{86.98} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.199} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline SG: 1 26s & SG: 2 56s & SG: 4 38s \\
\hline & SG: 102 15s & \\
\hline SG: 6 82s & & SG: 7 38s \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes

Delay (sec / veh):
10.3

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{5}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 45 & 13 & 0 & 34 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 82 & 49 & 14 & 27 & 39 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 28 & 17 & 5 & 9 & 13 \\
\hline Total Analysis Volume [veh/h] & 14 & 112 & 67 & 19 & 37 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.11 & 0.00 & 0.00 & 0.02 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.27 & 9.23 & 0.00 & 0.00 & 7.44 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.45 & 0.45 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 11.36 & 11.36 & 0.00 & 0.00 & 1.88 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{9.35} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.06} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.81} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 14.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.105
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 1 & 4 & 0 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 157 & 34 & 44 & 110 & 39 & 127 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 53 & 11 & 15 & 37 & 13 & 43 \\
\hline Total Analysis Volume [veh/h] & 212 & 46 & 59 & 149 & 53 & 172 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Prority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.05 & 0.00 & 0.10 & 0.21 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.89 & 0.00 & 14.50 & 11.85 \\
\hline Movement LOS & A & A & A & A & B & B \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.14 & 0.00 & 1.37 & 1.37 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.54 & 0.00 & 34.33 & 34.33 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.24} & \multicolumn{2}{|c|}{12.47} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.73} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 10 & 3 & 2 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 56 & 191 & 138 & 86 & 104 & 82 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 71 & 51 & 32 & 39 & 31 \\
\hline Total Analysis Volume [veh/h] & 83 & 285 & 206 & 128 & 155 & 122 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.55 & 0.98 & 0.98 & 1.23 & 1.09 & 1.25 & 0.72 \\
\hline 95th-Percentile Queue Length [ft] & 13.81 & 24.46 & 24.46 & 30.71 & 27.27 & 31.19 & 18.03 \\
\hline Approach Delay [s/veh] & \multicolumn{4}{|c|}{11.01} & B & 11.20 & 11.40 \\
\hline Approach LOS & \multicolumn{5}{|c|}{11.18} \\
\hline Intersection Delay [s/veh] & \multicolumn{5}{|c|}{B} \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 17.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{2}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 4 & 0 & 0 & 5 & 2 & 2 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 134 & 250 & 7 & 3 & 182 & 58 & 79 & 4 & 97 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 40 & 75 & 2 & 1 & 55 & 17 & 24 & 1 & 29 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 161 & 300 & 8 & 4 & 219 & 70 & 95 & 5 & 117 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 6.44 & 2.45 & 0.69 & 0.03 & 0.71 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 160.96 & 61.18 & 17.29 & 0.70 & 17.80 & 1.71 \\
\hline Approach Delay [s/veh] & 22.85 & 13.51 & \multicolumn{3}{|c|}{10.71} & 10.49 \\
\hline Approach LOS & C & B & B \\
\hline Intersection Delay [s/veh] & C & C \\
\hline Intersection LOS & &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & WB Left & 5,955.496 & 4.2 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & EB Left & 0.849 & 33.3 & C \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.726 & 18.0 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.865 & 15.0 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.463 & 180.4 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.943 & 24.6 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.292 & 23.8 & C \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.012 & 10.1 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 12.7 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 15.5 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
4.2
A
5,955.496

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
771
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
t
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 12 & 0 & 30 & 0 & 0 & 0 & 0 & 15 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 701 & 15 & 0 & 1088 & 3 & 1 & 1 & 4 & 23 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 196 & 4 & 0 & 304 & 1 & 0 & 0 & 1 & 6 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 782 & 17 & 0 & 1214 & 3 & 1 & 1 & 4 & 26 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 90 & 0 & 11 & 90 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 104 & 0 & 103 & 103 & 4 & 4 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.00 & 0.86 & 0.00 & 0.86 & 0.86 & 0.04 & 0.04 & 0.04 & 0.04 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.48 & 0.00 & 0.38 & 0.00 & 0.00 & 0.00 & 5359.47 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1670 & 1597 & 3192 & 1425 & 591 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1441 & 0 & 2748 & 1227 & 67 & 53 & 60 & 53 \\
\hline d1, Uniform Delay [s] & 59.79 & 2.17 & 0.00 & 1.88 & 1.16 & 55.71 & 55.77 & 60.00 & 55.73 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.54 & 0.00 & 0.52 & 0.00 & 0.18 & 0.60 & 21.18 & 0.44 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.55 & 0.00 & 0.44 & 0.00 & 0.03 & 0.08 & 0.43 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 3.71 & 0.00 & 2.39 & 1.17 & 55.89 & 56.36 & 81.18 & 56.17 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & F & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.74 & 0.00 & 0.34 & 0.00 & 0.06 & 0.13 & 1.16 & 0.09 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 18.48 & 0.00 & 8.44 & 0.04 & 1.55 & 3.15 & 29.04 & 2.36 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 1.33 & 0.00 & 0.61 & 0.00 & 0.11 & 0.23 & 2.09 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 33.26 & 0.00 & 15.19 & 0.07 & 2.78 & 5.67 & 52.28 & 4.24 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 3.71 & 3.71 & 0.00 & 2.39 & 1.17 & 55.89 & 55.89 & 56.36 & 81.18 & 81.18 & 56.17 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & F & F & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{3.80} & \multicolumn{3}{|c|}{2.39} & \multicolumn{3}{|c|}{56.21} & \multicolumn{3}{|c|}{78.59} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{4.17} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{5955.496} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes

Delay (sec / veh):
33.3

Level Of Service:
Volume to Capacity (v/c):

C
0.849

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 165 & 0 & 0 & 0 & 0 & 45 & 36 & 24 & 136 & 0 & 30 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 189 & 601 & 162 & 69 & 957 & 100 & 74 & 38 & 167 & 176 & 42 & 58 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 52 & 166 & 45 & 19 & 264 & 28 & 20 & 10 & 46 & 49 & 12 & 16 \\
\hline Total Analysis Volume [veh/h] & 209 & 664 & 179 & 76 & 1057 & 110 & 82 & 42 & 185 & 194 & 46 & 64 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 100 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 29 & 28 & 0 & 24 & 23 & 0 & 29 & 21 & 0 & 27 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 15 & 49 & 49 & 6 & 40 & 40 & 7 & 15 & 15 & 14 & 23 & 23 \\
\hline g / C, Green / Cycle & 0.15 & 0.49 & 0.49 & 0.06 & 0.40 & 0.40 & 0.07 & 0.15 & 0.15 & 0.14 & 0.23 & 0.23 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.13 & 0.21 & 0.13 & 0.05 & 0.33 & 0.08 & 0.05 & 0.03 & 0.13 & 0.12 & 0.03 & 0.04 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 242 & 1546 & 690 & 100 & 1262 & 564 & 105 & 254 & 216 & 226 & 382 & 324 \\
\hline d1, Uniform Delay [s] & 41.48 & 16.80 & 15.22 & 46.20 & 27.36 & 19.83 & 46.08 & 36.98 & 41.43 & 41.98 & 30.71 & 31.28 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 8.92 & 0.87 & 0.91 & 11.24 & 6.72 & 0.77 & 11.90 & 0.30 & 9.44 & 9.02 & 0.14 & 0.29 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.86 & 0.43 & 0.26 & 0.76 & 0.84 & 0.20 & 0.78 & 0.17 & 0.86 & 0.86 & 0.12 & 0.20 \\
\hline d, Delay for Lane Group [s/veh] & 50.40 & 17.68 & 16.13 & 57.44 & 34.08 & 20.60 & 57.98 & 37.28 & 50.87 & 51.00 & 30.85 & 31.57 \\
\hline Lane Group LOS & D & B & B & E & C & C & E & D & D & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 5.20 & 4.30 & 2.18 & 2.03 & 10.89 & 1.59 & 2.34 & 0.91 & 4.97 & 5.05 & 0.86 & 1.23 \\
\hline 50th-Percentile Queue Length [ft] & 129.94 & 107.61 & 54.62 & 50.87 & 272.32 & 39.66 & 58.59 & 22.84 & 124.23 & 126.27 & 21.55 & 30.67 \\
\hline 95th-Percentile Queue Length [veh] & 8.94 & 7.71 & 3.93 & 3.66 & 16.31 & 2.86 & 4.22 & 1.64 & 8.63 & 8.74 & 1.55 & 2.21 \\
\hline 95th-Percentile Queue Length [ft] & 223.42 & 192.67 & 98.32 & 91.57 & 407.64 & 71.39 & 105.46 & 41.12 & 215.63 & 218.41 & 38.79 & 55.21 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 50.40 & 17.68 & 16.13 & 57.44 & 34.08 & 20.60 & 57.98 & 37.28 & 50.87 & 51.00 & 30.85 & 31.57 \\
\hline Movement LOS & D & B & B & E & C & C & E & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{23.92} & \multicolumn{3}{|c|}{34.31} & \multicolumn{3}{|c|}{50.91} & \multicolumn{3}{|c|}{43.86} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{33.31} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.849} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
18.0

B
0.726

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 61 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 75 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 22 & 791 & 74 & 107 & 1194 & 12 & 17 & 10 & 12 & 144 & 20 & 151 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 220 & 21 & 30 & 332 & 3 & 5 & 3 & 3 & 40 & 6 & 42 \\
\hline Total Analysis Volume [veh/h] & 24 & 879 & 82 & 119 & 1327 & 13 & 19 & 11 & 13 & 160 & 22 & 168 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 21 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 35 & 35 & 6 & 39 & 39 & 2 & 4 & 4 & 9 & 10 & 10 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.09 & 0.56 & 0.56 & 0.03 & 0.05 & 0.05 & 0.12 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.28 & 0.06 & 0.04 & 0.42 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.12 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 61 & 1604 & 716 & 282 & 1771 & 791 & 51 & 90 & 77 & 199 & 246 & 209 \\
\hline d1, Uniform Delay [s] & 32.92 & 11.98 & 9.21 & 30.14 & 11.89 & 7.01 & 33.25 & 31.59 & 31.67 & 29.87 & 25.88 & 28.96 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.02 & 1.35 & 0.32 & 1.00 & 2.96 & 0.04 & 4.45 & 0.59 & 1.03 & 7.42 & 0.16 & 7.10 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.39 & 0.55 & 0.11 & 0.42 & 0.75 & 0.02 & 0.37 & 0.12 & 0.17 & 0.80 & 0.09 & 0.80 \\
\hline d, Delay for Lane Group [s/veh] & 36.94 & 13.33 & 9.54 & 31.14 & 14.84 & 7.05 & 37.70 & 32.18 & 32.70 & 37.29 & 26.04 & 36.05 \\
\hline Lane Group LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.43 & 3.72 & 0.56 & 0.89 & 5.97 & 0.07 & 0.37 & 0.19 & 0.23 & 2.93 & 0.32 & 3.03 \\
\hline 50th-Percentile Queue Length [ft] & 10.67 & 93.03 & 13.88 & 22.14 & 149.17 & 1.72 & 9.36 & 4.74 & 5.72 & 73.23 & 7.92 & 75.70 \\
\hline 95th-Percentile Queue Length [veh] & 0.77 & 6.70 & 1.00 & 1.59 & 9.97 & 0.12 & 0.67 & 0.34 & 0.41 & 5.27 & 0.57 & 5.45 \\
\hline 95th-Percentile Queue Length [ft] & 19.20 & 167.45 & 24.98 & 39.86 & 249.32 & 3.10 & 16.85 & 8.53 & 10.29 & 131.81 & 14.26 & 136.26 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.94 & 13.33 & 9.54 & 31.14 & 14.84 & 7.05 & 37.70 & 32.18 & 32.70 & 37.29 & 26.04 & 36.05 \\
\hline Movement LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.59} & \multicolumn{3}{|c|}{16.10} & \multicolumn{3}{|c|}{34.78} & \multicolumn{3}{|c|}{35.99} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.97} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.726} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
15.0

B
0.865

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 0 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 86 & 751 & 4 & 6 & 1313 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 24 & 214 & 1 & 2 & 374 & 26 & 16 & 1 & 34 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 98 & 855 & 5 & 7 & 1495 & 103 & 65 & 5 & 137 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 29 & 0 & 11 & 29 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 34 & 34 & 1 & 29 & 29 & 5 & 7 & 7 & 0 & 3 & 3 \\
\hline g / C, Green / Cycle & 0.10 & 0.59 & 0.59 & 0.01 & 0.50 & 0.50 & 0.08 & 0.12 & 0.12 & 0.01 & 0.05 & 0.05 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.27 & 0.00 & 0.00 & 0.47 & 0.07 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 153 & 1869 & 835 & 21 & 1605 & 717 & 126 & 204 & 173 & 10 & 81 & 69 \\
\hline d1, Uniform Delay [s] & 25.45 & 6.86 & 5.04 & 28.59 & 13.59 & 7.79 & 25.86 & 22.64 & 24.97 & 28.94 & 26.54 & 26.60 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.37 & 0.18 & 0.00 & 8.79 & 3.00 & 0.09 & 3.25 & 0.05 & 7.88 & 17.40 & 0.31 & 0.63 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.64 & 0.46 & 0.01 & 0.33 & 0.93 & 0.14 & 0.52 & 0.02 & 0.79 & 0.31 & 0.06 & 0.10 \\
\hline d, Delay for Lane Group [s/veh] & 29.82 & 7.03 & 5.04 & 37.38 & 16.59 & 7.88 & 29.11 & 22.68 & 32.85 & 46.34 & 26.86 & 27.23 \\
\hline Lane Group LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.30 & 1.62 & 0.01 & 0.14 & 6.34 & 0.47 & 0.93 & 0.06 & 2.10 & 0.09 & 0.07 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 32.40 & 40.43 & 0.35 & 3.40 & 158.49 & 11.65 & 23.25 & 1.49 & 52.52 & 2.15 & 1.75 & 2.51 \\
\hline 95th-Percentile Queue Length [veh] & 2.33 & 2.91 & 0.03 & 0.24 & 10.47 & 0.84 & 1.67 & 0.11 & 3.78 & 0.16 & 0.13 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 58.32 & 72.77 & 0.64 & 6.12 & 261.72 & 20.97 & 41.84 & 2.69 & 94.53 & 3.88 & 3.15 & 4.52 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 29.82 & 7.03 & 5.04 & 37.38 & 16.59 & 7.88 & 29.11 & 22.68 & 32.85 & 46.34 & 26.86 & 27.23 \\
\hline Movement LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.35} & \multicolumn{3}{|c|}{16.12} & \multicolumn{3}{|c|}{31.43} & \multicolumn{3}{|c|}{30.92} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.01} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.865} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
180.4

F
1.463

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 45 & 0 & 24 & 39 & 12 & 15 & 0 & 0 & 0 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 359 & 699 & 95 & 45 & 1314 & 99 & 81 & 118 & 535 & 209 & 233 & 47 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 100 & 194 & 26 & 12 & 365 & 27 & 22 & 33 & 148 & 58 & 65 & 13 \\
\hline Total Analysis Volume [veh/h] & 398 & 776 & 105 & 50 & 1458 & 110 & 90 & 131 & 594 & 232 & 259 & 52 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 27 & 0 & 39 & 41 & 0 & 34 & 38 & 38 & 16 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 52 & 52 & 6 & 37 & 37 & 8 & 34 & 34 & 12 & 38 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.05 & 0.31 & 0.31 & 0.07 & 0.28 & 0.28 & 0.10 & 0.31 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.25 & 0.27 & 0.27 & 0.03 & 0.46 & 0.08 & 0.06 & 0.08 & 0.42 & 0.15 & 0.19 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1608 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1628 \\
\hline c, Capacity [veh/h] & 279 & 733 & 703 & 76 & 987 & 441 & 112 & 473 & 402 & 160 & 509 \\
\hline d1, Uniform Delay [s] & 49.50 & 25.97 & 26.01 & 56.21 & 41.44 & 31.01 & 55.01 & 33.53 & 43.07 & 54.00 & 35.07 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.17 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 210.55 & 3.80 & 4.00 & 9.45 & 219.92 & 1.35 & 12.67 & 0.31 & 227.62 & 235.00 & 1.87 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.42 & 0.61 & 0.62 & 0.66 & 1.48 & 0.25 & 0.81 & 0.28 & 1.48 & 1.45 & 0.61 \\
\hline d, Delay for Lane Group [s/veh] & 260.05 & 29.77 & 30.01 & 65.66 & 261.36 & 32.37 & 67.68 & 33.84 & 270.69 & 289.00 & 36.93 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 24.30 & 9.82 & 9.51 & 1.63 & 43.76 & 2.43 & 3.07 & 3.03 & 37.21 & 15.24 & 7.96 \\
\hline 50th-Percentile Queue Length [ft] & 607.40 & 245.56 & 237.65 & 40.75 & 1093.95 & 60.81 & 76.87 & 75.72 & 930.34 & 380.96 & 198.99 \\
\hline 95th-Percentile Queue Length [veh] & 37.66 & 14.96 & 14.56 & 2.93 & 66.93 & 4.38 & 5.53 & 5.45 & 57.40 & 24.51 & 12.59 \\
\hline 95th-Percentile Queue Length [ft] & 941.55 & 374.06 & 364.06 & 73.35 & 1673.33 & 109.46 & 138.37 & 136.30 & 1435.11 & 612.71 & 314.67 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 260.05 & 29.88 & 30.01 & 65.66 & 261.36 & 32.37 & 67.68 & 33.84 & 270.69 & 289.00 & 36.93 & 36.93 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{101.51} & \multicolumn{3}{|c|}{239.74} & \multicolumn{3}{|c|}{210.20} & \multicolumn{3}{|c|}{144.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{180.40} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.463} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03
Intersection Level Of Service Report Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 24.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.943
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 15 & 0 & 27 & 12 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 895 & 216 & 338 & 1708 & 374 & 273 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 241 & 58 & 91 & 459 & 101 & 73 \\
\hline Total Analysis Volume [veh/h] & 962 & 232 & 363 & 1837 & 402 & 294 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 28 & 47 & 23 & 23 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 24 & 24 & 18 & 46 & 16 & 16 \\
\hline g / C, Green / Cycle & 0.34 & 0.34 & 0.26 & 0.65 & 0.23 & 0.23 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.30 & 0.16 & 0.23 & 0.58 & 0.13 & 0.21 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1086 & 485 & 409 & 2086 & 721 & 331 \\
\hline d1, Uniform Delay [s] & 21.85 & 18.23 & 25.11 & 9.92 & 23.73 & 26.02 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.20 & 0.50 & 0.11 & 0.26 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 10.65 & 3.36 & 11.21 & 5.76 & 0.68 & 16.53 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.89 & 0.48 & 0.89 & 0.88 & 0.56 & 0.89 \\
\hline d, Delay for Lane Group [s/veh] & 32.49 & 21.59 & 36.32 & 15.68 & 24.41 & 42.55 \\
\hline Lane Group LOS & C & C & D & B & B & D \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 7.66 & 2.89 & 6.19 & 7.54 & 2.85 & 5.99 \\
\hline 50th-Percentile Queue Length [ft] & 191.61 & 72.27 & 154.77 & 188.57 & 71.35 & 149.75 \\
\hline 95th-Percentile Queue Length [veh] & 12.20 & 5.20 & 10.27 & 12.05 & 5.14 & 10.00 \\
\hline 95th-Percentile Queue Length [ft] & 305.12 & 130.08 & 256.79 & 301.17 & 128.43 & 250.09 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 32.49 & 21.59 & 36.32 & 15.68 & 24.41 & 42.55 \\
\hline Movement LOS & C & C & D & B & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{30.38} & \multicolumn{2}{|c|}{19.09} & \multicolumn{2}{|c|}{32.07} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{C} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{24.59} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.943} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec /veh): & 23.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.292
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 196 & 47 & 0 & 240 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 79 & 200 & 50 & 88 & 243 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 27 & 68 & 17 & 30 & 83 \\
\hline Total Analysis Volume [veh/h] & 84 & 108 & 272 & 68 & 120 & 331 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.29 & 0.15 & 0.00 & 0.00 & 0.10 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 23.82 & 16.20 & 0.00 & 0.00 & 8.28 & 0.00 \\
\hline Movement LOS & C & C & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 2.19 & 2.19 & 0.00 & 0.00 & 0.33 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 54.84 & 54.84 & 0.00 & 0.00 & 8.17 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{19.53} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.20} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.83} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.1 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.012
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 24 & 0 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 9 & 73 & 0 & 7 & 32 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 3 & 25 & 0 & 2 & 11 \\
\hline Total Analysis Volume [veh/h] & 0 & 12 & 99 & 0 & 9 & 43 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.06 & 0.00 & 0.01 & 0.04 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.39 & 0.00 & 10.09 & 8.54 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.20 & 0.00 & 0.16 & 0.16 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 4.92 & 0.00 & 4.12 & 4.12 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.39} & \multicolumn{2}{|c|}{8.81} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.30} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & & B
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 54 & 44 & 12 & 15 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 77 & 168 & 191 & 108 & 128 & 94 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 29 & 63 & 71 & 40 & 48 & 35 \\
\hline Total Analysis Volume [veh/h] & 115 & 250 & 285 & 161 & 191 & 140 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.90 & 0.91 & 0.91 & 2.01 & 1.78 & 1.82 & 0.93 \\
\hline 95th-Percentile Queue Length [ft] & 22.45 & 22.81 & 22.81 & 50.18 & 44.43 & 45.43 & 23.13 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.80} & \multicolumn{2}{|c|}{13.28} & \multicolumn{2}{|c|}{12.97} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{12.72} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 15.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 0 & 0 & 19 & 10 & 12 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 114 & 190 & 0 & 1 & 263 & 73 & 56 & 3 & 111 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 34 & 57 & 0 & 0 & 79 & 22 & 17 & 1 & 33 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 137 & 228 & 0 & 1 & 316 & 88 & 67 & 4 & 133 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 3.79 & 4.34 & 0.46 & 0.02 & 0.84 & 0.09 \\
\hline 95th-Percentile Queue Length [ft] & 94.80 & 108.53 & 11.49 & 0.56 & 20.92 & 2.36 \\
\hline Approach Delay [s/veh] & 16.60 & 17.24 & \multicolumn{2}{|c|}{10.55} & 10.57 \\
\hline Approach LOS & C & C & \multicolumn{3}{|c|}{15.52} \\
\hline Intersection Delay [s/veh] & C \\
\hline Intersection LOS & &
\end{tabular}

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.939 & 7.4 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.659 & 14.7 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.699 & 16.9 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.796 & 13.8 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.308 & 165.2 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.199 & 87.0 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 10.3 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.004 & 9.4 & A \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.2 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 17.3 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
7.4

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
A
0.939

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 3 & 0 & 4 & 0 & 0 & 0 & 0 & 2 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1146 & 6 & 2 & 817 & 1 & 2 & 2 & 1 & 5 & 0 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 320 & 2 & 1 & 228 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1279 & 7 & 2 & 912 & 1 & 2 & 2 & 1 & 6 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 88 & 0 & 11 & 88 & 0 & 0 & 21 & 0 & 0 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.88 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.77 & 0.00 & 0.29 & 0.00 & 0.05 & 0.00 & 0.08 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 84 & 1425 & 79 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1479 & 7 & 2808 & 1253 & 46 & 18 & 61 & 18 \\
\hline d1, Uniform Delay [s] & 59.13 & 3.53 & 59.55 & 1.22 & 0.87 & 59.97 & 58.52 & 59.97 & 58.52 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 7.22 & 22.54 & 0.31 & 0.00 & 0.80 & 1.28 & 0.69 & 1.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.87 & 0.30 & 0.32 & 0.00 & 0.09 & 0.06 & 0.10 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 10.74 & 82.09 & 1.52 & 0.87 & 60.77 & 59.80 & 60.67 & 59.80 \\
\hline Lane Group LOS & E & B & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 2.96 & 0.10 & 0.12 & 0.00 & 0.13 & 0.04 & 0.20 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 74.12 & 2.50 & 3.00 & 0.01 & 3.31 & 0.91 & 4.88 & 0.91 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 5.34 & 0.18 & 0.22 & 0.00 & 0.24 & 0.07 & 0.35 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 133.42 & 4.49 & 5.41 & 0.02 & 5.95 & 1.64 & 8.78 & 1.64 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 10.74 & 10.74 & 82.09 & 1.52 & 0.87 & 60.77 & 60.77 & 59.80 & 60.67 & 60.67 & 59.80 \\
\hline Movement LOS & E & B & B & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.90} & \multicolumn{3}{|c|}{1.70} & \multicolumn{3}{|c|}{60.58} & \multicolumn{3}{|c|}{60.54} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{7.37} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.939} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
14.7
Level Of Service:
Volume to Capacity (v/c):
B
0.659

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 24 & 0 & 0 & 0 & 0 & 6 & 9 & 6 & 30 & 0 & 4 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 39 & 1116 & 134 & 34 & 778 & 21 & 23 & 11 & 47 & 90 & 11 & 24 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 11 & 308 & 37 & 9 & 215 & 6 & 6 & 3 & 13 & 25 & 3 & 7 \\
\hline Total Analysis Volume [veh/h] & 43 & 1233 & 148 & 38 & 860 & 23 & 25 & 12 & 52 & 99 & 12 & 27 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 18 & 19 & 0 & 21 & 22 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 39 & 39 & 4 & 39 & 39 & 3 & 5 & 5 & 6 & 8 & 8 \\
\hline g / C, Green / Cycle & 0.06 & 0.56 & 0.56 & 0.05 & 0.56 & 0.56 & 0.04 & 0.07 & 0.07 & 0.09 & 0.12 & 0.12 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.03 & 0.39 & 0.10 & 0.02 & 0.27 & 0.02 & 0.02 & 0.01 & 0.04 & 0.06 & 0.01 & 0.02 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 94 & 1780 & 795 & 87 & 1766 & 788 & 65 & 122 & 104 & 139 & 200 & 170 \\
\hline d1, Uniform Delay [s] & 31.98 & 11.20 & 7.67 & 32.18 & 9.59 & 7.12 & 32.85 & 30.40 & 31.33 & 31.21 & 27.43 & 27.76 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.45 & 2.24 & 0.52 & 3.44 & 0.96 & 0.07 & 3.71 & 0.35 & 3.68 & 6.56 & 0.12 & 0.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.46 & 0.69 & 0.19 & 0.44 & 0.49 & 0.03 & 0.39 & 0.10 & 0.50 & 0.71 & 0.06 & 0.16 \\
\hline d, Delay for Lane Group [s/veh] & 35.44 & 13.44 & 8.19 & 35.62 & 10.56 & 7.19 & 36.56 & 30.75 & 35.01 & 37.77 & 27.55 & 28.19 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.70 & 4.67 & 0.79 & 0.63 & 2.70 & 0.11 & 0.47 & 0.20 & 0.93 & 1.76 & 0.17 & 0.39 \\
\hline 50th-Percentile Queue Length [ft] & 17.58 & 116.68 & 19.76 & 15.66 & 67.42 & 2.82 & 11.72 & 4.88 & 23.15 & 43.89 & 4.28 & 9.86 \\
\hline 95th-Percentile Queue Length [veh] & 1.27 & 8.21 & 1.42 & 1.13 & 4.85 & 0.20 & 0.84 & 0.35 & 1.67 & 3.16 & 0.31 & 0.71 \\
\hline 95th-Percentile Queue Length [ft] & 31.65 & 205.25 & 35.57 & 28.19 & 121.35 & 5.07 & 21.09 & 8.79 & 41.67 & 79.01 & 7.71 & 17.76 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.44 & 13.44 & 8.19 & 35.62 & 10.56 & 7.19 & 36.56 & 30.75 & 35.01 & 37.77 & 27.55 & 28.19 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.56} & \multicolumn{3}{|c|}{11.51} & \multicolumn{3}{|c|}{34.87} & \multicolumn{3}{|c|}{35.00} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.659} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
16.9

B
0.699

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{77浐} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{7 | \({ }^{\text {F }}\)} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 14 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 12 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1219 & 171 & 97 & 913 & 8 & 6 & 14 & 24 & 117 & 26 & 70 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 339 & 48 & 27 & 254 & 2 & 2 & 4 & 7 & 33 & 7 & 19 \\
\hline Total Analysis Volume [veh/h] & 26 & 1354 & 190 & 108 & 1014 & 9 & 7 & 16 & 27 & 130 & 29 & 78 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 80 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 11 & 11 & 0 & 20 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 45 & 45 & 6 & 48 & 48 & 1 & 4 & 4 & 8 & 11 & 11 \\
\hline g / C, Green / Cycle & 0.04 & 0.56 & 0.56 & 0.08 & 0.60 & 0.60 & 0.01 & 0.05 & 0.05 & 0.10 & 0.14 & 0.14 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.42 & 0.13 & 0.03 & 0.32 & 0.01 & 0.00 & 0.01 & 0.02 & 0.08 & 0.02 & 0.05 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 64 & 1794 & 801 & 251 & 1924 & 859 & 23 & 93 & 79 & 163 & 240 & 204 \\
\hline d1, Uniform Delay [s] & 37.57 & 13.35 & 8.87 & 35.11 & 9.27 & 6.37 & 39.15 & 36.14 & 36.49 & 35.19 & 29.95 & 31.14 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.08 & 3.00 & 0.70 & 1.17 & 1.04 & 0.02 & 7.48 & 0.87 & 2.56 & 8.49 & 0.22 & 1.17 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.41 & 0.75 & 0.24 & 0.43 & 0.53 & 0.01 & 0.31 & 0.17 & 0.34 & 0.80 & 0.12 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 41.65 & 16.36 & 9.57 & 36.28 & 10.31 & 6.39 & 46.63 & 37.02 & 39.05 & 43.67 & 30.17 & 32.31 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.53 & 7.43 & 1.40 & 0.96 & 3.82 & 0.05 & 0.18 & 0.32 & 0.56 & 2.81 & 0.49 & 1.40 \\
\hline 50th-Percentile Queue Length [ft] & 13.29 & 185.72 & 35.02 & 24.02 & 95.57 & 1.21 & 4.57 & 7.99 & 14.04 & 70.17 & 12.32 & 35.07 \\
\hline 95th-Percentile Queue Length [veh] & 0.96 & 11.90 & 2.52 & 1.73 & 6.88 & 0.09 & 0.33 & 0.57 & 1.01 & 5.05 & 0.89 & 2.52 \\
\hline 95th-Percentile Queue Length [ft] & 23.91 & 297.47 & 63.04 & 43.24 & 172.02 & 2.18 & 8.22 & 14.37 & 25.28 & 126.30 & 22.17 & 63.12 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 41.65 & 16.36 & 9.57 & 36.28 & 10.31 & 6.39 & 46.63 & 37.02 & 39.05 & 43.67 & 30.17 & 32.31 \\
\hline Movement LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.95} & \multicolumn{3}{|c|}{12.76} & \multicolumn{3}{|c|}{39.46} & \multicolumn{3}{|c|}{38.28} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{16.91} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.699} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
13.8

B
0.796

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 0 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & , & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 148 & 1293 & 5 & 2 & 877 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 368 & 1 & 1 & 250 & 13 & 25 & 0 & 23 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 169 & 1473 & 6 & 2 & 999 & 51 & 100 & 1 & 93 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 19 & 29 & 0 & 11 & 21 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 7 & 26 & 26 & 0 & 20 & 20 & 5 & 6 & 6 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.14 & 0.54 & 0.54 & 0.00 & 0.40 & 0.40 & 0.11 & 0.12 & 0.12 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.46 & 0.00 & 0.00 & 0.31 & 0.04 & 0.06 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 219 & 1709 & 763 & 6 & 1285 & 574 & 172 & 201 & 171 & 18 & 40 & 34 \\
\hline d1, Uniform Delay [s] & 20.26 & 9.74 & 5.27 & 24.15 & 12.64 & 9.00 & 20.66 & 18.85 & 20.15 & 23.85 & 23.21 & 23.36 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.72 & 1.39 & 0.00 & 24.75 & 1.05 & 0.07 & 3.09 & 0.01 & 2.68 & 9.81 & 0.52 & 5.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.77 & 0.86 & 0.01 & 0.31 & 0.78 & 0.09 & 0.58 & 0.00 & 0.54 & 0.32 & 0.05 & 0.32 \\
\hline d, Delay for Lane Group [s/veh] & 25.97 & 11.13 & 5.27 & 48.90 & 13.68 & 9.07 & 23.75 & 18.86 & 22.84 & 33.66 & 23.72 & 28.79 \\
\hline Lane Group LOS & C & B & A & D & B & A & C & B & C & C & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 1.79 & 3.40 & 0.01 & 0.06 & 3.11 & 0.22 & 1.12 & 0.01 & 1.02 & 0.11 & 0.03 & 0.16 \\
\hline 50th-Percentile Queue Length [ft] & 44.66 & 84.90 & 0.36 & 1.59 & 77.83 & 5.59 & 28.06 & 0.24 & 25.51 & 2.83 & 0.66 & 4.12 \\
\hline 95th-Percentile Queue Length [veh] & 3.22 & 6.11 & 0.03 & 0.11 & 5.60 & 0.40 & 2.02 & 0.02 & 1.84 & 0.20 & 0.05 & 0.30 \\
\hline 95th-Percentile Queue Length [ft] & 80.39 & 152.81 & 0.65 & 2.85 & 140.10 & 10.06 & 50.51 & 0.43 & 45.92 & 5.09 & 1.18 & 7.42 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 25.97 & 11.13 & 5.27 & 48.90 & 13.68 & 9.07 & 23.75 & 18.86 & 22.84 & 33.66 & 23.72 & 28.79 \\
\hline Movement LOS & C & B & A & D & B & A & C & B & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.63} & \multicolumn{3}{|c|}{13.53} & \multicolumn{3}{|c|}{23.28} & \multicolumn{3}{|c|}{29.80} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{13.78} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.796} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
165.2

F
1.308

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \mid
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 0 & 6 & 7 & 3 & 2 & 0 & 0 & 0 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 437 & 1354 & 200 & 34 & 839 & 64 & 76 & 174 & 540 & 169 & 133 & 24 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 121 & 376 & 55 & 9 & 233 & 18 & 21 & 48 & 150 & 47 & 37 & 7 \\
\hline Total Analysis Volume [veh/h] & 485 & 1503 & 222 & 38 & 931 & 71 & 84 & 193 & 599 & 188 & 148 & 27 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 50 & 50 & 5 & 27 & 27 & 8 & 38 & 38 & 11 & 41 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.07 & 0.32 & 0.32 & 0.09 & 0.34 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.51 & 0.54 & 0.02 & 0.29 & 0.05 & 0.05 & 0.12 & 0.42 & 0.12 & 0.11 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1604 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1632 \\
\hline c, Capacity [veh/h] & 373 & 700 & 669 & 67 & 721 & 322 & 105 & 529 & 450 & 146 & 558 \\
\hline d1, Uniform Delay [s] & 46.00 & 34.96 & 34.96 & 56.42 & 46.45 & 37.84 & 55.29 & 31.75 & 41.06 & 54.50 & 29.12 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 154.19 & 116.95 & 141.00 & 7.35 & 141.21 & 1.57 & 13.03 & 0.42 & 163.76 & 169.78 & 0.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.30 & 1.23 & 1.29 & 0.57 & 1.29 & 0.22 & 0.80 & 0.36 & 1.33 & 1.28 & 0.31 \\
\hline d, Delay for Lane Group [s/veh] & 200.19 & 151.91 & 175.96 & 63.77 & 187.65 & 39.41 & 68.31 & 32.17 & 204.82 & 224.28 & 29.44 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 26.42 & 41.24 & 43.92 & 1.22 & 24.30 & 1.77 & 2.89 & 4.40 & 33.56 & 11.32 & 3.78 \\
\hline 50th-Percentile Queue Length [ft] & 660.52 & 1030.99 & 1098.00 & 30.58 & 607.42 & 44.24 & 72.13 & 110.11 & 838.91 & 282.96 & 94.55 \\
\hline 95th-Percentile Queue Length [veh] & 39.86 & 59.54 & 64.54 & 2.20 & 36.81 & 3.19 & 5.19 & 7.85 & 50.57 & 18.34 & 6.81 \\
\hline 95th-Percentile Queue Length [ft] & 996.39 & 1488.53 & 1613.55 & 55.05 & 920.27 & 79.63 & 129.83 & 196.16 & 1264.25 & 458.58 & 170.20 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 200.19 & 162.16 & 175.96 & 63.77 & 187.65 & 39.41 & 68.31 & 32.17 & 204.82 & 224.28 & 29.44 & 29.44 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{171.89} & \multicolumn{3}{|c|}{173.01} & \multicolumn{3}{|c|}{153.69} & \multicolumn{3}{|c|}{130.35} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{165.24} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.308} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Generated with PTV VISTRO}

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 87.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.199
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 0 & 4 & 3 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1548 & 392 & 318 & 1219 & 304 & 455 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 416 & 105 & 85 & 328 & 82 & 122 \\
\hline Total Analysis Volume [veh/h] & 1665 & 422 & 342 & 1311 & 327 & 489 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & 0 \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline g / C, Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.52 & 0.30 & 0.21 & 0.41 & 0.11 & 0.34 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.40 & 48.95 & 12.47 & 34.43 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 99.37 & 6.06 & 105.29 & 1.48 & 0.26 & 115.90 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.21 & 0.68 & 1.17 & 0.63 & 0.37 & 1.21 \\
\hline d, Delay for Lane Group [s/veh] & 133.37 & 33.46 & 154.24 & 13.95 & 34.69 & 158.88 \\
\hline Lane Group LOS & F & C & F & B & C & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 37.18 & 9.95 & 16.91 & 8.93 & 3.87 & 24.83 \\
\hline 50th-Percentile Queue Length [ft] & 929.59 & 248.85 & 422.75 & 223.20 & 96.74 & 620.80 \\
\hline 95th-Percentile Queue Length [veh] & 53.60 & 15.13 & 25.50 & 13.83 & 6.97 & 36.81 \\
\hline 95th-Percentile Queue Length [ft] & 1339.89 & 378.21 & 637.47 & 345.71 & 174.14 & 920.35 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 133.37 & 33.46 & 154.24 & 13.95 & 34.69 & 158.88 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{113.17} & \multicolumn{2}{|c|}{42.97} & \multicolumn{2}{|c|}{109.11} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{86.98} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.199} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.018
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 45 & 13 & 0 & 34 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 82 & 49 & 14 & 27 & 39 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 28 & 17 & 5 & 9 & 13 \\
\hline Total Analysis Volume [veh/h] & 14 & 112 & 67 & 19 & 37 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.11 & 0.00 & 0.00 & 0.02 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.27 & 9.23 & 0.00 & 0.00 & 7.44 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.45 & 0.45 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 11.36 & 11.36 & 0.00 & 0.00 & 1.88 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{9.35} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.06} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.81} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 9.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & A \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.004
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 1 & 4 & 0 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 1 & 41 & 0 & 2 & 38 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 0 & 14 & 0 & 1 & 13 \\
\hline Total Analysis Volume [veh/h] & 0 & 1 & 55 & 0 & 3 & 51 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.03 & 0.00 & 0.00 & 0.05 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.30 & 0.00 & 9.38 & 8.50 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.11 & 0.00 & 0.16 & 0.16 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.63 & 0.00 & 3.99 & 3.99 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.30} & \multicolumn{2}{|c|}{8.55} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.85} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 10 & 3 & 2 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 56 & 191 & 138 & 86 & 104 & 82 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 71 & 51 & 32 & 39 & 31 \\
\hline Total Analysis Volume [veh/h] & 83 & 285 & 206 & 128 & 155 & 122 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.55 & 0.98 & 0.98 & 1.23 & 1.09 & 1.25 & 0.72 \\
\hline 95th-Percentile Queue Length [ft] & 13.81 & 24.46 & 24.46 & 30.71 & 27.27 & 31.19 & 18.03 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.01} & \multicolumn{2}{|c|}{11.20} & \multicolumn{2}{|c|}{11.40} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.18} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 17.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 4 & 0 & 0 & 5 & 2 & 2 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 134 & 250 & 7 & 3 & 182 & 58 & 79 & 4 & 97 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 40 & 75 & 2 & 1 & 55 & 17 & 24 & 1 & 29 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 161 & 300 & 8 & 4 & 219 & 70 & 95 & 5 & 117 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 6.44 & 2.45 & 0.69 & 0.03 & 0.71 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 160.96 & 61.18 & 17.29 & 0.70 & 17.80 & 1.71 \\
\hline Approach Delay [s/veh] & 22.85 & 13.51 & \multicolumn{3}{|c|}{10.71} & 10.49 \\
\hline Approach LOS & C & B & B & C \\
\hline Intersection Delay [s/veh] & C & \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

\section*{Appendix E. Cumulative Projects Trip Generations}

\section*{Cumulative Project Trip Generation}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{5}{|l|}{Included as one of the cumulative projects Not included as one of the cumulative projects} & & & & & & & \\
\hline \multicolumn{6}{|l|}{\multirow[b]{2}{*}{County of Riverside}} & \multicolumn{7}{|c|}{Trip Generation} \\
\hline & & & & & & \multicolumn{4}{|c|}{AM Peak Hour} & \multicolumn{3}{|c|}{PM Peak Hour} \\
\hline Project Name & Project Type & Land Use & ITE Code & Unit Amount & Unit & Daily & In & Out & Total & In & Out & Total \\
\hline \multirow[t]{3}{*}{1. SELF STORAGE FACILITY/RETAIL BUILDING / CAR WASH /} & \multirow[t]{3}{*}{Mixed-Use} & Automated Car Wash & 948 & 4.795 & TSF & N/A & N/A & N/A & N/A & 34 & 34 & 68 \\
\hline & & Mini-Warehouse & 151 & 970 & Storage Unit & 243 & 10 & 10 & 19 & 9 & 10 & 19 \\
\hline & & \multicolumn{4}{|r|}{Total:} & 243 & 10 & 10 & 19 & 43 & 44 & 87 \\
\hline \multirow{9}{*}{2. 160,680 SF MIX OF COMMERCIAL, RESTAURANT, FINANCIA} & \multirow{9}{*}{Mixed-Use} & Pharmacy/Drugstore with Drive-Thru Window & 881 & 13.6 & TSF & 1,318 & 24 & 23 & 47 & 68 & 68 & 135 \\
\hline & & Gasoline/Service Station with Convenience Mart and Car Wash & 946 & 12 & Vehicle Fueling Position & 1,834 & 72 & 70 & 142 & 85 & 81 & 166 \\
\hline & & Day Care Center & 565 & 5 & TSF & 370 & 32 & 29 & 61 & 29 & 33 & 62 \\
\hline & & \begin{tabular}{l}
High-Turnover (Sit- \\
Down) Restaurant
\end{tabular} & 932 & 11.5 & TSF & 1,462 & 68 & 56 & 124 & 68 & 45 & 113 \\
\hline & & Fast-Food Restaurant with Drive-Thru Window & 934 & 3 & TSF & 1,488 & 69 & 67 & 136 & 51 & 47 & 98 \\
\hline & & Drive-In Bank & 912 & 5 & TSF & 741 & 34 & 26 & 60 & 61 & 61 & 122 \\
\hline & & Specialty Retail Center & 826 & 64.6 & TSF & 2,863 & N/A & N/A & N/A & 77 & 98 & 175 \\
\hline & & Supermarket & 850 & 55 & TSF & 5,623 & 116 & 71 & 187 & 266 & 255 & 521 \\
\hline & & & & & Total: & 15,699 & 415 & 342 & 757 & 705 & 688 & 1,392 \\
\hline \multirow{5}{*}{3. SP COMMERCIAL OFFICE,RETAIL MIXED USE,RESIDENTIAL} & \multirow{5}{*}{Mixed-Use} & Specialty Retail Center & 826 & 400 & TSF & 17,728 & N/A & N/A & N/A & 477 & 607 & 1,084 \\
\hline & & General Office Building & 710 & 250 & TSF & 2,758 & 343 & 47 & 390 & 63 & 310 & 373 \\
\hline & & Single-Family Detached Housing & 210 & 98 & Dwelling Unit & 933 & 19 & 56 & 74 & 62 & 36 & 98 \\
\hline & & \begin{tabular}{l}
Continuing Care \\
Retirement Community
\end{tabular} & 255 & 225 & Unit & 540 & 21 & 11 & 32 & 14 & 22 & 36 \\
\hline & & & & & Total: & 21,959 & 383 & 114 & 496 & 616 & 975 & 1,591 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{County of Riverside} & & & & & & \multicolumn{7}{|c|}{Trip Generation} \\
\hline & & & & & & & \multicolumn{3}{|c|}{AM Peak Hour} & \multicolumn{3}{|c|}{PM Peak Hour} \\
\hline Project Name & Project Type & Land Use & ITE Code & Unit Amount & Unit & Daily & In & Out & Total & In & Out & Total \\
\hline & & & & & & \multicolumn{7}{|c|}{Trip Generation} \\
\hline \multicolumn{6}{|l|}{City of Murrieta} & & \multicolumn{3}{|c|}{AM Peak Hour} & \multicolumn{3}{|c|}{PM Peak Hour} \\
\hline Project Name & \multicolumn{5}{|c|}{Description \& TG Source} & Daily & In & Out & Total & In & Out & Total \\
\hline Adobe Springs & \multicolumn{3}{|l|}{287 SF DU by 2018. Trames Solutions Inc., 2015.} & & & 2,732 & 55 & 161 & 216 & 181 & 106 & 287 \\
\hline CVS & \multicolumn{5}{|l|}{14,576 SF CVS Pharmacy with Drive-Thru. TJW Engineering, Inc., 2013.} & 721 & 13 & 13 & 26 & 37 & 37 & 74 \\
\hline Golden Cities Tract 28532-1 & 82 SF DU. Urban & roads, 2005. & & & & 785 & 16 & 46 & 62 & 52 & 30 & 82 \\
\hline Golden Cities Tract 28532-2 & 90 SF DU. Urban & roads, 2005. & & & & 861 & 17 & 50 & 67 & 58 & 33 & 91 \\
\hline Golden Cities Tract 28532-3 & 69 SF DU. Urban & roads, 2006. & & & & 660 & 13 & 39 & 52 & 44 & 26 & 70 \\
\hline Golden Cities Tract 28532-4 & 126 SF DU. Urban & ssroads, 2006. & & & & 1,206 & 24 & 71 & 95 & 81 & 47 & 128 \\
\hline Golden Cities Tract 28532-5 & 119 SF DU. Urban & ssroads, 2006. & & & & 1,139 & 23 & 67 & 90 & 76 & 44 & 120 \\
\hline Kaiser & \multicolumn{4}{|l|}{824,000 SF Medical-Dental Office Building. LLG, 2015.} & & 16,293 & 921 & 274 & 1,195 & 1,195 & 479 & 1,646 \\
\hline Mitchell Crossing & \multicolumn{5}{|l|}{331 MF DU \& 50,000 SF Speciality Retail. Kunzman Associates, Inc., 2015.} & 4,417 & 73 & 163 & 236 & 192 & 149 & 341 \\
\hline Murrieta Hills & \multicolumn{5}{|l|}{532 SF DU \& 218 MF DU \& 599,060 SF Shopping Center. RBF Consulting.} & 24,562 & 381 & 538 & 919 & 1,162 & 1,050 & 2,212 \\
\hline Pacific Landing & \multicolumn{3}{|l|}{400 Apartment DU. Urban Crossroads, 2008.} & & & 2,688 & 40 & 164 & 204 & 160 & 88 & 248 \\
\hline Physicians Hospital & \multicolumn{5}{|l|}{490,000 SF Hospital \& 160,000 SF Medical Office Building. RK Engineering Group, Inc., 2008.} & 14,390 & 706 & 279 & 985 & 351 & 822 & 1,173 \\
\hline Sierra Lane Commercial Center & \multicolumn{5}{|l|}{118,435 SF Specialty Retail \& 5,200 SF Tire Store \& 5,074 SF Fast-Food Restaurant w/ DT Kunzman Associates, Inc., 2009.} & 3,463 & 152 & 139 & 291 & 120 & 122 & 242 \\
\hline The Orchard & \multicolumn{4}{|l|}{436,735 SF Commerical Use. Katz, Okitsu \& Associates, 2004.} & & 14,996 & 360 & 230 & 130 & 1,308 & 623 & 685 \\
\hline Vineyard Shopping Center & \multicolumn{5}{|l|}{78,489 SF Shopping Center \& 91 Room Hotel. Trames Solutions Inc., 2013.} & 6,254 & 111 & 70 & 181 & 258 & 273 & 531 \\
\hline & \multicolumn{5}{|r|}{Total Trip Generation of the projects that will be included in the TIA:} & 40,633 & 863 & 627 & 1,488 & 1,545 & 1,813 & 3,357 \\
\hline
\end{tabular}

Version 5.00-00
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 5.00-00
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Version 5.00-00
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 5.00-00
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


\section*{Appendix F. Intersection Volumes, Delay, and LOS Calculation Outputs, Existing Plus Ambient Plus Project Conditions}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:I...|tvcs1.vistro
Report File: Q:I...IE+A+P AM_new.pdf

Scenario 5: E+A+P AM
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & WB Left & 5,955.517 & 4.3 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.857 & 38.0 & D \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.752 & 18.7 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & NB Left & 0.792 & 17.2 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.521 & 196.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.937 & 27.6 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.298 & 24.3 & C \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.256 & 24.0 & C \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 13.1 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 16.5 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
4.3
5,955.517

HCM 2010
15 minutes

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 12 & 0 & 30 & 0 & 0 & 0 & 0 & 15 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 728 & 15 & 0 & 1130 & 3 & 1 & 1 & 4 & 23 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 203 & 4 & 0 & 315 & 1 & 0 & 0 & 1 & 6 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 813 & 17 & 0 & 1261 & 3 & 1 & 1 & 4 & 26 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 90 & 0 & 11 & 90 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 104 & 0 & 103 & 103 & 4 & 4 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.00 & 0.86 & 0.00 & 0.86 & 0.86 & 0.04 & 0.04 & 0.04 & 0.04 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.50 & 0.00 & 0.40 & 0.00 & 0.00 & 0.00 & 5359.47 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1670 & 1597 & 3192 & 1425 & 591 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1441 & 0 & 2748 & 1227 & 67 & 53 & 60 & 53 \\
\hline d1, Uniform Delay [s] & 59.79 & 2.25 & 0.00 & 1.92 & 1.16 & 55.71 & 55.77 & 60.00 & 55.73 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.68 & 0.00 & 0.55 & 0.00 & 0.18 & 0.60 & 21.18 & 0.44 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.58 & 0.00 & 0.46 & 0.00 & 0.03 & 0.08 & 0.43 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 3.93 & 0.00 & 2.48 & 1.17 & 55.89 & 56.36 & 81.18 & 56.17 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & F & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.80 & 0.00 & 0.36 & 0.00 & 0.06 & 0.13 & 1.16 & 0.09 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 20.10 & 0.00 & 9.02 & 0.04 & 1.55 & 3.15 & 29.04 & 2.36 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 1.45 & 0.00 & 0.65 & 0.00 & 0.11 & 0.23 & 2.09 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 36.18 & 0.00 & 16.23 & 0.07 & 2.78 & 5.67 & 52.28 & 4.24 \\
\hline
\end{tabular}

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 3.93 & 3.93 & 0.00 & 2.48 & 1.17 & 55.89 & 55.89 & 56.36 & 81.18 & 81.18 & 56.17 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & F & F & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{4.01} & \multicolumn{3}{|c|}{2.47} & \multicolumn{3}{|c|}{56.21} & \multicolumn{3}{|c|}{78.59} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{4.26} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{5955.517} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
38.0
Level Of Service:
Volume to Capacity (v/c):
0.857

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 165 & 0 & 0 & 0 & 0 & 45 & 36 & 24 & 136 & 0 & 30 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 190 & 625 & 168 & 72 & 995 & 102 & 76 & 39 & 168 & 183 & 42 & 60 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 52 & 173 & 46 & 20 & 275 & 28 & 21 & 11 & 46 & 51 & 12 & 17 \\
\hline Total Analysis Volume [veh/h] & 210 & 691 & 186 & 80 & 1099 & 113 & 84 & 43 & 186 & 202 & 46 & 66 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 110 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 22 & 30 & 0 & 37 & 45 & 0 & 22 & 23 & 0 & 20 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 16 & 55 & 55 & 7 & 46 & 46 & 7 & 16 & 16 & 16 & 25 & 25 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.15 & 0.50 & 0.50 & 0.06 & 0.42 & 0.42 & 0.07 & 0.15 & 0.15 & 0.14 & 0.22 & 0.22 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.13 & 0.22 & 0.13 & 0.05 & 0.34 & 0.08 & 0.05 & 0.03 & 0.13 & 0.13 & 0.03 & 0.05 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 238 & 1593 & 711 & 103 & 1323 & 591 & 107 & 248 & 210 & 229 & 376 & 319 \\
\hline d1, Uniform Delay [s] & 45.95 & 17.65 & 15.90 & 50.76 & 28.80 & 20.51 & 50.62 & 41.08 & 46.03 & 46.28 & 34.11 & 34.79 \\
\hline k, delay calibration & 0.28 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.25 & 0.32 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 22.65 & 0.86 & 0.89 & 11.72 & 6.16 & 0.72 & 11.74 & 0.33 & 22.80 & 25.58 & 0.14 & 0.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.88 & 0.43 & 0.26 & 0.78 & 0.83 & 0.19 & 0.78 & 0.17 & 0.88 & 0.88 & 0.12 & 0.21 \\
\hline d, Delay for Lane Group [s/veh] & 68.60 & 18.51 & 16.80 & 62.49 & 34.96 & 21.23 & 62.35 & 41.41 & 68.83 & 71.86 & 34.25 & 35.10 \\
\hline Lane Group LOS & E & B & B & E & C & C & E & D & E & E & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 6.71 & 4.96 & 2.49 & 2.37 & 12.36 & 1.76 & 2.63 & 1.05 & 6.29 & 6.87 & 0.97 & 1.42 \\
\hline 50th-Percentile Queue Length [ft] & 167.80 & 123.89 & 62.20 & 59.25 & 308.96 & 44.05 & 65.64 & 26.14 & 157.30 & 171.64 & 24.21 & 35.58 \\
\hline 95th-Percentile Queue Length [veh] & 10.96 & 8.61 & 4.48 & 4.27 & 18.12 & 3.17 & 4.73 & 1.88 & 10.41 & 11.16 & 1.74 & 2.56 \\
\hline 95th-Percentile Queue Length [ft] & 274.02 & 215.16 & 111.97 & 106.66 & 453.09 & 79.29 & 118.15 & 47.06 & 260.14 & 279.07 & 43.58 & 64.04 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 68.60 & 18.51 & 16.80 & 62.49 & 34.96 & 21.23 & 62.35 & 41.41 & 68.83 & 71.86 & 34.25 & 35.10 \\
\hline Movement LOS & E & B & B & E & C & C & E & D & E & E & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{27.89} & \multicolumn{3}{|c|}{35.46} & \multicolumn{3}{|c|}{63.33} & \multicolumn{3}{|c|}{58.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{38.05} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.857} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
18.7

B
0.752

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 61 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 75 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 819 & 77 & 109 & 1239 & 12 & 18 & 10 & 12 & 150 & 21 & 154 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 228 & 21 & 30 & 344 & 3 & 5 & 3 & 3 & 42 & 6 & 43 \\
\hline Total Analysis Volume [veh/h] & 26 & 910 & 86 & 121 & 1377 & 13 & 20 & 11 & 13 & 167 & 23 & 171 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 17 & 0 & 23 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 35 & 35 & 6 & 39 & 39 & 2 & 4 & 4 & 9 & 10 & 10 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.09 & 0.55 & 0.55 & 0.03 & 0.05 & 0.05 & 0.13 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.29 & 0.06 & 0.04 & 0.43 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.12 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 65 & 1591 & 710 & 283 & 1752 & 782 & 53 & 88 & 75 & 207 & 250 & 212 \\
\hline d1, Uniform Delay [s] & 32.80 & 12.34 & 9.39 & 30.13 & 12.55 & 7.20 & 33.18 & 31.70 & 31.78 & 29.65 & 25.75 & 28.86 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.91 & 1.50 & 0.35 & 1.02 & 3.64 & 0.04 & 4.34 & 0.63 & 1.10 & 7.19 & 0.16 & 7.05 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.40 & 0.57 & 0.12 & 0.43 & 0.79 & 0.02 & 0.38 & 0.13 & 0.17 & 0.81 & 0.09 & 0.81 \\
\hline d, Delay for Lane Group [s/veh] & 36.70 & 13.84 & 9.74 & 31.15 & 16.19 & 7.24 & 37.52 & 32.33 & 32.87 & 36.84 & 25.91 & 35.91 \\
\hline Lane Group LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.46 & 3.97 & 0.59 & 0.90 & 6.61 & 0.07 & 0.39 & 0.19 & 0.23 & 3.04 & 0.33 & 3.08 \\
\hline 50th-Percentile Queue Length [ft] & 11.45 & 99.26 & 14.80 & 22.52 & 165.37 & 1.76 & 9.79 & 4.76 & 5.75 & 75.92 & 8.26 & 76.90 \\
\hline 95th-Percentile Queue Length [veh] & 0.82 & 7.15 & 1.07 & 1.62 & 10.83 & 0.13 & 0.70 & 0.34 & 0.41 & 5.47 & 0.59 & 5.54 \\
\hline 95th-Percentile Queue Length [ft] & 20.62 & 178.67 & 26.65 & 40.54 & 270.82 & 3.17 & 17.62 & 8.56 & 10.35 & 136.66 & 14.86 & 138.41 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.70 & 13.84 & 9.74 & 31.15 & 16.19 & 7.24 & 37.52 & 32.33 & 32.87 & 36.84 & 25.91 & 35.91 \\
\hline Movement LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{14.08} & \multicolumn{3}{|c|}{17.31} & \multicolumn{3}{|c|}{34.85} & \multicolumn{3}{|c|}{35.71} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{18.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.752} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
17.2

B
0.792

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 0 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & , & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 89 & 777 & 4 & 6 & 1363 & 94 & 59 & 4 & 125 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 25 & 221 & 1 & 2 & 388 & 27 & 17 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 101 & 885 & 5 & 7 & 1552 & 107 & 67 & 5 & 142 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 90 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 41 & 49 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 7 & 61 & 61 & 1 & 56 & 56 & 6 & 11 & 11 & 1 & 6 & 6 \\
\hline g / C, Green / Cycle & 0.08 & 0.68 & 0.68 & 0.01 & 0.62 & 0.62 & 0.06 & 0.12 & 0.12 & 0.01 & 0.06 & 0.06 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.28 & 0.00 & 0.00 & 0.49 & 0.08 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 126 & 2170 & 969 & 22 & 1963 & 876 & 103 & 204 & 174 & 11 & 108 & 92 \\
\hline d1, Uniform Delay [s] & 40.86 & 6.40 & 4.64 & 44.04 & 13.00 & 7.22 & 41.19 & 34.87 & 38.61 & 44.55 & 39.58 & 39.66 \\
\hline k, delay calibration & 0.21 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 20.41 & 0.57 & 0.01 & 7.91 & 3.34 & 0.29 & 6.76 & 0.05 & 9.02 & 12.46 & 0.17 & 0.35 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.80 & 0.41 & 0.01 & 0.32 & 0.79 & 0.12 & 0.65 & 0.02 & 0.82 & 0.27 & 0.05 & 0.08 \\
\hline d, Delay for Lane Group [s/veh] & 61.28 & 6.97 & 4.65 & 51.95 & 16.35 & 7.51 & 47.95 & 34.92 & 47.63 & 57.01 & 39.76 & 40.01 \\
\hline Lane Group LOS & E & A & A & D & B & A & D & C & D & E & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 2.77 & 2.59 & 0.02 & 0.19 & 9.33 & 0.71 & 1.63 & 0.10 & 3.45 & 0.10 & 0.11 & 0.15 \\
\hline 50th-Percentile Queue Length [ft] & 69.14 & 64.73 & 0.56 & 4.85 & 233.28 & 17.86 & 40.75 & 2.46 & 86.21 & 2.61 & 2.71 & 3.84 \\
\hline 95th-Percentile Queue Length [veh] & 4.98 & 4.66 & 0.04 & 0.35 & 14.34 & 1.29 & 2.93 & 0.18 & 6.21 & 0.19 & 0.19 & 0.28 \\
\hline 95th-Percentile Queue Length [ft] & 124.44 & 116.51 & 1.01 & 8.73 & 358.53 & 32.15 & 73.34 & 4.43 & 155.17 & 4.70 & 4.87 & 6.90 \\
\hline
\end{tabular}

Version 4.00-03 \(\qquad\)
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 61.28 & 6.97 & 4.65 & 51.95 & 16.35 & 7.51 & 47.95 & 34.92 & 47.63 & 57.01 & 39.76 & 40.01 \\
\hline Movement LOS & E & A & A & D & B & A & D & C & D & E & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.49} & \multicolumn{3}{|c|}{15.93} & \multicolumn{3}{|c|}{47.43} & \multicolumn{3}{|c|}{43.33} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.23} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.792} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
196.6

F
1.521

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 45 & 0 & 24 & 39 & 12 & 15 & 0 & 0 & 0 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 373 & 725 & 99 & 46 & 1365 & 102 & 84 & 123 & 556 & 217 & 242 & 48 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 103 & 201 & 27 & 13 & 379 & 28 & 23 & 34 & 154 & 60 & 67 & 13 \\
\hline Total Analysis Volume [veh/h] & 414 & 805 & 110 & 51 & 1515 & 113 & 93 & 137 & 617 & 241 & 269 & 53 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 27 & 0 & 39 & 41 & 0 & 34 & 38 & 38 & 16 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 52 & 52 & 6 & 37 & 37 & 9 & 34 & 34 & 12 & 37 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.05 & 0.31 & 0.31 & 0.07 & 0.28 & 0.28 & 0.10 & 0.31 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.26 & 0.28 & 0.28 & 0.03 & 0.47 & 0.08 & 0.06 & 0.08 & 0.43 & 0.15 & 0.20 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1607 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1629 \\
\hline c, Capacity [veh/h] & 279 & 732 & 702 & 76 & 987 & 441 & 115 & 473 & 402 & 160 & 506 \\
\hline d1, Uniform Delay [s] & 49.50 & 26.38 & 26.43 & 56.21 & 41.44 & 31.09 & 54.86 & 33.66 & 43.06 & 54.00 & 35.57 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.19 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 234.99 & 4.20 & 4.44 & 9.69 & 245.60 & 1.40 & 12.47 & 0.33 & 252.43 & 258.60 & 2.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.48 & 0.64 & 0.64 & 0.67 & 1.53 & 0.26 & 0.81 & 0.29 & 1.53 & 1.51 & 0.64 \\
\hline d, Delay for Lane Group [s/veh] & 284.49 & 30.57 & 30.87 & 65.90 & 287.04 & 32.49 & 67.33 & 33.99 & 295.49 & 312.60 & 37.90 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 26.19 & 10.39 & 10.07 & 1.67 & 47.27 & 2.51 & 3.17 & 3.18 & 39.99 & 16.29 & 8.39 \\
\hline 50th-Percentile Queue Length [ft] & 654.81 & 259.66 & 251.85 & 41.64 & 1181.84 & 62.64 & 79.21 & 79.51 & 999.78 & 407.14 & 209.72 \\
\hline 95th-Percentile Queue Length [veh] & 40.74 & 15.67 & 15.28 & 3.00 & 72.78 & 4.51 & 5.70 & 5.72 & 62.05 & 26.19 & 13.14 \\
\hline 95th-Percentile Queue Length [ft] & 1018.54 & 391.80 & 381.98 & 74.96 & 1819.51 & 112.76 & 142.57 & 143.12 & 1551.20 & 654.76 & 328.47 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 284.49 & 30.70 & 30.87 & 65.90 & 287.04 & 32.49 & 67.33 & 33.99 & 295.49 & 312.60 & 37.90 & 37.90 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{109.77} & \multicolumn{3}{|c|}{263.19} & \multicolumn{3}{|c|}{228.14} & \multicolumn{3}{|c|}{155.49} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{196.60} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.521} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 27.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.937
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 15 & 0 & 27 & 12 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 930 & 225 & 350 & 1776 & 389 & 283 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 250 & 60 & 94 & 477 & 105 & 76 \\
\hline Total Analysis Volume [veh/h] & 1000 & 242 & 376 & 1910 & 418 & 304 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 90 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 40 & 59 & 31 & 31 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 34 & 34 & 23 & 61 & 21 & 21 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.37 & 0.37 & 0.26 & 0.68 & 0.24 & 0.24 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.31 & 0.17 & 0.24 & 0.60 & 0.13 & 0.21 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1189 & 531 & 414 & 2158 & 729 & 335 \\
\hline d1, Uniform Delay [s] & 25.83 & 21.36 & 32.32 & 11.77 & 30.44 & 33.48 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.15 & 0.50 & 0.11 & 0.24 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 7.29 & 2.81 & 10.56 & 5.79 & 0.71 & 17.42 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.84 & 0.46 & 0.91 & 0.89 & 0.57 & 0.91 \\
\hline d, Delay for Lane Group [s/veh] & 33.11 & 24.18 & 42.88 & 17.56 & 31.15 & 50.90 \\
\hline Lane Group LOS & C & C & D & B & D \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 9.70 & 3.82 & 8.35 & 11.43 & 4.00 & 7.90 \\
\hline 50th-Percentile Queue Length [ft] & 242.43 & 95.38 & 208.75 & 285.77 & 99.92 & 197.49 \\
\hline 95th-Percentile Queue Length [veh] & 14.80 & 6.87 & 13.09 & 16.98 & 7.19 & 12.51 \\
\hline 95th-Percentile Queue Length [ft] & 370.11 & 171.69 & 327.22 & 424.38 & 179.85 & 312.73 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 33.11 & 24.18 & 42.88 & 17.56 & 31.15 & 50.90 \\
\hline Movement LOS & C & C & D & B & C & \\
\hline d_A, Approach Delay [s/veh] & 31.37 & 21.72 & D \\
\hline Approach LOS & C & C & \\
\hline d_I, Intersection Delay [s/veh] & 27.56 \\
\hline Intersection LOS & C & \\
\hline Intersection V/C & 0.937 \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 24.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.298
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 196 & 47 & 0 & 240 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 82 & 200 & 50 & 92 & 243 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 28 & 68 & 17 & 31 & 83 \\
\hline Total Analysis Volume [veh/h] & 84 & 112 & 272 & 68 & 125 & 331 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.30 & 0.15 & 0.00 & 0.00 & 0.10 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 24.34 & 16.50 & 0.00 & 0.00 & 8.29 & 0.00 \\
\hline Movement LOS & C & C & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 2.28 & 2.28 & 0.00 & 0.00 & 0.34 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 57.05 & 57.05 & 0.00 & 0.00 & 8.55 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{19.86} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.27} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.97} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec / veh): & 24.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.256
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 24 & 0 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 197 & 23 & 122 & 144 & 58 & 151 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 67 & 8 & 41 & 49 & 20 & 51 \\
\hline Total Analysis Volume [veh/h] & 260 & 31 & 165 & 195 & 78 & 204 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.13 & 0.00 & 0.26 & 0.27 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.27 & 0.00 & 23.96 & 16.92 \\
\hline Movement LOS & A & A & A & A & C & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.45 & 0.00 & 3.03 & 3.03 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 11.22 & 0.00 & 75.68 & 75.68 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.79} & \multicolumn{2}{|c|}{18.86} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.12} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 54 & 44 & 12 & 15 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 173 & 197 & 112 & 133 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 64 & 73 & 42 & 50 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 258 & 294 & 167 & 198 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.95 & 0.97 & 0.97 & 2.16 & 1.91 & 1.96 & 1.00 \\
\hline 95th-Percentile Queue Length [ft] & 23.87 & 24.21 & 24.21 & 54.10 & 47.83 & 48.94 & 24.89 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.07} & \multicolumn{2}{|c|}{13.77} & \multicolumn{2}{|c|}{13.38} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{13.12} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 16.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 0 & 0 & 19 & 10 & 12 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 119 & 197 & 0 & 1 & 273 & 76 & 58 & 3 & 115 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 59 & 0 & 0 & 82 & 23 & 17 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 143 & 237 & 0 & 1 & 328 & 91 & 70 & 4 & 138 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 4.22 & 4.82 & 0.49 & 0.02 & 0.89 & 0.10 \\
\hline 95th-Percentile Queue Length [ft] & 105.45 & 120.57 & 12.27 & 0.57 & 22.36 & 2.41 \\
\hline Approach Delay [s/veh] & 17.76 & 18.53 & \multicolumn{3}{|c|}{10.77} & 10.71 \\
\hline Approach LOS & C & C & B & C & C \\
\hline Intersection Delay [s/veh] & C & \multicolumn{4}{|c|}{} \\
\hline Intersection LOS & &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\E+A+P PM_new.pdf

Scenario 6: E+A+P PM
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.973 & 8.9 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.685 & 15.2 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.727 & 17.8 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.718 & 14.9 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.360 & 184.7 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.247 & 98.3 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 10.3 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.110 & 14.9 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.4 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 18.8 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
8.9

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
A
0.973

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 3 & 0 & 4 & 0 & 0 & 0 & 0 & 2 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1192 & 6 & 2 & 850 & 1 & 2 & 2 & 1 & 5 & 0 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 333 & 2 & 1 & 237 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1330 & 7 & 2 & 949 & 1 & 2 & 2 & 1 & 6 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 88 & 0 & 11 & 88 & 0 & 0 & 21 & 0 & 0 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & \\
\hline Pedestrian Walk [s] & \\
\hline Pedestrian Clearance [s] & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.88 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.80 & 0.00 & 0.30 & 0.00 & 0.05 & 0.00 & 0.08 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 84 & 1425 & 79 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1479 & 7 & 2808 & 1253 & 46 & 18 & 61 & 18 \\
\hline d1, Uniform Delay [s] & 59.13 & 4.06 & 59.55 & 1.24 & 0.87 & 59.97 & 58.52 & 59.97 & 58.52 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 9.40 & 22.54 & 0.33 & 0.00 & 0.80 & 1.28 & 0.69 & 1.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.90 & 0.30 & 0.34 & 0.00 & 0.09 & 0.06 & 0.10 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 13.46 & 82.09 & 1.56 & 0.87 & 60.77 & 59.80 & 60.67 & 59.80 \\
\hline Lane Group LOS & E & B & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 3.86 & 0.10 & 0.13 & 0.00 & 0.13 & 0.04 & 0.20 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 96.54 & 2.50 & 3.19 & 0.01 & 3.31 & 0.91 & 4.88 & 0.91 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 6.95 & 0.18 & 0.23 & 0.00 & 0.24 & 0.07 & 0.35 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 173.78 & 4.49 & 5.74 & 0.02 & 5.95 & 1.64 & 8.78 & 1.64 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 13.46 & 13.46 & 82.09 & 1.56 & 0.87 & 60.77 & 60.77 & 59.80 & 60.67 & 60.67 & 59.80 \\
\hline Movement LOS & E & B & B & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.60} & \multicolumn{3}{|c|}{1.73} & \multicolumn{3}{|c|}{60.58} & \multicolumn{3}{|c|}{60.54} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{8.94} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.973} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
15.2
Level Of Service:
Volume to Capacity (v/c):
B
0.685

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{T\|F} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 24 & 0 & 0 & 0 & 0 & 6 & 9 & 6 & 30 & 0 & 4 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 40 & 1161 & 139 & 35 & 809 & 22 & 24 & 11 & 48 & 94 & 11 & 25 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 11 & 321 & 38 & 10 & 223 & 6 & 7 & 3 & 13 & 26 & 3 & 7 \\
\hline Total Analysis Volume [veh/h] & 44 & 1283 & 154 & 39 & 894 & 24 & 27 & 12 & 53 & 104 & 12 & 28 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 19 & 19 & 0 & 21 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 39 & 39 & 4 & 39 & 39 & 3 & 5 & 5 & 6 & 8 & 8 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.06 & 0.56 & 0.56 & 0.05 & 0.55 & 0.55 & 0.04 & 0.07 & 0.07 & 0.09 & 0.12 & 0.12 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.03 & 0.40 & 0.11 & 0.02 & 0.28 & 0.02 & 0.02 & 0.01 & 0.04 & 0.07 & 0.01 & 0.02 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 95 & 1771 & 791 & 88 & 1757 & 785 & 69 & 123 & 105 & 141 & 200 & 170 \\
\hline d1, Uniform Delay [s] & 31.95 & 11.64 & 7.80 & 32.14 & 9.86 & 7.22 & 32.73 & 30.37 & 31.32 & 31.22 & 27.45 & 27.80 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.46 & 2.62 & 0.55 & 3.44 & 1.06 & 0.07 & 3.63 & 0.34 & 3.73 & 7.22 & 0.12 & 0.45 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.46 & 0.72 & 0.19 & 0.44 & 0.51 & 0.03 & 0.39 & 0.10 & 0.51 & 0.74 & 0.06 & 0.16 \\
\hline d, Delay for Lane Group [s/veh] & 35.41 & 14.25 & 8.35 & 35.58 & 10.91 & 7.29 & 36.36 & 30.71 & 35.05 & 38.43 & 27.58 & 28.26 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.72 & 5.09 & 0.84 & 0.64 & 2.89 & 0.12 & 0.50 & 0.20 & 0.94 & 1.86 & 0.17 & 0.41 \\
\hline 50th-Percentile Queue Length [ft] & 17.97 & 127.36 & 20.93 & 16.05 & 72.16 & 2.98 & 12.56 & 4.88 & 23.61 & 46.60 & 4.28 & 10.25 \\
\hline 95th-Percentile Queue Length [veh] & 1.29 & 8.80 & 1.51 & 1.16 & 5.20 & 0.21 & 0.90 & 0.35 & 1.70 & 3.35 & 0.31 & 0.74 \\
\hline 95th-Percentile Queue Length [ft] & 32.34 & 219.90 & 37.68 & 28.88 & 129.89 & 5.36 & 22.61 & 8.78 & 42.49 & 83.87 & 7.71 & 18.45 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.41 & 14.25 & 8.35 & 35.58 & 10.91 & 7.29 & 36.36 & 30.71 & 35.05 & 38.43 & 27.58 & 28.26 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{14.27} & \multicolumn{3}{|c|}{11.83} & \multicolumn{3}{|c|}{34.87} & \multicolumn{3}{|c|}{35.55} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.25} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.685} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
17.8

B
0.727

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 14 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 12 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1267 & 178 & 100 & 949 & 8 & 6 & 15 & 25 & 122 & 27 & 72 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 352 & 49 & 28 & 264 & 2 & 2 & 4 & 7 & 34 & 8 & 20 \\
\hline Total Analysis Volume [veh/h] & 27 & 1408 & 198 & 111 & 1054 & 9 & 7 & 17 & 28 & 136 & 30 & 80 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 80 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 11 & 11 & 0 & 20 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 45 & 45 & 6 & 48 & 48 & 1 & 4 & 4 & 8 & 12 & 12 \\
\hline g / C, Green / Cycle & 0.04 & 0.56 & 0.56 & 0.08 & 0.60 & 0.60 & 0.01 & 0.06 & 0.06 & 0.11 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.44 & 0.14 & 0.04 & 0.33 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.06 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 66 & 1775 & 792 & 252 & 1903 & 849 & 23 & 95 & 81 & 170 & 250 & 212 \\
\hline d1, Uniform Delay [s] & 37.51 & 14.15 & 9.18 & 35.11 & 9.77 & 6.59 & 39.15 & 36.06 & 36.41 & 35.00 & 29.57 & 30.77 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.05 & 3.74 & 0.76 & 1.21 & 1.17 & 0.02 & 7.48 & 0.89 & 2.53 & 8.33 & 0.21 & 1.10 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.41 & 0.79 & 0.25 & 0.44 & 0.55 & 0.01 & 0.31 & 0.18 & 0.35 & 0.80 & 0.12 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 41.56 & 17.89 & 9.94 & 36.32 & 10.94 & 6.61 & 46.63 & 36.95 & 38.94 & 43.33 & 29.79 & 31.87 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.55 & 8.25 & 1.50 & 0.99 & 4.18 & 0.05 & 0.18 & 0.34 & 0.58 & 2.92 & 0.51 & 1.43 \\
\hline 50th-Percentile Queue Length [ft] & 13.75 & 206.35 & 37.61 & 24.71 & 104.54 & 1.25 & 4.57 & 8.46 & 14.52 & 73.08 & 12.64 & 35.67 \\
\hline 95th-Percentile Queue Length [veh] & 0.99 & 12.97 & 2.71 & 1.78 & 7.53 & 0.09 & 0.33 & 0.61 & 1.05 & 5.26 & 0.91 & 2.57 \\
\hline 95th-Percentile Queue Length [ft] & 24.75 & 324.14 & 67.70 & 44.47 & 188.17 & 2.25 & 8.22 & 15.24 & 26.14 & 131.55 & 22.75 & 64.21 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 41.56 & 17.89 & 9.94 & 36.32 & 10.94 & 6.61 & 46.63 & 36.95 & 38.94 & 43.33 & 29.79 & 31.87 \\
\hline Movement LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{17.32} & \multicolumn{3}{|c|}{13.30} & \multicolumn{3}{|c|}{39.32} & \multicolumn{3}{|c|}{37.95} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.80} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.727} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 14.9 \\
Level Of Service: & B \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.718
\end{tabular}

Delay (sec / veh):
14.9
0.718

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 0 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & , & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 154 & 1344 & 5 & 2 & 911 & 47 & 92 & 1 & 85 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 44 & 383 & 1 & 1 & 259 & 13 & 26 & 0 & 24 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 175 & 1531 & 6 & 2 & 1038 & 54 & 105 & 1 & 97 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 21 & 27 & 0 & 13 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 9 & 46 & 46 & 0 & 37 & 37 & 6 & 7 & 7 & 1 & 2 & 2 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.13 & 0.66 & 0.66 & 0.00 & 0.53 & 0.53 & 0.09 & 0.10 & 0.10 & 0.01 & 0.02 & 0.02 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.11 & 0.48 & 0.00 & 0.00 & 0.33 & 0.04 & 0.07 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 215 & 2094 & 935 & 7 & 1678 & 749 & 140 & 166 & 141 & 19 & 39 & 33 \\
\hline d1, Uniform Delay [s] & 29.48 & 7.98 & 4.17 & 34.78 & 11.68 & 8.20 & 31.22 & 28.46 & 30.53 & 34.36 & 33.49 & 33.71 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.12 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 7.24 & 2.30 & 0.01 & 17.95 & 1.72 & 0.19 & 8.35 & 0.01 & 5.76 & 9.07 & 0.54 & 5.68 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.81 & 0.73 & 0.01 & 0.27 & 0.62 & 0.07 & 0.75 & 0.01 & 0.69 & 0.31 & 0.05 & 0.33 \\
\hline d, Delay for Lane Group [s/veh] & 36.72 & 10.27 & 4.18 & 52.73 & 13.41 & 8.38 & 39.57 & 28.48 & 36.28 & 43.43 & 34.02 & 39.39 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 2.95 & 4.57 & 0.02 & 0.07 & 4.39 & 0.33 & 2.00 & 0.02 & 1.75 & 0.15 & 0.04 & 0.23 \\
\hline 50th-Percentile Queue Length [ft] & 73.86 & 114.30 & 0.48 & 1.70 & 109.69 & 8.24 & 49.94 & 0.38 & 43.79 & 3.66 & 0.95 & 5.78 \\
\hline 95th-Percentile Queue Length [veh] & 5.32 & 8.08 & 0.03 & 0.12 & 7.82 & 0.59 & 3.60 & 0.03 & 3.15 & 0.26 & 0.07 & 0.42 \\
\hline 95th-Percentile Queue Length [ft] & 132.94 & 201.96 & 0.86 & 3.06 & 195.57 & 14.84 & 89.89 & 0.69 & 78.82 & 6.60 & 1.72 & 10.41 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.72 & 10.27 & 4.18 & 52.73 & 13.41 & 8.38 & 39.57 & 28.48 & 36.28 & 43.43 & 34.02 & 39.39 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.96} & \multicolumn{3}{|c|}{13.23} & \multicolumn{3}{|c|}{37.95} & \multicolumn{3}{|c|}{40.10} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.90} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.718} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
184.7

F
1.360

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 0 & 6 & 7 & 3 & 2 & 0 & 0 & 0 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 454 & 1408 & 208 & 35 & 872 & 66 & 79 & 181 & 562 & 176 & 138 & 25 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 126 & 391 & 58 & 10 & 242 & 18 & 22 & 50 & 156 & 49 & 38 & 7 \\
\hline Total Analysis Volume [veh/h] & 504 & 1563 & 231 & 39 & 968 & 73 & 88 & 201 & 624 & 195 & 153 & 28 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 50 & 50 & 5 & 27 & 27 & 8 & 38 & 38 & 11 & 41 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.07 & 0.32 & 0.32 & 0.09 & 0.34 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.32 & 0.54 & 0.56 & 0.02 & 0.30 & 0.05 & 0.06 & 0.12 & 0.44 & 0.12 & 0.11 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1604 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1632 \\
\hline c, Capacity [veh/h] & 373 & 699 & 668 & 68 & 721 & 322 & 110 & 529 & 450 & 146 & 553 \\
\hline d1, Uniform Delay [s] & 46.00 & 35.00 & 35.00 & 56.39 & 46.45 & 37.90 & 55.09 & 31.92 & 41.05 & 54.50 & 29.50 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 175.54 & 138.51 & 163.94 & 7.48 & 163.42 & 1.63 & 12.69 & 0.45 & 187.33 & 188.53 & 0.34 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.35 & 1.28 & 1.34 & 0.58 & 1.34 & 0.23 & 0.80 & 0.38 & 1.39 & 1.33 & 0.33 \\
\hline d, Delay for Lane Group [s/veh] & 221.54 & 173.51 & 198.94 & 63.87 & 209.87 & 39.53 & 67.78 & 32.36 & 228.39 & 243.03 & 29.84 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 28.63 & 45.37 & 48.12 & 1.26 & 26.51 & 1.82 & 3.01 & 4.61 & 36.51 & 12.08 & 3.95 \\
\hline 50th-Percentile Queue Length [ft] & 715.76 & 1134.22 & 1202.95 & 31.40 & 662.86 & 45.58 & 75.23 & 115.32 & 912.75 & 302.03 & 98.72 \\
\hline 95th-Percentile Queue Length [veh] & 43.46 & 66.36 & 71.56 & 2.26 & 40.39 & 3.28 & 5.42 & 8.14 & 55.50 & 19.58 & 7.11 \\
\hline 95th-Percentile Queue Length [ft] & 1086.58 & 1659.01 & 1789.05 & 56.52 & 1009.86 & 82.04 & 135.41 & 203.38 & 1387.61 & 489.55 & 177.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 221.54 & 184.34 & 198.94 & 63.87 & 209.87 & 39.53 & 67.78 & 32.36 & 228.39 & 243.03 & 29.84 & 29.84 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{193.97} & \multicolumn{3}{|c|}{193.08} & \multicolumn{3}{|c|}{169.75} & \multicolumn{3}{|c|}{140.41} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{184.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.360} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 98.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.247
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 0 & 4 & 3 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1610 & 408 & 331 & 1268 & 316 & 473 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 433 & 110 & 89 & 341 & 85 & 127 \\
\hline Total Analysis Volume [veh/h] & 1731 & 439 & 356 & 1363 & 340 & 509 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.54 & 0.31 & 0.22 & 0.43 & 0.11 & 0.36 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.87 & 48.95 & 12.83 & 34.59 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 119.88 & 6.84 & 123.36 & 1.64 & 0.28 & 135.85 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.25 & 0.71 & 1.21 & 0.66 & 0.39 & 1.26 \\
\hline d, Delay for Lane Group [s/veh] & 153.89 & 34.72 & 172.31 & 14.47 & 34.87 & 178.82 \\
\hline Lane Group LOS & F & C & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 41.12 & 10.61 & 18.38 & 9.57 & 4.04 & 27.07 \\
\hline 50th-Percentile Queue Length [ft] & 1028.00 & 265.17 & 459.55 & 239.13 & 101.08 & 676.72 \\
\hline 95th-Percentile Queue Length [veh] & 60.00 & 15.95 & 27.88 & 14.64 & 7.28 & 40.50 \\
\hline 95th-Percentile Queue Length [ft] & 1500.03 & 398.70 & 697.07 & 365.93 & 181.94 & 1012.50 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 153.89 & 34.72 & 172.31 & 14.47 & 34.87 & 178.82 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{129.78} & \multicolumn{2}{|c|}{47.16} & \multicolumn{2}{|c|}{121.17} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{98.26} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.247} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline SG: 1 26s & SG: 256 s & SG: 4 38s \\
\hline & SG: 102 15s & \\
\hline SG: 6 82s & & SG: 7 38s \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.018
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 45 & 13 & 0 & 34 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 85 & 49 & 14 & 28 & 39 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 29 & 17 & 5 & 10 & 13 \\
\hline Total Analysis Volume [veh/h] & 14 & 116 & 67 & 19 & 38 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.12 & 0.00 & 0.00 & 0.03 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.31 & 9.25 & 0.00 & 0.00 & 7.45 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.47 & 0.47 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 11.77 & 11.77 & 0.00 & 0.00 & 1.93 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{9.36} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.11} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.89} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec /veh): & 14.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.110
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 1 & 4 & 0 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 163 & 35 & 46 & 114 & 40 & 132 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 55 & 12 & 16 & 39 & 14 & 45 \\
\hline Total Analysis Volume [veh/h] & 220 & 47 & 62 & 154 & 54 & 178 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.05 & 0.00 & 0.11 & 0.22 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.92 & 0.00 & 14.91 & 12.10 \\
\hline Movement LOS & A & A & A & A & B & B \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.15 & 0.00 & 1.47 & 1.47 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.76 & 0.00 & 36.66 & 36.66 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.27} & \multicolumn{2}{|c|}{12.75} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.83} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 10 & 3 & 2 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 198 & 143 & 89 & 108 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 74 & 53 & 33 & 40 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 295 & 213 & 133 & 161 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.58 & 1.04 & 1.04 & 1.31 & 1.17 & 1.34 & 0.77 \\
\hline 95th-Percentile Queue Length [ft] & 14.61 & 26.02 & 26.02 & 32.83 & 29.13 & 33.40 & 19.27 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.23} & \multicolumn{2}{|c|}{11.48} & \multicolumn{2}{|c|}{11.67} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.44} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 18.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 4 & 0 & 0 & 5 & 2 & 2 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 139 & 260 & 7 & 3 & 189 & 60 & 82 & 4 & 101 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 78 & 2 & 1 & 57 & 18 & 25 & 1 & 30 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 167 & 313 & 8 & 4 & 227 & 72 & 99 & 5 & 121 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 7.31 & 2.65 & 0.74 & 0.03 & 0.76 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 182.71 & 66.30 & 18.47 & 0.71 & 18.90 & 1.75 \\
\hline Approach Delay [s/veh] & 25.57 & 14.07 & \multicolumn{3}{|c|}{10.93} & 10.64 \\
\hline Approach LOS & D & B & B \\
\hline Intersection Delay [s/veh] & C & \multicolumn{4}{|c|}{} \\
\hline Intersection LOS & &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & \begin{tabular}{c} 
Winchester Road at Keller \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & \begin{tabular}{c}
\(340,237.70\) \\
9
\end{tabular} & 4.2 & A \\
\hline 2 & \begin{tabular}{c} 
Winchester Road at Pourroy \\
Road/Abelia Street
\end{tabular} & Signalized & HCM 2010 & WB Left & 0.857 & 38.0 & D \\
\hline 3 & \begin{tabular}{c} 
Winchester Road at Whisper \\
Heights Parkway/Pourroy \\
Road
\end{tabular} & Signalized & HCM 2010 & EB Left & 0.752 & 18.7 & B \\
\hline 4 & \begin{tabular}{c} 
Winchester Road at Jean \\
Nicholas Road/Skyview Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 0.890 & 16.9 & B \\
\hline 5 & \begin{tabular}{c} 
Winchester Road at Max \\
Gillis Boulevard/Thompson \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.521 & 196.6 & F \\
\hline 6 & \begin{tabular}{c} 
Winchester Road at Benton \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Right & 0.937 & 27.6 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.298 & 24.3 & C \\
\hline 8 & \begin{tabular}{c} 
Jean Nicholas Road at Elliot \\
Road
\end{tabular} & Two-way stop & HCM 2010 & WB Left & 0.012 & 10.1 & B \\
\hline 9 & \begin{tabular}{c} 
Pourroy Road at Skyview \\
Road
\end{tabular} & All-way stop & HCM 2010 & EB Left & & 13.1 & B \\
\hline 10 & \begin{tabular}{c} 
Pourroy Road at Thompson \\
Road
\end{tabular} & All-way stop & HCM 2010 & SB Thru & & 16.5 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
4.2

A
340,237.709

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 12 & 0 & 30 & 0 & 0 & 0 & 0 & 15 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 728 & 15 & 0 & 1130 & 3 & 1 & 1 & 4 & 23 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 203 & 4 & 0 & 315 & 1 & 0 & 0 & 1 & 6 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 813 & 17 & 0 & 1261 & 3 & 1 & 1 & 4 & 26 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 90 & 0 & 11 & 90 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 104 & 0 & 103 & 103 & 4 & 4 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.00 & 0.86 & 0.00 & 0.86 & 0.86 & 0.04 & 0.04 & 0.04 & 0.04 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.50 & 0.00 & 0.40 & 0.00 & 0.00 & 0.00 & 306213.44 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1670 & 1597 & 3192 & 1425 & 599 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1443 & 0 & 2751 & 1228 & 67 & 52 & 60 & 52 \\
\hline d1, Uniform Delay [s] & 59.79 & 2.22 & 0.00 & 1.90 & 1.15 & 55.82 & 55.87 & 60.00 & 55.83 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.68 & 0.00 & 0.55 & 0.00 & 0.18 & 0.63 & 21.18 & 0.46 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.58 & 0.00 & 0.46 & 0.00 & 0.03 & 0.08 & 0.43 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 3.89 & 0.00 & 2.45 & 1.15 & 56.00 & 56.50 & 81.18 & 56.30 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & F & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.78 & 0.00 & 0.34 & 0.00 & 0.06 & 0.13 & 1.16 & 0.09 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 19.43 & 0.00 & 8.61 & 0.04 & 1.55 & 3.16 & 29.03 & 2.36 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 1.40 & 0.00 & 0.62 & 0.00 & 0.11 & 0.23 & 2.09 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 34.98 & 0.00 & 15.50 & 0.07 & 2.78 & 5.68 & 52.26 & 4.25 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 3.89 & 3.89 & 0.00 & 2.45 & 1.15 & 56.00 & 56.00 & 56.50 & 81.18 & 81.18 & 56.30 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & F & F & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{3.98} & \multicolumn{3}{|c|}{2.45} & \multicolumn{3}{|c|}{56.33} & \multicolumn{3}{|c|}{78.61} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{4.23} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{340237.709} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
38.0
Level Of Service:
Volume to Capacity (v/c):
0.857

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 165 & 0 & 0 & 0 & 0 & 45 & 36 & 24 & 136 & 0 & 30 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 190 & 625 & 168 & 72 & 995 & 102 & 76 & 39 & 168 & 183 & 42 & 60 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 52 & 173 & 46 & 20 & 275 & 28 & 21 & 11 & 46 & 51 & 12 & 17 \\
\hline Total Analysis Volume [veh/h] & 210 & 691 & 186 & 80 & 1099 & 113 & 84 & 43 & 186 & 202 & 46 & 66 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 110 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 22 & 30 & 0 & 37 & 45 & 0 & 22 & 23 & 0 & 20 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 16 & 55 & 55 & 7 & 46 & 46 & 7 & 16 & 16 & 16 & 25 & 25 \\
\hline g / C, Green / Cycle & 0.15 & 0.50 & 0.50 & 0.06 & 0.42 & 0.42 & 0.07 & 0.15 & 0.15 & 0.14 & 0.22 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.13 & 0.22 & 0.13 & 0.05 & 0.34 & 0.08 & 0.05 & 0.03 & 0.13 & 0.13 & 0.03 & 0.05 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 238 & 1593 & 711 & 103 & 1323 & 591 & 107 & 248 & 210 & 229 & 376 & 319 \\
\hline d1, Uniform Delay [s] & 45.95 & 17.65 & 15.90 & 50.76 & 28.80 & 20.51 & 50.62 & 41.08 & 46.03 & 46.28 & 34.11 & 34.79 \\
\hline k, delay calibration & 0.28 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.25 & 0.32 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 22.65 & 0.86 & 0.89 & 11.72 & 6.16 & 0.72 & 11.74 & 0.33 & 22.80 & 25.58 & 0.14 & 0.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.88 & 0.43 & 0.26 & 0.78 & 0.83 & 0.19 & 0.78 & 0.17 & 0.88 & 0.88 & 0.12 & 0.21 \\
\hline d, Delay for Lane Group [s/veh] & 68.60 & 18.51 & 16.80 & 62.49 & 34.96 & 21.23 & 62.35 & 41.41 & 68.83 & 71.86 & 34.25 & 35.10 \\
\hline Lane Group LOS & E & B & B & E & C & C & E & D & E & E & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 6.71 & 4.96 & 2.49 & 2.37 & 12.36 & 1.76 & 2.63 & 1.05 & 6.29 & 6.87 & 0.97 & 1.42 \\
\hline 50th-Percentile Queue Length [ft] & 167.80 & 123.89 & 62.20 & 59.25 & 308.96 & 44.05 & 65.64 & 26.14 & 157.30 & 171.64 & 24.21 & 35.58 \\
\hline 95th-Percentile Queue Length [veh] & 10.96 & 8.61 & 4.48 & 4.27 & 18.12 & 3.17 & 4.73 & 1.88 & 10.41 & 11.16 & 1.74 & 2.56 \\
\hline 95th-Percentile Queue Length [ft] & 274.02 & 215.16 & 111.97 & 106.66 & 453.09 & 79.29 & 118.15 & 47.06 & 260.14 & 279.07 & 43.58 & 64.04 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 68.60 & 18.51 & 16.80 & 62.49 & 34.96 & 21.23 & 62.35 & 41.41 & 68.83 & 71.86 & 34.25 & 35.10 \\
\hline Movement LOS & E & B & B & E & C & C & E & D & E & E & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{27.89} & \multicolumn{3}{|c|}{35.46} & \multicolumn{3}{|c|}{63.33} & \multicolumn{3}{|c|}{58.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{38.05} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.857} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
18.7

B
0.752

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{77浐} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{7 | \({ }^{\text {F }}\)} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 61 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 75 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 819 & 77 & 109 & 1239 & 12 & 18 & 10 & 12 & 150 & 21 & 154 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 228 & 21 & 30 & 344 & 3 & 5 & 3 & 3 & 42 & 6 & 43 \\
\hline Total Analysis Volume [veh/h] & 26 & 910 & 86 & 121 & 1377 & 13 & 20 & 11 & 13 & 167 & 23 & 171 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 17 & 0 & 23 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 35 & 35 & 6 & 39 & 39 & 2 & 4 & 4 & 9 & 10 & 10 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.09 & 0.55 & 0.55 & 0.03 & 0.05 & 0.05 & 0.13 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.29 & 0.06 & 0.04 & 0.43 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.12 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 65 & 1591 & 710 & 283 & 1752 & 782 & 53 & 88 & 75 & 207 & 250 & 212 \\
\hline d1, Uniform Delay [s] & 32.80 & 12.34 & 9.39 & 30.13 & 12.55 & 7.20 & 33.18 & 31.70 & 31.78 & 29.65 & 25.75 & 28.86 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.91 & 1.50 & 0.35 & 1.02 & 3.64 & 0.04 & 4.34 & 0.63 & 1.10 & 7.19 & 0.16 & 7.05 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.40 & 0.57 & 0.12 & 0.43 & 0.79 & 0.02 & 0.38 & 0.13 & 0.17 & 0.81 & 0.09 & 0.81 \\
\hline d, Delay for Lane Group [s/veh] & 36.70 & 13.84 & 9.74 & 31.15 & 16.19 & 7.24 & 37.52 & 32.33 & 32.87 & 36.84 & 25.91 & 35.91 \\
\hline Lane Group LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.46 & 3.97 & 0.59 & 0.90 & 6.61 & 0.07 & 0.39 & 0.19 & 0.23 & 3.04 & 0.33 & 3.08 \\
\hline 50th-Percentile Queue Length [ft] & 11.45 & 99.26 & 14.80 & 22.52 & 165.37 & 1.76 & 9.79 & 4.76 & 5.75 & 75.92 & 8.26 & 76.90 \\
\hline 95th-Percentile Queue Length [veh] & 0.82 & 7.15 & 1.07 & 1.62 & 10.83 & 0.13 & 0.70 & 0.34 & 0.41 & 5.47 & 0.59 & 5.54 \\
\hline 95th-Percentile Queue Length [ft] & 20.62 & 178.67 & 26.65 & 40.54 & 270.82 & 3.17 & 17.62 & 8.56 & 10.35 & 136.66 & 14.86 & 138.41 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.70 & 13.84 & 9.74 & 31.15 & 16.19 & 7.24 & 37.52 & 32.33 & 32.87 & 36.84 & 25.91 & 35.91 \\
\hline Movement LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{14.08} & \multicolumn{3}{|c|}{17.31} & \multicolumn{3}{|c|}{34.85} & \multicolumn{3}{|c|}{35.71} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{18.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.752} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 16.9 \\
Level Of Service: & B \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.890
\end{tabular}
16.9
0.890

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 0 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 89 & 777 & 4 & 6 & 1363 & 94 & 59 & 4 & 125 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 25 & 221 & 1 & 2 & 388 & 27 & 17 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 101 & 885 & 5 & 7 & 1552 & 107 & 67 & 5 & 142 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 35 & 35 & 1 & 30 & 30 & 5 & 7 & 7 & 0 & 3 & 3 \\
\hline g / C, Green / Cycle & 0.10 & 0.59 & 0.59 & 0.01 & 0.50 & 0.50 & 0.08 & 0.13 & 0.13 & 0.01 & 0.05 & 0.05 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.28 & 0.00 & 0.00 & 0.49 & 0.08 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 155 & 1866 & 833 & 22 & 1602 & 715 & 128 & 212 & 180 & 11 & 89 & 76 \\
\hline d1, Uniform Delay [s] & 26.01 & 7.13 & 5.17 & 29.16 & 14.42 & 8.01 & 26.37 & 22.85 & 25.31 & 29.52 & 26.87 & 26.92 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.61 & 0.19 & 0.00 & 7.64 & 5.41 & 0.10 & 3.26 & 0.04 & 7.40 & 13.21 & 0.26 & 0.53 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.65 & 0.47 & 0.01 & 0.31 & 0.97 & 0.15 & 0.52 & 0.02 & 0.79 & 0.28 & 0.06 & 0.09 \\
\hline d, Delay for Lane Group [s/veh] & 30.62 & 7.32 & 5.17 & 36.80 & 19.83 & 8.11 & 29.63 & 22.90 & 32.71 & 42.73 & 27.13 & 27.44 \\
\hline Lane Group LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.38 & 1.78 & 0.01 & 0.13 & 7.55 & 0.50 & 0.98 & 0.06 & 2.20 & 0.08 & 0.07 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 34.43 & 44.53 & 0.37 & 3.36 & 188.69 & 12.62 & 24.50 & 1.52 & 54.97 & 2.01 & 1.77 & 2.53 \\
\hline 95th-Percentile Queue Length [veh] & 2.48 & 3.21 & 0.03 & 0.24 & 12.05 & 0.91 & 1.76 & 0.11 & 3.96 & 0.14 & 0.13 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 61.97 & 80.15 & 0.67 & 6.04 & 301.33 & 22.72 & 44.10 & 2.73 & 98.94 & 3.62 & 3.18 & 4.55 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 30.62 & 7.32 & 5.17 & 36.80 & 19.83 & 8.11 & 29.63 & 22.90 & 32.71 & 42.73 & 27.13 & 27.44 \\
\hline Movement LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.68} & \multicolumn{3}{|c|}{19.15} & \multicolumn{3}{|c|}{31.52} & \multicolumn{3}{|c|}{30.40} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{16.87} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.890} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
196.6

F
1.521

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 45 & 0 & 24 & 39 & 12 & 15 & 0 & 0 & 0 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 373 & 725 & 99 & 46 & 1365 & 102 & 84 & 123 & 556 & 217 & 242 & 48 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 103 & 201 & 27 & 13 & 379 & 28 & 23 & 34 & 154 & 60 & 67 & 13 \\
\hline Total Analysis Volume [veh/h] & 414 & 805 & 110 & 51 & 1515 & 113 & 93 & 137 & 617 & 241 & 269 & 53 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 27 & 0 & 39 & 41 & 0 & 34 & 38 & 38 & 16 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 22, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 52 & 52 & 6 & 37 & 37 & 9 & 34 & 34 & 12 & 37 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.05 & 0.31 & 0.31 & 0.07 & 0.28 & 0.28 & 0.10 & 0.31 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.26 & 0.28 & 0.28 & 0.03 & 0.47 & 0.08 & 0.06 & 0.08 & 0.43 & 0.15 & 0.20 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1607 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1629 \\
\hline c, Capacity [veh/h] & 279 & 732 & 702 & 76 & 987 & 441 & 115 & 473 & 402 & 160 & 506 \\
\hline d1, Uniform Delay [s] & 49.50 & 26.38 & 26.43 & 56.21 & 41.44 & 31.09 & 54.86 & 33.66 & 43.06 & 54.00 & 35.57 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.19 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 234.99 & 4.20 & 4.44 & 9.69 & 245.60 & 1.40 & 12.47 & 0.33 & 252.43 & 258.60 & 2.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.48 & 0.64 & 0.64 & 0.67 & 1.53 & 0.26 & 0.81 & 0.29 & 1.53 & 1.51 & 0.64 \\
\hline d, Delay for Lane Group [s/veh] & 284.49 & 30.57 & 30.87 & 65.90 & 287.04 & 32.49 & 67.33 & 33.99 & 295.49 & 312.60 & 37.90 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 26.19 & 10.39 & 10.07 & 1.67 & 47.27 & 2.51 & 3.17 & 3.18 & 39.99 & 16.29 & 8.39 \\
\hline 50th-Percentile Queue Length [ft] & 654.81 & 259.66 & 251.85 & 41.64 & 1181.84 & 62.64 & 79.21 & 79.51 & 999.78 & 407.14 & 209.72 \\
\hline 95th-Percentile Queue Length [veh] & 40.74 & 15.67 & 15.28 & 3.00 & 72.78 & 4.51 & 5.70 & 5.72 & 62.05 & 26.19 & 13.14 \\
\hline 95th-Percentile Queue Length [ft] & 1018.54 & 391.80 & 381.98 & 74.96 & 1819.51 & 112.76 & 142.57 & 143.12 & 1551.20 & 654.76 & 328.47 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 284.49 & 30.70 & 30.87 & 65.90 & 287.04 & 32.49 & 67.33 & 33.99 & 295.49 & 312.60 & 37.90 & 37.90 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{109.77} & \multicolumn{3}{|c|}{263.19} & \multicolumn{3}{|c|}{228.14} & \multicolumn{3}{|c|}{155.49} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{196.60} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.521} \\
\hline
\end{tabular}

Sequence


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 27.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.937
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 15 & 0 & 27 & 12 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 930 & 225 & 350 & 1776 & 389 & 283 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 250 & 60 & 94 & 477 & 105 & 76 \\
\hline Total Analysis Volume [veh/h] & 1000 & 242 & 376 & 1910 & 418 & 304 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 40 & 59 & 31 & 31 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 34 & 34 & 23 & 61 & 21 & 21 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.26 & 0.68 & 0.24 & 0.24 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.31 & 0.17 & 0.24 & 0.60 & 0.13 & 0.21 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1189 & 531 & 414 & 2158 & 729 & 335 \\
\hline d1, Uniform Delay [s] & 25.83 & 21.36 & 32.32 & 11.77 & 30.44 & 33.48 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.15 & 0.50 & 0.11 & 0.24 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 7.29 & 2.81 & 10.56 & 5.79 & 0.71 & 17.42 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.84 & 0.46 & 0.91 & 0.89 & 0.57 & 0.91 \\
\hline d, Delay for Lane Group [s/veh] & 33.11 & 24.18 & 42.88 & 17.56 & 31.15 & 50.90 \\
\hline Lane Group LOS & C & C & D & B & C & D \\
\hline Critical Lane Group & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 9.70 & 3.82 & 8.35 & 11.43 & 4.00 & Yes \\
\hline 50th-Percentile Queue Length [ft] & 242.43 & 95.38 & 208.75 & 285.77 & 99.92 & 197.49 \\
\hline 95th-Percentile Queue Length [veh] & 14.80 & 6.87 & 13.09 & 16.98 & 7.19 & 12.51 \\
\hline 95th-Percentile Queue Length [ft] & 370.11 & 171.69 & 327.22 & 424.38 & 179.85 & 312.73 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 33.11 & 24.18 & 42.88 & 17.56 & 31.15 & 50.90 \\
\hline Movement LOS & C & C & D & B & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{31.37} & \multicolumn{2}{|c|}{21.72} & \multicolumn{2}{|c|}{39.47} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{27.56} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.937} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec / veh): & 24.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.298
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 196 & 47 & 0 & 240 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 82 & 200 & 50 & 92 & 243 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 28 & 68 & 17 & 31 & 83 \\
\hline Total Analysis Volume [veh/h] & 84 & 112 & 272 & 68 & 125 & 331 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.30 & 0.15 & 0.00 & 0.00 & 0.10 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 24.34 & 16.50 & 0.00 & 0.00 & 8.29 & 0.00 \\
\hline Movement LOS & C & C & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 2.28 & 2.28 & 0.00 & 0.00 & 0.34 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 57.05 & 57.05 & 0.00 & 0.00 & 8.55 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{19.86} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.27} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.97} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.1 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.012
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 24 & 0 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 9 & 75 & 0 & 7 & 33 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 3 & 25 & 0 & 2 & 11 \\
\hline Total Analysis Volume [veh/h] & 0 & 12 & 101 & 0 & 9 & 45 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & 0 \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.06 & 0.00 & 0.01 & 0.04 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.39 & 0.00 & 10.13 & 8.55 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.20 & 0.00 & 0.17 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 5.02 & 0.00 & 4.28 & 4.28 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.39} & \multicolumn{2}{|c|}{8.81} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.32} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: & \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
4 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 54 & 44 & 12 & 15 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 173 & 197 & 112 & 133 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 64 & 73 & 42 & 50 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 258 & 294 & 167 & 198 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.95 & 0.97 & 0.97 & 2.16 & 1.91 & 1.96 & 1.00 \\
\hline 95th-Percentile Queue Length [ft] & 23.87 & 24.21 & 24.21 & 54.10 & 47.83 & 48.94 & 24.89 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.07} & \multicolumn{2}{|c|}{13.77} & \multicolumn{2}{|c|}{13.38} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{13.12} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 16.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{2}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 114 & 162 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 0 & 0 & 19 & 10 & 12 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 119 & 197 & 0 & 1 & 273 & 76 & 58 & 3 & 115 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 59 & 0 & 0 & 82 & 23 & 17 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 143 & 237 & 0 & 1 & 328 & 91 & 70 & 4 & 138 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 4.22 & 4.82 & 0.49 & 0.02 & 0.89 & 0.10 \\
\hline 95th-Percentile Queue Length [ft] & 105.45 & 120.57 & 12.27 & 0.57 & 22.36 & 2.41 \\
\hline Approach Delay [s/veh] & 17.76 & 18.53 & & 10.77 & & 10.71 \\
\hline Approach LOS & C & C & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{16.53} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.973 & 8.9 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.685 & 15.2 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.727 & 17.8 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.815 & 14.3 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.360 & 184.7 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.247 & 98.3 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 10.3 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.004 & 9.4 & A \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.4 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 18.8 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
8.9

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
A
0.973

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 3 & 0 & 4 & 0 & 0 & 0 & 0 & 2 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1192 & 6 & 2 & 850 & 1 & 2 & 2 & 1 & 5 & 0 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 333 & 2 & 1 & 237 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1330 & 7 & 2 & 949 & 1 & 2 & 2 & 1 & 6 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 88 & 0 & 11 & 88 & 0 & 0 & 21 & 0 & 0 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.88 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.80 & 0.00 & 0.30 & 0.00 & 0.05 & 0.00 & 0.08 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 84 & 1425 & 79 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1479 & 7 & 2808 & 1253 & 46 & 18 & 61 & 18 \\
\hline d1, Uniform Delay [s] & 59.13 & 4.06 & 59.55 & 1.24 & 0.87 & 59.97 & 58.52 & 59.97 & 58.52 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 9.40 & 22.54 & 0.33 & 0.00 & 0.80 & 1.28 & 0.69 & 1.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.90 & 0.30 & 0.34 & 0.00 & 0.09 & 0.06 & 0.10 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 13.46 & 82.09 & 1.56 & 0.87 & 60.77 & 59.80 & 60.67 & 59.80 \\
\hline Lane Group LOS & E & B & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 3.86 & 0.10 & 0.13 & 0.00 & 0.13 & 0.04 & 0.20 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 96.54 & 2.50 & 3.19 & 0.01 & 3.31 & 0.91 & 4.88 & 0.91 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 6.95 & 0.18 & 0.23 & 0.00 & 0.24 & 0.07 & 0.35 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 173.78 & 4.49 & 5.74 & 0.02 & 5.95 & 1.64 & 8.78 & 1.64 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 13.46 & 13.46 & 82.09 & 1.56 & 0.87 & 60.77 & 60.77 & 59.80 & 60.67 & 60.67 & 59.80 \\
\hline Movement LOS & E & B & B & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.60} & \multicolumn{3}{|c|}{1.73} & \multicolumn{3}{|c|}{60.58} & \multicolumn{3}{|c|}{60.54} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{8.94} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.973} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15
\begin{tabular}{cc} 
Delay (sec / veh): & 15.2 \\
Level Of Service: & B \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.685
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 24 & 0 & 0 & 0 & 0 & 6 & 9 & 6 & 30 & 0 & 4 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 40 & 1161 & 139 & 35 & 809 & 22 & 24 & 11 & 48 & 94 & 11 & 25 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 11 & 321 & 38 & 10 & 223 & 6 & 7 & 3 & 13 & 26 & 3 & 7 \\
\hline Total Analysis Volume [veh/h] & 44 & 1283 & 154 & 39 & 894 & 24 & 27 & 12 & 53 & 104 & 12 & 28 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|r|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 19 & 19 & 0 & 21 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 39 & 39 & 4 & 39 & 39 & 3 & 5 & 5 & 6 & 8 & 8 \\
\hline g / C, Green / Cycle & 0.06 & 0.56 & 0.56 & 0.05 & 0.55 & 0.55 & 0.04 & 0.07 & 0.07 & 0.09 & 0.12 & 0.12 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.03 & 0.40 & 0.11 & 0.02 & 0.28 & 0.02 & 0.02 & 0.01 & 0.04 & 0.07 & 0.01 & 0.02 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 95 & 1771 & 791 & 88 & 1757 & 785 & 69 & 123 & 105 & 141 & 200 & 170 \\
\hline d1, Uniform Delay [s] & 31.95 & 11.64 & 7.80 & 32.14 & 9.86 & 7.22 & 32.73 & 30.37 & 31.32 & 31.22 & 27.45 & 27.80 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.46 & 2.62 & 0.55 & 3.44 & 1.06 & 0.07 & 3.63 & 0.34 & 3.73 & 7.22 & 0.12 & 0.45 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.46 & 0.72 & 0.19 & 0.44 & 0.51 & 0.03 & 0.39 & 0.10 & 0.51 & 0.74 & 0.06 & 0.16 \\
\hline d, Delay for Lane Group [s/veh] & 35.41 & 14.25 & 8.35 & 35.58 & 10.91 & 7.29 & 36.36 & 30.71 & 35.05 & 38.43 & 27.58 & 28.26 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.72 & 5.09 & 0.84 & 0.64 & 2.89 & 0.12 & 0.50 & 0.20 & 0.94 & 1.86 & 0.17 & 0.41 \\
\hline 50th-Percentile Queue Length [ft] & 17.97 & 127.36 & 20.93 & 16.05 & 72.16 & 2.98 & 12.56 & 4.88 & 23.61 & 46.60 & 4.28 & 10.25 \\
\hline 95th-Percentile Queue Length [veh] & 1.29 & 8.80 & 1.51 & 1.16 & 5.20 & 0.21 & 0.90 & 0.35 & 1.70 & 3.35 & 0.31 & 0.74 \\
\hline 95th-Percentile Queue Length [ft] & 32.34 & 219.90 & 37.68 & 28.88 & 129.89 & 5.36 & 22.61 & 8.78 & 42.49 & 83.87 & 7.71 & 18.45 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.41 & 14.25 & 8.35 & 35.58 & 10.91 & 7.29 & 36.36 & 30.71 & 35.05 & 38.43 & 27.58 & 28.26 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{14.27} & \multicolumn{3}{|c|}{11.83} & \multicolumn{3}{|c|}{34.87} & \multicolumn{3}{|c|}{35.55} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.25} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.685} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
17.8

B
0.727

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
715
\]} & \multicolumn{3}{|c|}{\[
71 \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 14 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 12 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1267 & 178 & 100 & 949 & 8 & 6 & 15 & 25 & 122 & 27 & 72 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 352 & 49 & 28 & 264 & 2 & 2 & 4 & 7 & 34 & 8 & 20 \\
\hline Total Analysis Volume [veh/h] & 27 & 1408 & 198 & 111 & 1054 & 9 & 7 & 17 & 28 & 136 & 30 & 80 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 80 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 11 & 11 & 0 & 20 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 45 & 45 & 6 & 48 & 48 & 1 & 4 & 4 & 8 & 12 & 12 \\
\hline g / C, Green / Cycle & 0.04 & 0.56 & 0.56 & 0.08 & 0.60 & 0.60 & 0.01 & 0.06 & 0.06 & 0.11 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.44 & 0.14 & 0.04 & 0.33 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.06 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 66 & 1775 & 792 & 252 & 1903 & 849 & 23 & 95 & 81 & 170 & 250 & 212 \\
\hline d1, Uniform Delay [s] & 37.51 & 14.15 & 9.18 & 35.11 & 9.77 & 6.59 & 39.15 & 36.06 & 36.41 & 35.00 & 29.57 & 30.77 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.05 & 3.74 & 0.76 & 1.21 & 1.17 & 0.02 & 7.48 & 0.89 & 2.53 & 8.33 & 0.21 & 1.10 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.41 & 0.79 & 0.25 & 0.44 & 0.55 & 0.01 & 0.31 & 0.18 & 0.35 & 0.80 & 0.12 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 41.56 & 17.89 & 9.94 & 36.32 & 10.94 & 6.61 & 46.63 & 36.95 & 38.94 & 43.33 & 29.79 & 31.87 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.55 & 8.25 & 1.50 & 0.99 & 4.18 & 0.05 & 0.18 & 0.34 & 0.58 & 2.92 & 0.51 & 1.43 \\
\hline 50th-Percentile Queue Length [ft] & 13.75 & 206.35 & 37.61 & 24.71 & 104.54 & 1.25 & 4.57 & 8.46 & 14.52 & 73.08 & 12.64 & 35.67 \\
\hline 95th-Percentile Queue Length [veh] & 0.99 & 12.97 & 2.71 & 1.78 & 7.53 & 0.09 & 0.33 & 0.61 & 1.05 & 5.26 & 0.91 & 2.57 \\
\hline 95th-Percentile Queue Length [ft] & 24.75 & 324.14 & 67.70 & 44.47 & 188.17 & 2.25 & 8.22 & 15.24 & 26.14 & 131.55 & 22.75 & 64.21 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 41.56 & 17.89 & 9.94 & 36.32 & 10.94 & 6.61 & 46.63 & 36.95 & 38.94 & 43.33 & 29.79 & 31.87 \\
\hline Movement LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{17.32} & \multicolumn{3}{|c|}{13.30} & \multicolumn{3}{|c|}{39.32} & \multicolumn{3}{|c|}{37.95} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.80} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.727} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
14.3

B
0.815

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 0 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 154 & 1344 & 5 & 2 & 911 & 47 & 92 & 1 & 85 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 44 & 383 & 1 & 1 & 259 & 13 & 26 & 0 & 24 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 175 & 1531 & 6 & 2 & 1038 & 54 & 105 & 1 & 97 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 19 & 29 & 0 & 11 & 21 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 7 & 27 & 27 & 0 & 20 & 20 & 5 & 6 & 6 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.14 & 0.55 & 0.55 & 0.00 & 0.41 & 0.41 & 0.11 & 0.12 & 0.12 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.48 & 0.00 & 0.00 & 0.33 & 0.04 & 0.07 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 226 & 1741 & 777 & 6 & 1303 & 582 & 173 & 202 & 171 & 18 & 40 & 34 \\
\hline d1, Uniform Delay [s] & 20.79 & 9.97 & 5.21 & 24.93 & 13.03 & 9.14 & 21.37 & 19.44 & 20.84 & 24.62 & 23.96 & 24.11 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.65 & 1.58 & 0.00 & 24.88 & 1.16 & 0.07 & 3.43 & 0.01 & 2.91 & 9.86 & 0.52 & 5.48 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.88 & 0.01 & 0.31 & 0.80 & 0.09 & 0.61 & 0.00 & 0.57 & 0.33 & 0.05 & 0.33 \\
\hline d, Delay for Lane Group [s/veh] & 26.43 & 11.55 & 5.21 & 49.81 & 14.18 & 9.21 & 24.80 & 19.45 & 23.76 & 34.48 & 24.48 & 29.60 \\
\hline Lane Group LOS & C & B & A & D & B & A & C & B & C & C & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 1.91 & 3.78 & 0.01 & 0.06 & 3.44 & 0.25 & 1.23 & 0.01 & 1.11 & 0.12 & 0.03 & 0.17 \\
\hline 50th-Percentile Queue Length [ft] & 47.81 & 94.40 & 0.37 & 1.61 & 86.11 & 6.18 & 30.86 & 0.25 & 27.81 & 2.90 & 0.68 & 4.25 \\
\hline 95th-Percentile Queue Length [veh] & 3.44 & 6.80 & 0.03 & 0.12 & 6.20 & 0.44 & 2.22 & 0.02 & 2.00 & 0.21 & 0.05 & 0.31 \\
\hline 95th-Percentile Queue Length [ft] & 86.07 & 169.91 & 0.66 & 2.90 & 155.00 & 11.12 & 55.55 & 0.45 & 50.05 & 5.22 & 1.22 & 7.65 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 26.43 & 11.55 & 5.21 & 49.81 & 14.18 & 9.21 & 24.80 & 19.45 & 23.76 & 34.48 & 24.48 & 29.60 \\
\hline Movement LOS & C & B & A & D & B & A & C & B & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.05} & \multicolumn{3}{|c|}{14.00} & \multicolumn{3}{|c|}{24.27} & \multicolumn{3}{|c|}{30.60} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.26} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.815} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
184.7

F 1.360

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 0 & 6 & 7 & 3 & 2 & 0 & 0 & 0 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 454 & 1408 & 208 & 35 & 872 & 66 & 79 & 181 & 562 & 176 & 138 & 25 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 126 & 391 & 58 & 10 & 242 & 18 & 22 & 50 & 156 & 49 & 38 & 7 \\
\hline Total Analysis Volume [veh/h] & 504 & 1563 & 231 & 39 & 968 & 73 & 88 & 201 & 624 & 195 & 153 & 28 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 22, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 50 & 50 & 5 & 27 & 27 & 8 & 38 & 38 & 11 & 41 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.07 & 0.32 & 0.32 & 0.09 & 0.34 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.32 & 0.54 & 0.56 & 0.02 & 0.30 & 0.05 & 0.06 & 0.12 & 0.44 & 0.12 & 0.11 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1604 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1632 \\
\hline c, Capacity [veh/h] & 373 & 699 & 668 & 68 & 721 & 322 & 110 & 529 & 450 & 146 & 553 \\
\hline d1, Uniform Delay [s] & 46.00 & 35.00 & 35.00 & 56.39 & 46.45 & 37.90 & 55.09 & 31.92 & 41.05 & 54.50 & 29.50 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 175.54 & 138.51 & 163.94 & 7.48 & 163.42 & 1.63 & 12.69 & 0.45 & 187.33 & 188.53 & 0.34 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.35 & 1.28 & 1.34 & 0.58 & 1.34 & 0.23 & 0.80 & 0.38 & 1.39 & 1.33 & 0.33 \\
\hline d, Delay for Lane Group [s/veh] & 221.54 & 173.51 & 198.94 & 63.87 & 209.87 & 39.53 & 67.78 & 32.36 & 228.39 & 243.03 & 29.84 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 28.63 & 45.37 & 48.12 & 1.26 & 26.51 & 1.82 & 3.01 & 4.61 & 36.51 & 12.08 & 3.95 \\
\hline 50th-Percentile Queue Length [ft] & 715.76 & 1134.22 & 1202.95 & 31.40 & 662.86 & 45.58 & 75.23 & 115.32 & 912.75 & 302.03 & 98.72 \\
\hline 95th-Percentile Queue Length [veh] & 43.46 & 66.36 & 71.56 & 2.26 & 40.39 & 3.28 & 5.42 & 8.14 & 55.50 & 19.58 & 7.11 \\
\hline 95th-Percentile Queue Length [ft] & 1086.58 & 1659.01 & 1789.05 & 56.52 & 1009.86 & 82.04 & 135.41 & 203.38 & 1387.61 & 489.55 & 177.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 221.54 & 184.34 & 198.94 & 63.87 & 209.87 & 39.53 & 67.78 & 32.36 & 228.39 & 243.03 & 29.84 & 29.84 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{193.97} & \multicolumn{3}{|c|}{193.08} & \multicolumn{3}{|c|}{169.75} & \multicolumn{3}{|c|}{140.41} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{184.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.360} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Generated with PTV VISTRO}

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 98.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.247
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\|\|
\]} & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 0 & 4 & 3 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1610 & 408 & 331 & 1268 & 316 & 473 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 433 & 110 & 89 & 341 & 85 & 127 \\
\hline Total Analysis Volume [veh/h] & 1731 & 439 & 356 & 1363 & 340 & 509 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & 0 \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline g / C, Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.54 & 0.31 & 0.22 & 0.43 & 0.11 & 0.36 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.87 & 48.95 & 12.83 & 34.59 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 119.88 & 6.84 & 123.36 & 1.64 & 0.28 & 135.85 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.25 & 0.71 & 1.21 & 0.66 & 0.39 & 1.26 \\
\hline d, Delay for Lane Group [s/veh] & 153.89 & 34.72 & 172.31 & 14.47 & 34.87 & 178.82 \\
\hline Lane Group LOS & F & C & F & B & F & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 41.12 & 10.61 & 18.38 & 9.57 & 4.04 & 27.07 \\
\hline 50th-Percentile Queue Length [ft] & 1028.00 & 265.17 & 459.55 & 239.13 & 101.08 & 676.72 \\
\hline 95th-Percentile Queue Length [veh] & 60.00 & 15.95 & 27.88 & 14.64 & 7.28 & 40.50 \\
\hline 95th-Percentile Queue Length [ft] & 1500.03 & 398.70 & 697.07 & 365.93 & 181.94 & 1012.50 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 153.89 & 34.72 & 172.31 & 14.47 & 34.87 & 178.82 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{129.78} & \multicolumn{2}{|c|}{47.16} & \multicolumn{2}{|c|}{121.17} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{98.26} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.247} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.018
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{5}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 45 & 13 & 0 & 34 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 85 & 49 & 14 & 28 & 39 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 29 & 17 & 5 & 10 & 13 \\
\hline Total Analysis Volume [veh/h] & 14 & 116 & 67 & 19 & 38 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.12 & 0.00 & 0.00 & 0.03 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.31 & 9.25 & 0.00 & 0.00 & 7.45 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.47 & 0.47 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 11.77 & 11.77 & 0.00 & 0.00 & 1.93 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{9.36} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.11} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.89} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 9.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & A \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.004
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 1 & 4 & 0 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 1 & 42 & 0 & 2 & 39 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 0 & 14 & 0 & 1 & 13 \\
\hline Total Analysis Volume [veh/h] & 0 & 1 & 57 & 0 & 3 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.00 & 0.05 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.30 & 0.00 & 9.42 & 8.51 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.11 & 0.00 & 0.17 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.73 & 0.00 & 4.14 & 4.14 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.30} & \multicolumn{2}{|c|}{8.56} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.85} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
4 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 10 & 3 & 2 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 198 & 143 & 89 & 108 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 74 & 53 & 33 & 40 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 295 & 213 & 133 & 161 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.58 & 1.04 & 1.04 & 1.31 & 1.17 & 1.34 & 0.77 \\
\hline 95th-Percentile Queue Length [ft] & 14.61 & 26.02 & 26.02 & 32.83 & 29.13 & 33.40 & 19.27 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.23} & \multicolumn{2}{|c|}{11.48} & \multicolumn{2}{|c|}{11.67} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.44} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 18.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 4 & 0 & 0 & 5 & 2 & 2 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 139 & 260 & 7 & 3 & 189 & 60 & 82 & 4 & 101 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 78 & 2 & 1 & 57 & 18 & 25 & 1 & 30 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 167 & 313 & 8 & 4 & 227 & 72 & 99 & 5 & 121 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 7.31 & 2.65 & 0.74 & 0.03 & 0.76 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 182.71 & 66.30 & 18.47 & 0.71 & 18.90 & 1.75 \\
\hline Approach Delay [s/veh] & 25.57 & 14.07 & \multicolumn{3}{|c|}{10.93} & 10.64 \\
\hline Approach LOS & D & B & B \\
\hline Intersection Delay [s/veh] & C & \multicolumn{4}{|c|}{} \\
\hline Intersection LOS & &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...IE+A+P AM_new.pdf

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & WB Left & 5,955.517 & 4.3 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.857 & 38.0 & D \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.752 & 18.7 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & NB Left & 0.792 & 17.2 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.521 & 196.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.937 & 27.6 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.298 & 24.3 & C \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.256 & 24.0 & C \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 13.1 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 16.5 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
4.3
5,955.517

HCM 2010
15 minutes

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 12 & 0 & 30 & 0 & 0 & 0 & 0 & 15 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 728 & 15 & 0 & 1130 & 3 & 1 & 1 & 4 & 23 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 203 & 4 & 0 & 315 & 1 & 0 & 0 & 1 & 6 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 813 & 17 & 0 & 1261 & 3 & 1 & 1 & 4 & 26 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 90 & 0 & 11 & 90 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 104 & 0 & 103 & 103 & 4 & 4 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.00 & 0.86 & 0.00 & 0.86 & 0.86 & 0.04 & 0.04 & 0.04 & 0.04 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.50 & 0.00 & 0.40 & 0.00 & 0.00 & 0.00 & 5359.47 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1670 & 1597 & 3192 & 1425 & 591 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1441 & 0 & 2748 & 1227 & 67 & 53 & 60 & 53 \\
\hline d1, Uniform Delay [s] & 59.79 & 2.25 & 0.00 & 1.92 & 1.16 & 55.71 & 55.77 & 60.00 & 55.73 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.68 & 0.00 & 0.55 & 0.00 & 0.18 & 0.60 & 21.18 & 0.44 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.58 & 0.00 & 0.46 & 0.00 & 0.03 & 0.08 & 0.43 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 3.93 & 0.00 & 2.48 & 1.17 & 55.89 & 56.36 & 81.18 & 56.17 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & F & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.80 & 0.00 & 0.36 & 0.00 & 0.06 & 0.13 & 1.16 & 0.09 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 20.10 & 0.00 & 9.02 & 0.04 & 1.55 & 3.15 & 29.04 & 2.36 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 1.45 & 0.00 & 0.65 & 0.00 & 0.11 & 0.23 & 2.09 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 36.18 & 0.00 & 16.23 & 0.07 & 2.78 & 5.67 & 52.28 & 4.24 \\
\hline
\end{tabular}

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 3.93 & 3.93 & 0.00 & 2.48 & 1.17 & 55.89 & 55.89 & 56.36 & 81.18 & 81.18 & 56.17 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & F & F & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{4.01} & \multicolumn{3}{|c|}{2.47} & \multicolumn{3}{|c|}{56.21} & \multicolumn{3}{|c|}{78.59} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{4.26} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{5955.517} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
38.0
Level Of Service:
Volume to Capacity (v/c):
0.857

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 165 & 0 & 0 & 0 & 0 & 45 & 36 & 24 & 136 & 0 & 30 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 190 & 625 & 168 & 72 & 995 & 102 & 76 & 39 & 168 & 183 & 42 & 60 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 52 & 173 & 46 & 20 & 275 & 28 & 21 & 11 & 46 & 51 & 12 & 17 \\
\hline Total Analysis Volume [veh/h] & 210 & 691 & 186 & 80 & 1099 & 113 & 84 & 43 & 186 & 202 & 46 & 66 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 110 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 22 & 30 & 0 & 37 & 45 & 0 & 22 & 23 & 0 & 20 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 16 & 55 & 55 & 7 & 46 & 46 & 7 & 16 & 16 & 16 & 25 & 25 \\
\hline g / C, Green / Cycle & 0.15 & 0.50 & 0.50 & 0.06 & 0.42 & 0.42 & 0.07 & 0.15 & 0.15 & 0.14 & 0.22 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.13 & 0.22 & 0.13 & 0.05 & 0.34 & 0.08 & 0.05 & 0.03 & 0.13 & 0.13 & 0.03 & 0.05 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 238 & 1593 & 711 & 103 & 1323 & 591 & 107 & 248 & 210 & 229 & 376 & 319 \\
\hline d1, Uniform Delay [s] & 45.95 & 17.65 & 15.90 & 50.76 & 28.80 & 20.51 & 50.62 & 41.08 & 46.03 & 46.28 & 34.11 & 34.79 \\
\hline k, delay calibration & 0.28 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.25 & 0.32 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 22.65 & 0.86 & 0.89 & 11.72 & 6.16 & 0.72 & 11.74 & 0.33 & 22.80 & 25.58 & 0.14 & 0.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.88 & 0.43 & 0.26 & 0.78 & 0.83 & 0.19 & 0.78 & 0.17 & 0.88 & 0.88 & 0.12 & 0.21 \\
\hline d, Delay for Lane Group [s/veh] & 68.60 & 18.51 & 16.80 & 62.49 & 34.96 & 21.23 & 62.35 & 41.41 & 68.83 & 71.86 & 34.25 & 35.10 \\
\hline Lane Group LOS & E & B & B & E & C & C & E & D & E & E & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 6.71 & 4.96 & 2.49 & 2.37 & 12.36 & 1.76 & 2.63 & 1.05 & 6.29 & 6.87 & 0.97 & 1.42 \\
\hline 50th-Percentile Queue Length [ft] & 167.80 & 123.89 & 62.20 & 59.25 & 308.96 & 44.05 & 65.64 & 26.14 & 157.30 & 171.64 & 24.21 & 35.58 \\
\hline 95th-Percentile Queue Length [veh] & 10.96 & 8.61 & 4.48 & 4.27 & 18.12 & 3.17 & 4.73 & 1.88 & 10.41 & 11.16 & 1.74 & 2.56 \\
\hline 95th-Percentile Queue Length [ft] & 274.02 & 215.16 & 111.97 & 106.66 & 453.09 & 79.29 & 118.15 & 47.06 & 260.14 & 279.07 & 43.58 & 64.04 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 68.60 & 18.51 & 16.80 & 62.49 & 34.96 & 21.23 & 62.35 & 41.41 & 68.83 & 71.86 & 34.25 & 35.10 \\
\hline Movement LOS & E & B & B & E & C & C & E & D & E & E & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{27.89} & \multicolumn{3}{|c|}{35.46} & \multicolumn{3}{|c|}{63.33} & \multicolumn{3}{|c|}{58.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{38.05} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.857} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
18.7

B
0.752

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 61 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 75 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 819 & 77 & 109 & 1239 & 12 & 18 & 10 & 12 & 150 & 21 & 154 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 228 & 21 & 30 & 344 & 3 & 5 & 3 & 3 & 42 & 6 & 43 \\
\hline Total Analysis Volume [veh/h] & 26 & 910 & 86 & 121 & 1377 & 13 & 20 & 11 & 13 & 167 & 23 & 171 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 17 & 0 & 23 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 35 & 35 & 6 & 39 & 39 & 2 & 4 & 4 & 9 & 10 & 10 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.09 & 0.55 & 0.55 & 0.03 & 0.05 & 0.05 & 0.13 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.29 & 0.06 & 0.04 & 0.43 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.12 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 65 & 1591 & 710 & 283 & 1752 & 782 & 53 & 88 & 75 & 207 & 250 & 212 \\
\hline d1, Uniform Delay [s] & 32.80 & 12.34 & 9.39 & 30.13 & 12.55 & 7.20 & 33.18 & 31.70 & 31.78 & 29.65 & 25.75 & 28.86 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.91 & 1.50 & 0.35 & 1.02 & 3.64 & 0.04 & 4.34 & 0.63 & 1.10 & 7.19 & 0.16 & 7.05 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.40 & 0.57 & 0.12 & 0.43 & 0.79 & 0.02 & 0.38 & 0.13 & 0.17 & 0.81 & 0.09 & 0.81 \\
\hline d, Delay for Lane Group [s/veh] & 36.70 & 13.84 & 9.74 & 31.15 & 16.19 & 7.24 & 37.52 & 32.33 & 32.87 & 36.84 & 25.91 & 35.91 \\
\hline Lane Group LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.46 & 3.97 & 0.59 & 0.90 & 6.61 & 0.07 & 0.39 & 0.19 & 0.23 & 3.04 & 0.33 & 3.08 \\
\hline 50th-Percentile Queue Length [ft] & 11.45 & 99.26 & 14.80 & 22.52 & 165.37 & 1.76 & 9.79 & 4.76 & 5.75 & 75.92 & 8.26 & 76.90 \\
\hline 95th-Percentile Queue Length [veh] & 0.82 & 7.15 & 1.07 & 1.62 & 10.83 & 0.13 & 0.70 & 0.34 & 0.41 & 5.47 & 0.59 & 5.54 \\
\hline 95th-Percentile Queue Length [ft] & 20.62 & 178.67 & 26.65 & 40.54 & 270.82 & 3.17 & 17.62 & 8.56 & 10.35 & 136.66 & 14.86 & 138.41 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.70 & 13.84 & 9.74 & 31.15 & 16.19 & 7.24 & 37.52 & 32.33 & 32.87 & 36.84 & 25.91 & 35.91 \\
\hline Movement LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{14.08} & \multicolumn{3}{|c|}{17.31} & \multicolumn{3}{|c|}{34.85} & \multicolumn{3}{|c|}{35.71} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{18.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.752} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
17.2

B
0.792

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 0 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & , & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 89 & 777 & 4 & 6 & 1363 & 94 & 59 & 4 & 125 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 25 & 221 & 1 & 2 & 388 & 27 & 17 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 101 & 885 & 5 & 7 & 1552 & 107 & 67 & 5 & 142 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 90 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 41 & 49 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 7 & 61 & 61 & 1 & 56 & 56 & 6 & 11 & 11 & 1 & 6 & 6 \\
\hline g / C, Green / Cycle & 0.08 & 0.68 & 0.68 & 0.01 & 0.62 & 0.62 & 0.06 & 0.12 & 0.12 & 0.01 & 0.06 & 0.06 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.28 & 0.00 & 0.00 & 0.49 & 0.08 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 126 & 2170 & 969 & 22 & 1963 & 876 & 103 & 204 & 174 & 11 & 108 & 92 \\
\hline d1, Uniform Delay [s] & 40.86 & 6.40 & 4.64 & 44.04 & 13.00 & 7.22 & 41.19 & 34.87 & 38.61 & 44.55 & 39.58 & 39.66 \\
\hline k, delay calibration & 0.21 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 20.41 & 0.57 & 0.01 & 7.91 & 3.34 & 0.29 & 6.76 & 0.05 & 9.02 & 12.46 & 0.17 & 0.35 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.80 & 0.41 & 0.01 & 0.32 & 0.79 & 0.12 & 0.65 & 0.02 & 0.82 & 0.27 & 0.05 & 0.08 \\
\hline d, Delay for Lane Group [s/veh] & 61.28 & 6.97 & 4.65 & 51.95 & 16.35 & 7.51 & 47.95 & 34.92 & 47.63 & 57.01 & 39.76 & 40.01 \\
\hline Lane Group LOS & E & A & A & D & B & A & D & C & D & E & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 2.77 & 2.59 & 0.02 & 0.19 & 9.33 & 0.71 & 1.63 & 0.10 & 3.45 & 0.10 & 0.11 & 0.15 \\
\hline 50th-Percentile Queue Length [ft] & 69.14 & 64.73 & 0.56 & 4.85 & 233.28 & 17.86 & 40.75 & 2.46 & 86.21 & 2.61 & 2.71 & 3.84 \\
\hline 95th-Percentile Queue Length [veh] & 4.98 & 4.66 & 0.04 & 0.35 & 14.34 & 1.29 & 2.93 & 0.18 & 6.21 & 0.19 & 0.19 & 0.28 \\
\hline 95th-Percentile Queue Length [ft] & 124.44 & 116.51 & 1.01 & 8.73 & 358.53 & 32.15 & 73.34 & 4.43 & 155.17 & 4.70 & 4.87 & 6.90 \\
\hline
\end{tabular}

Version 4.00-03 \(\qquad\)
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 61.28 & 6.97 & 4.65 & 51.95 & 16.35 & 7.51 & 47.95 & 34.92 & 47.63 & 57.01 & 39.76 & 40.01 \\
\hline Movement LOS & E & A & A & D & B & A & D & C & D & E & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.49} & \multicolumn{3}{|c|}{15.93} & \multicolumn{3}{|c|}{47.43} & \multicolumn{3}{|c|}{43.33} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.23} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.792} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
196.6

F
1.521

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 45 & 0 & 24 & 39 & 12 & 15 & 0 & 0 & 0 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 373 & 725 & 99 & 46 & 1365 & 102 & 84 & 123 & 556 & 217 & 242 & 48 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 103 & 201 & 27 & 13 & 379 & 28 & 23 & 34 & 154 & 60 & 67 & 13 \\
\hline Total Analysis Volume [veh/h] & 414 & 805 & 110 & 51 & 1515 & 113 & 93 & 137 & 617 & 241 & 269 & 53 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 27 & 0 & 39 & 41 & 0 & 34 & 38 & 38 & 16 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 52 & 52 & 6 & 37 & 37 & 9 & 34 & 34 & 12 & 37 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.05 & 0.31 & 0.31 & 0.07 & 0.28 & 0.28 & 0.10 & 0.31 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.26 & 0.28 & 0.28 & 0.03 & 0.47 & 0.08 & 0.06 & 0.08 & 0.43 & 0.15 & 0.20 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1607 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1629 \\
\hline c, Capacity [veh/h] & 279 & 732 & 702 & 76 & 987 & 441 & 115 & 473 & 402 & 160 & 506 \\
\hline d1, Uniform Delay [s] & 49.50 & 26.38 & 26.43 & 56.21 & 41.44 & 31.09 & 54.86 & 33.66 & 43.06 & 54.00 & 35.57 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.19 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 234.99 & 4.20 & 4.44 & 9.69 & 245.60 & 1.40 & 12.47 & 0.33 & 252.43 & 258.60 & 2.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.48 & 0.64 & 0.64 & 0.67 & 1.53 & 0.26 & 0.81 & 0.29 & 1.53 & 1.51 & 0.64 \\
\hline d, Delay for Lane Group [s/veh] & 284.49 & 30.57 & 30.87 & 65.90 & 287.04 & 32.49 & 67.33 & 33.99 & 295.49 & 312.60 & 37.90 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 26.19 & 10.39 & 10.07 & 1.67 & 47.27 & 2.51 & 3.17 & 3.18 & 39.99 & 16.29 & 8.39 \\
\hline 50th-Percentile Queue Length [ft] & 654.81 & 259.66 & 251.85 & 41.64 & 1181.84 & 62.64 & 79.21 & 79.51 & 999.78 & 407.14 & 209.72 \\
\hline 95th-Percentile Queue Length [veh] & 40.74 & 15.67 & 15.28 & 3.00 & 72.78 & 4.51 & 5.70 & 5.72 & 62.05 & 26.19 & 13.14 \\
\hline 95th-Percentile Queue Length [ft] & 1018.54 & 391.80 & 381.98 & 74.96 & 1819.51 & 112.76 & 142.57 & 143.12 & 1551.20 & 654.76 & 328.47 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 284.49 & 30.70 & 30.87 & 65.90 & 287.04 & 32.49 & 67.33 & 33.99 & 295.49 & 312.60 & 37.90 & 37.90 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{109.77} & \multicolumn{3}{|c|}{263.19} & \multicolumn{3}{|c|}{228.14} & \multicolumn{3}{|c|}{155.49} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{196.60} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.521} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 27.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.937
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 15 & 0 & 27 & 12 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 930 & 225 & 350 & 1776 & 389 & 283 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 250 & 60 & 94 & 477 & 105 & 76 \\
\hline Total Analysis Volume [veh/h] & 1000 & 242 & 376 & 1910 & 418 & 304 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 90 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 40 & 59 & 31 & 31 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 34 & 34 & 23 & 61 & 21 & 21 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.37 & 0.37 & 0.26 & 0.68 & 0.24 & 0.24 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.31 & 0.17 & 0.24 & 0.60 & 0.13 & 0.21 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1189 & 531 & 414 & 2158 & 729 & 335 \\
\hline d1, Uniform Delay [s] & 25.83 & 21.36 & 32.32 & 11.77 & 30.44 & 33.48 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.15 & 0.50 & 0.11 & 0.24 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 7.29 & 2.81 & 10.56 & 5.79 & 0.71 & 17.42 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.84 & 0.46 & 0.91 & 0.89 & 0.57 \\
\hline d, Delay for Lane Group [s/veh] & 33.11 & 24.18 & 42.88 & 17.56 & 31.15 & 50.90 \\
\hline Lane Group LOS & C & C & D & B & C & D \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 9.70 & 3.82 & 8.35 & 11.43 & 4.00 & 7.90 \\
\hline 50th-Percentile Queue Length [ft] & 242.43 & 95.38 & 208.75 & 285.77 & 99.92 & 197.49 \\
\hline 95th-Percentile Queue Length [veh] & 14.80 & 6.87 & 13.09 & 16.98 & 7.19 & 12.51 \\
\hline 95th-Percentile Queue Length [ft] & 370.11 & 171.69 & 327.22 & 424.38 & 179.85 & 312.73 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 33.11 & 24.18 & 42.88 & 17.56 & 31.15 & 50.90 \\
\hline Movement LOS & C & C & D & B & C & \\
\hline d_A, Approach Delay [s/veh] & 31.37 & 21.72 & D \\
\hline Approach LOS & C & C & \\
\hline d_I, Intersection Delay [s/veh] & 27.56 \\
\hline Intersection LOS & C & \\
\hline Intersection V/C & 0.937 \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 24.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.298
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 196 & 47 & 0 & 240 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 82 & 200 & 50 & 92 & 243 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 28 & 68 & 17 & 31 & 83 \\
\hline Total Analysis Volume [veh/h] & 84 & 112 & 272 & 68 & 125 & 331 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.30 & 0.15 & 0.00 & 0.00 & 0.10 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 24.34 & 16.50 & 0.00 & 0.00 & 8.29 & 0.00 \\
\hline Movement LOS & C & C & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 2.28 & 2.28 & 0.00 & 0.00 & 0.34 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 57.05 & 57.05 & 0.00 & 0.00 & 8.55 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{19.86} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.27} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.97} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec / veh): & 24.0 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.256
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 24 & 0 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 197 & 23 & 122 & 144 & 58 & 151 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 67 & 8 & 41 & 49 & 20 & 51 \\
\hline Total Analysis Volume [veh/h] & 260 & 31 & 165 & 195 & 78 & 204 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.13 & 0.00 & 0.26 & 0.27 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.27 & 0.00 & 23.96 & 16.92 \\
\hline Movement LOS & A & A & A & A & C & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.45 & 0.00 & 3.03 & 3.03 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 11.22 & 0.00 & 75.68 & 75.68 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.79} & \multicolumn{2}{|c|}{18.86} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.12} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
\leftrightarrows \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 54 & 44 & 12 & 15 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 173 & 197 & 112 & 133 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 64 & 73 & 42 & 50 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 258 & 294 & 167 & 198 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.95 & 0.97 & 0.97 & 2.16 & 1.91 & 1.96 & 1.00 \\
\hline 95th-Percentile Queue Length [ft] & 23.87 & 24.21 & 24.21 & 54.10 & 47.83 & 48.94 & 24.89 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.07} & \multicolumn{2}{|c|}{13.77} & \multicolumn{2}{|c|}{13.38} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{13.12} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 16.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 0 & 0 & 19 & 10 & 12 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 119 & 197 & 0 & 1 & 273 & 76 & 58 & 3 & 115 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 59 & 0 & 0 & 82 & 23 & 17 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 143 & 237 & 0 & 1 & 328 & 91 & 70 & 4 & 138 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 4.22 & 4.82 & 0.49 & 0.02 & 0.89 & 0.10 \\
\hline 95th-Percentile Queue Length [ft] & 105.45 & 120.57 & 12.27 & 0.57 & 22.36 & 2.41 \\
\hline Approach Delay [s/veh] & 17.76 & 18.53 & \multicolumn{3}{|c|}{10.77} & 10.71 \\
\hline Approach LOS & C & C & B & C & C \\
\hline Intersection Delay [s/veh] & C & \multicolumn{4}{|c|}{} \\
\hline Intersection LOS & &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\... \({ }^{\text {tves1. }}\).vistro
Report File: Q:\...IE+A+P PM_new.pdf

Scenario 6: E+A+P PM
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.973 & 8.9 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.685 & 15.2 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.727 & 17.8 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.718 & 14.9 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.360 & 184.7 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.247 & 98.3 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 10.3 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.110 & 14.9 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.4 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 18.8 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
8.9

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
A
0.973

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 3 & 0 & 4 & 0 & 0 & 0 & 0 & 2 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1192 & 6 & 2 & 850 & 1 & 2 & 2 & 1 & 5 & 0 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 333 & 2 & 1 & 237 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1330 & 7 & 2 & 949 & 1 & 2 & 2 & 1 & 6 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 88 & 0 & 11 & 88 & 0 & 0 & 21 & 0 & 0 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.88 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.80 & 0.00 & 0.30 & 0.00 & 0.05 & 0.00 & 0.08 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 84 & 1425 & 79 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1479 & 7 & 2808 & 1253 & 46 & 18 & 61 & 18 \\
\hline d1, Uniform Delay [s] & 59.13 & 4.06 & 59.55 & 1.24 & 0.87 & 59.97 & 58.52 & 59.97 & 58.52 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 9.40 & 22.54 & 0.33 & 0.00 & 0.80 & 1.28 & 0.69 & 1.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.90 & 0.30 & 0.34 & 0.00 & 0.09 & 0.06 & 0.10 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 13.46 & 82.09 & 1.56 & 0.87 & 60.77 & 59.80 & 60.67 & 59.80 \\
\hline Lane Group LOS & E & B & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 3.86 & 0.10 & 0.13 & 0.00 & 0.13 & 0.04 & 0.20 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 96.54 & 2.50 & 3.19 & 0.01 & 3.31 & 0.91 & 4.88 & 0.91 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 6.95 & 0.18 & 0.23 & 0.00 & 0.24 & 0.07 & 0.35 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 173.78 & 4.49 & 5.74 & 0.02 & 5.95 & 1.64 & 8.78 & 1.64 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 13.46 & 13.46 & 82.09 & 1.56 & 0.87 & 60.77 & 60.77 & 59.80 & 60.67 & 60.67 & 59.80 \\
\hline Movement LOS & E & B & B & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.60} & \multicolumn{3}{|c|}{1.73} & \multicolumn{3}{|c|}{60.58} & \multicolumn{3}{|c|}{60.54} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{8.94} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.973} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
15.2
Level Of Service:
Volume to Capacity (v/c):
B
0.685

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{T\|F} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 24 & 0 & 0 & 0 & 0 & 6 & 9 & 6 & 30 & 0 & 4 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 40 & 1161 & 139 & 35 & 809 & 22 & 24 & 11 & 48 & 94 & 11 & 25 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 11 & 321 & 38 & 10 & 223 & 6 & 7 & 3 & 13 & 26 & 3 & 7 \\
\hline Total Analysis Volume [veh/h] & 44 & 1283 & 154 & 39 & 894 & 24 & 27 & 12 & 53 & 104 & 12 & 28 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 19 & 19 & 0 & 21 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 39 & 39 & 4 & 39 & 39 & 3 & 5 & 5 & 6 & 8 & 8 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.06 & 0.56 & 0.56 & 0.05 & 0.55 & 0.55 & 0.04 & 0.07 & 0.07 & 0.09 & 0.12 & 0.12 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.03 & 0.40 & 0.11 & 0.02 & 0.28 & 0.02 & 0.02 & 0.01 & 0.04 & 0.07 & 0.01 & 0.02 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 95 & 1771 & 791 & 88 & 1757 & 785 & 69 & 123 & 105 & 141 & 200 & 170 \\
\hline d1, Uniform Delay [s] & 31.95 & 11.64 & 7.80 & 32.14 & 9.86 & 7.22 & 32.73 & 30.37 & 31.32 & 31.22 & 27.45 & 27.80 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.46 & 2.62 & 0.55 & 3.44 & 1.06 & 0.07 & 3.63 & 0.34 & 3.73 & 7.22 & 0.12 & 0.45 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.46 & 0.72 & 0.19 & 0.44 & 0.51 & 0.03 & 0.39 & 0.10 & 0.51 & 0.74 & 0.06 & 0.16 \\
\hline d, Delay for Lane Group [s/veh] & 35.41 & 14.25 & 8.35 & 35.58 & 10.91 & 7.29 & 36.36 & 30.71 & 35.05 & 38.43 & 27.58 & 28.26 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.72 & 5.09 & 0.84 & 0.64 & 2.89 & 0.12 & 0.50 & 0.20 & 0.94 & 1.86 & 0.17 & 0.41 \\
\hline 50th-Percentile Queue Length [ft] & 17.97 & 127.36 & 20.93 & 16.05 & 72.16 & 2.98 & 12.56 & 4.88 & 23.61 & 46.60 & 4.28 & 10.25 \\
\hline 95th-Percentile Queue Length [veh] & 1.29 & 8.80 & 1.51 & 1.16 & 5.20 & 0.21 & 0.90 & 0.35 & 1.70 & 3.35 & 0.31 & 0.74 \\
\hline 95th-Percentile Queue Length [ft] & 32.34 & 219.90 & 37.68 & 28.88 & 129.89 & 5.36 & 22.61 & 8.78 & 42.49 & 83.87 & 7.71 & 18.45 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.41 & 14.25 & 8.35 & 35.58 & 10.91 & 7.29 & 36.36 & 30.71 & 35.05 & 38.43 & 27.58 & 28.26 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{14.27} & \multicolumn{3}{|c|}{11.83} & \multicolumn{3}{|c|}{34.87} & \multicolumn{3}{|c|}{35.55} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.25} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.685} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
17.8

B
0.727

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
715
\]} & \multicolumn{3}{|c|}{7|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 14 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 12 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1267 & 178 & 100 & 949 & 8 & 6 & 15 & 25 & 122 & 27 & 72 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 352 & 49 & 28 & 264 & 2 & 2 & 4 & 7 & 34 & 8 & 20 \\
\hline Total Analysis Volume [veh/h] & 27 & 1408 & 198 & 111 & 1054 & 9 & 7 & 17 & 28 & 136 & 30 & 80 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 11 & 11 & 0 & 20 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 45 & 45 & 6 & 48 & 48 & 1 & 4 & 4 & 8 & 12 & 12 \\
\hline g / C, Green / Cycle & 0.04 & 0.56 & 0.56 & 0.08 & 0.60 & 0.60 & 0.01 & 0.06 & 0.06 & 0.11 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.44 & 0.14 & 0.04 & 0.33 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.06 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 66 & 1775 & 792 & 252 & 1903 & 849 & 23 & 95 & 81 & 170 & 250 & 212 \\
\hline d1, Uniform Delay [s] & 37.51 & 14.15 & 9.18 & 35.11 & 9.77 & 6.59 & 39.15 & 36.06 & 36.41 & 35.00 & 29.57 & 30.77 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.05 & 3.74 & 0.76 & 1.21 & 1.17 & 0.02 & 7.48 & 0.89 & 2.53 & 8.33 & 0.21 & 1.10 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.41 & 0.79 & 0.25 & 0.44 & 0.55 & 0.01 & 0.31 & 0.18 & 0.35 & 0.80 & 0.12 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 41.56 & 17.89 & 9.94 & 36.32 & 10.94 & 6.61 & 46.63 & 36.95 & 38.94 & 43.33 & 29.79 & 31.87 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.55 & 8.25 & 1.50 & 0.99 & 4.18 & 0.05 & 0.18 & 0.34 & 0.58 & 2.92 & 0.51 & 1.43 \\
\hline 50th-Percentile Queue Length [ft] & 13.75 & 206.35 & 37.61 & 24.71 & 104.54 & 1.25 & 4.57 & 8.46 & 14.52 & 73.08 & 12.64 & 35.67 \\
\hline 95th-Percentile Queue Length [veh] & 0.99 & 12.97 & 2.71 & 1.78 & 7.53 & 0.09 & 0.33 & 0.61 & 1.05 & 5.26 & 0.91 & 2.57 \\
\hline 95th-Percentile Queue Length [ft] & 24.75 & 324.14 & 67.70 & 44.47 & 188.17 & 2.25 & 8.22 & 15.24 & 26.14 & 131.55 & 22.75 & 64.21 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 41.56 & 17.89 & 9.94 & 36.32 & 10.94 & 6.61 & 46.63 & 36.95 & 38.94 & 43.33 & 29.79 & 31.87 \\
\hline Movement LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{17.32} & \multicolumn{3}{|c|}{13.30} & \multicolumn{3}{|c|}{39.32} & \multicolumn{3}{|c|}{37.95} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.80} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.727} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 14.9 \\
Level Of Service: & B \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.718
\end{tabular}

Delay (sec / veh):
14.9
0.718

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 0 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & , & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 154 & 1344 & 5 & 2 & 911 & 47 & 92 & 1 & 85 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 44 & 383 & 1 & 1 & 259 & 13 & 26 & 0 & 24 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 175 & 1531 & 6 & 2 & 1038 & 54 & 105 & 1 & 97 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 21 & 27 & 0 & 13 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 12, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 9 & 46 & 46 & 0 & 37 & 37 & 6 & 7 & 7 & 1 & 2 & 2 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.13 & 0.66 & 0.66 & 0.00 & 0.53 & 0.53 & 0.09 & 0.10 & 0.10 & 0.01 & 0.02 & 0.02 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.11 & 0.48 & 0.00 & 0.00 & 0.33 & 0.04 & 0.07 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 215 & 2094 & 935 & 7 & 1678 & 749 & 140 & 166 & 141 & 19 & 39 & 33 \\
\hline d1, Uniform Delay [s] & 29.48 & 7.98 & 4.17 & 34.78 & 11.68 & 8.20 & 31.22 & 28.46 & 30.53 & 34.36 & 33.49 & 33.71 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.12 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 7.24 & 2.30 & 0.01 & 17.95 & 1.72 & 0.19 & 8.35 & 0.01 & 5.76 & 9.07 & 0.54 & 5.68 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.81 & 0.73 & 0.01 & 0.27 & 0.62 & 0.07 & 0.75 & 0.01 & 0.69 & 0.31 & 0.05 & 0.33 \\
\hline d, Delay for Lane Group [s/veh] & 36.72 & 10.27 & 4.18 & 52.73 & 13.41 & 8.38 & 39.57 & 28.48 & 36.28 & 43.43 & 34.02 & 39.39 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 2.95 & 4.57 & 0.02 & 0.07 & 4.39 & 0.33 & 2.00 & 0.02 & 1.75 & 0.15 & 0.04 & 0.23 \\
\hline 50th-Percentile Queue Length [ft] & 73.86 & 114.30 & 0.48 & 1.70 & 109.69 & 8.24 & 49.94 & 0.38 & 43.79 & 3.66 & 0.95 & 5.78 \\
\hline 95th-Percentile Queue Length [veh] & 5.32 & 8.08 & 0.03 & 0.12 & 7.82 & 0.59 & 3.60 & 0.03 & 3.15 & 0.26 & 0.07 & 0.42 \\
\hline 95th-Percentile Queue Length [ft] & 132.94 & 201.96 & 0.86 & 3.06 & 195.57 & 14.84 & 89.89 & 0.69 & 78.82 & 6.60 & 1.72 & 10.41 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.72 & 10.27 & 4.18 & 52.73 & 13.41 & 8.38 & 39.57 & 28.48 & 36.28 & 43.43 & 34.02 & 39.39 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.96} & \multicolumn{3}{|c|}{13.23} & \multicolumn{3}{|c|}{37.95} & \multicolumn{3}{|c|}{40.10} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.90} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.718} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
184.7

F
1.360

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \mid
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 0 & 6 & 7 & 3 & 2 & 0 & 0 & 0 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 454 & 1408 & 208 & 35 & 872 & 66 & 79 & 181 & 562 & 176 & 138 & 25 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 126 & 391 & 58 & 10 & 242 & 18 & 22 & 50 & 156 & 49 & 38 & 7 \\
\hline Total Analysis Volume [veh/h] & 504 & 1563 & 231 & 39 & 968 & 73 & 88 & 201 & 624 & 195 & 153 & 28 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 50 & 50 & 5 & 27 & 27 & 8 & 38 & 38 & 11 & 41 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.07 & 0.32 & 0.32 & 0.09 & 0.34 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.32 & 0.54 & 0.56 & 0.02 & 0.30 & 0.05 & 0.06 & 0.12 & 0.44 & 0.12 & 0.11 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1604 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1632 \\
\hline c, Capacity [veh/h] & 373 & 699 & 668 & 68 & 721 & 322 & 110 & 529 & 450 & 146 & 553 \\
\hline d1, Uniform Delay [s] & 46.00 & 35.00 & 35.00 & 56.39 & 46.45 & 37.90 & 55.09 & 31.92 & 41.05 & 54.50 & 29.50 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 175.54 & 138.51 & 163.94 & 7.48 & 163.42 & 1.63 & 12.69 & 0.45 & 187.33 & 188.53 & 0.34 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.35 & 1.28 & 1.34 & 0.58 & 1.34 & 0.23 & 0.80 & 0.38 & 1.39 & 1.33 & 0.33 \\
\hline d, Delay for Lane Group [s/veh] & 221.54 & 173.51 & 198.94 & 63.87 & 209.87 & 39.53 & 67.78 & 32.36 & 228.39 & 243.03 & 29.84 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 28.63 & 45.37 & 48.12 & 1.26 & 26.51 & 1.82 & 3.01 & 4.61 & 36.51 & 12.08 & 3.95 \\
\hline 50th-Percentile Queue Length [ft] & 715.76 & 1134.22 & 1202.95 & 31.40 & 662.86 & 45.58 & 75.23 & 115.32 & 912.75 & 302.03 & 98.72 \\
\hline 95th-Percentile Queue Length [veh] & 43.46 & 66.36 & 71.56 & 2.26 & 40.39 & 3.28 & 5.42 & 8.14 & 55.50 & 19.58 & 7.11 \\
\hline 95th-Percentile Queue Length [ft] & 1086.58 & 1659.01 & 1789.05 & 56.52 & 1009.86 & 82.04 & 135.41 & 203.38 & 1387.61 & 489.55 & 177.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 221.54 & 184.34 & 198.94 & 63.87 & 209.87 & 39.53 & 67.78 & 32.36 & 228.39 & 243.03 & 29.84 & 29.84 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{193.97} & \multicolumn{3}{|c|}{193.08} & \multicolumn{3}{|c|}{169.75} & \multicolumn{3}{|c|}{140.41} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{184.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.360} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 98.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.247
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 0 & 4 & 3 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1610 & 408 & 331 & 1268 & 316 & 473 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 433 & 110 & 89 & 341 & 85 & 127 \\
\hline Total Analysis Volume [veh/h] & 1731 & 439 & 356 & 1363 & 340 & 509 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.54 & 0.31 & 0.22 & 0.43 & 0.11 & 0.36 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.87 & 48.95 & 12.83 & 34.59 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 119.88 & 6.84 & 123.36 & 1.64 & 0.28 & 135.85 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.25 & 0.71 & 1.21 & 0.66 & 0.39 & 1.26 \\
\hline d, Delay for Lane Group [s/veh] & 153.89 & 34.72 & 172.31 & 14.47 & 34.87 & 178.82 \\
\hline Lane Group LOS & F & C & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 41.12 & 10.61 & 18.38 & 9.57 & 4.04 & 27.07 \\
\hline 50th-Percentile Queue Length [ft] & 1028.00 & 265.17 & 459.55 & 239.13 & 101.08 & 676.72 \\
\hline 95th-Percentile Queue Length [veh] & 60.00 & 15.95 & 27.88 & 14.64 & 7.28 & 40.50 \\
\hline 95th-Percentile Queue Length [ft] & 1500.03 & 398.70 & 697.07 & 365.93 & 181.94 & 1012.50 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 153.89 & 34.72 & 172.31 & 14.47 & 34.87 & 178.82 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{129.78} & \multicolumn{2}{|c|}{47.16} & \multicolumn{2}{|c|}{121.17} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{98.26} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.247} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline SG: 1 26s & SG: 256 s & SG: 4 38s \\
\hline & SG: 102 15s & \\
\hline SG: 6 82s & & SG: 7 38s \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes

Delay (sec / veh):
10.3

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{5}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 45 & 13 & 0 & 34 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 85 & 49 & 14 & 28 & 39 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 29 & 17 & 5 & 10 & 13 \\
\hline Total Analysis Volume [veh/h] & 14 & 116 & 67 & 19 & 38 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.12 & 0.00 & 0.00 & 0.03 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.31 & 9.25 & 0.00 & 0.00 & 7.45 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.47 & 0.47 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 11.77 & 11.77 & 0.00 & 0.00 & 1.93 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{9.36} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.11} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.89} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec /veh): & 14.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.110
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 1 & 4 & 0 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 163 & 35 & 46 & 114 & 40 & 132 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 55 & 12 & 16 & 39 & 14 & 45 \\
\hline Total Analysis Volume [veh/h] & 220 & 47 & 62 & 154 & 54 & 178 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.05 & 0.00 & 0.11 & 0.22 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.92 & 0.00 & 14.91 & 12.10 \\
\hline Movement LOS & A & A & A & A & B & B \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.15 & 0.00 & 1.47 & 1.47 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.76 & 0.00 & 36.66 & 36.66 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.27} & \multicolumn{2}{|c|}{12.75} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{B} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.83} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 10 & 3 & 2 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 198 & 143 & 89 & 108 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 74 & 53 & 33 & 40 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 295 & 213 & 133 & 161 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.58 & 1.04 & 1.04 & 1.31 & 1.17 & 1.34 & 0.77 \\
\hline 95th-Percentile Queue Length [ft] & 14.61 & 26.02 & 26.02 & 32.83 & 29.13 & 33.40 & 19.27 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.23} & \multicolumn{2}{|c|}{11.48} & \multicolumn{2}{|c|}{11.67} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.44} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 18.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 4 & 0 & 0 & 5 & 2 & 2 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 139 & 260 & 7 & 3 & 189 & 60 & 82 & 4 & 101 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 78 & 2 & 1 & 57 & 18 & 25 & 1 & 30 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 167 & 313 & 8 & 4 & 227 & 72 & 99 & 5 & 121 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 7.31 & 2.65 & 0.74 & 0.03 & 0.76 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 182.71 & 66.30 & 18.47 & 0.71 & 18.90 & 1.75 \\
\hline Approach Delay [s/veh] & 25.57 & 14.07 & \multicolumn{3}{|c|}{10.93} & 10.64 \\
\hline Approach LOS & D & B & B \\
\hline Intersection Delay [s/veh] & C & \multicolumn{4}{|c|}{} \\
\hline Intersection LOS & &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & WB Left & \[
\begin{array}{|c|}
\hline 340,237.70 \\
9
\end{array}
\] & 4.2 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.857 & 38.0 & D \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.752 & 18.7 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.890 & 16.9 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.521 & 196.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.937 & 27.6 & C \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.298 & 24.3 & C \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.012 & 10.1 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 13.1 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 16.5 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
4.2

A
340,237.709

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 12 & 0 & 30 & 0 & 0 & 0 & 0 & 15 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1 & 728 & 15 & 0 & 1130 & 3 & 1 & 1 & 4 & 23 & 0 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 203 & 4 & 0 & 315 & 1 & 0 & 0 & 1 & 6 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 1 & 813 & 17 & 0 & 1261 & 3 & 1 & 1 & 4 & 26 & 0 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 90 & 0 & 11 & 90 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 0 & 104 & 0 & 103 & 103 & 4 & 4 & 4 & 4 \\
\hline g / C, Green / Cycle & 0.00 & 0.86 & 0.00 & 0.86 & 0.86 & 0.04 & 0.04 & 0.04 & 0.04 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.50 & 0.00 & 0.40 & 0.00 & 0.00 & 0.00 & 306213.44 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1670 & 1597 & 3192 & 1425 & 599 & 1425 & 0 & 1425 \\
\hline c, Capacity [veh/h] & 6 & 1443 & 0 & 2751 & 1228 & 67 & 52 & 60 & 52 \\
\hline d1, Uniform Delay [s] & 59.79 & 2.22 & 0.00 & 1.90 & 1.15 & 55.82 & 55.87 & 60.00 & 55.83 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 12.86 & 1.68 & 0.00 & 0.55 & 0.00 & 0.18 & 0.63 & 21.18 & 0.46 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.58 & 0.00 & 0.46 & 0.00 & 0.03 & 0.08 & 0.43 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 72.65 & 3.89 & 0.00 & 2.45 & 1.15 & 56.00 & 56.50 & 81.18 & 56.30 \\
\hline Lane Group LOS & E & A & A & A & A & E & E & F & E \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.02 & 0.78 & 0.00 & 0.34 & 0.00 & 0.06 & 0.13 & 1.16 & 0.09 \\
\hline 50th-Percentile Queue Length [ft] & 0.62 & 19.43 & 0.00 & 8.61 & 0.04 & 1.55 & 3.16 & 29.03 & 2.36 \\
\hline 95th-Percentile Queue Length [veh] & 0.04 & 1.40 & 0.00 & 0.62 & 0.00 & 0.11 & 0.23 & 2.09 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 1.12 & 34.98 & 0.00 & 15.50 & 0.07 & 2.78 & 5.68 & 52.26 & 4.25 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 72.65 & 3.89 & 3.89 & 0.00 & 2.45 & 1.15 & 56.00 & 56.00 & 56.50 & 81.18 & 81.18 & 56.30 \\
\hline Movement LOS & E & A & A & A & A & A & E & E & E & F & F & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{3.98} & \multicolumn{3}{|c|}{2.45} & \multicolumn{3}{|c|}{56.33} & \multicolumn{3}{|c|}{78.61} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{4.23} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{340237.709} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes

Delay (sec / veh):
38.0
Level Of Service:
Volume to Capacity (v/c):
0.857

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 165 & 0 & 0 & 0 & 0 & 45 & 36 & 24 & 136 & 0 & 30 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 190 & 625 & 168 & 72 & 995 & 102 & 76 & 39 & 168 & 183 & 42 & 60 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 52 & 173 & 46 & 20 & 275 & 28 & 21 & 11 & 46 & 51 & 12 & 17 \\
\hline Total Analysis Volume [veh/h] & 210 & 691 & 186 & 80 & 1099 & 113 & 84 & 43 & 186 & 202 & 46 & 66 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 110 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 22 & 30 & 0 & 37 & 45 & 0 & 22 & 23 & 0 & 20 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 16 & 55 & 55 & 7 & 46 & 46 & 7 & 16 & 16 & 16 & 25 & 25 \\
\hline g / C, Green / Cycle & 0.15 & 0.50 & 0.50 & 0.06 & 0.42 & 0.42 & 0.07 & 0.15 & 0.15 & 0.14 & 0.22 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.13 & 0.22 & 0.13 & 0.05 & 0.34 & 0.08 & 0.05 & 0.03 & 0.13 & 0.13 & 0.03 & 0.05 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 238 & 1593 & 711 & 103 & 1323 & 591 & 107 & 248 & 210 & 229 & 376 & 319 \\
\hline d1, Uniform Delay [s] & 45.95 & 17.65 & 15.90 & 50.76 & 28.80 & 20.51 & 50.62 & 41.08 & 46.03 & 46.28 & 34.11 & 34.79 \\
\hline k, delay calibration & 0.28 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.25 & 0.32 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 22.65 & 0.86 & 0.89 & 11.72 & 6.16 & 0.72 & 11.74 & 0.33 & 22.80 & 25.58 & 0.14 & 0.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.88 & 0.43 & 0.26 & 0.78 & 0.83 & 0.19 & 0.78 & 0.17 & 0.88 & 0.88 & 0.12 & 0.21 \\
\hline d, Delay for Lane Group [s/veh] & 68.60 & 18.51 & 16.80 & 62.49 & 34.96 & 21.23 & 62.35 & 41.41 & 68.83 & 71.86 & 34.25 & 35.10 \\
\hline Lane Group LOS & E & B & B & E & C & C & E & D & E & E & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 6.71 & 4.96 & 2.49 & 2.37 & 12.36 & 1.76 & 2.63 & 1.05 & 6.29 & 6.87 & 0.97 & 1.42 \\
\hline 50th-Percentile Queue Length [ft] & 167.80 & 123.89 & 62.20 & 59.25 & 308.96 & 44.05 & 65.64 & 26.14 & 157.30 & 171.64 & 24.21 & 35.58 \\
\hline 95th-Percentile Queue Length [veh] & 10.96 & 8.61 & 4.48 & 4.27 & 18.12 & 3.17 & 4.73 & 1.88 & 10.41 & 11.16 & 1.74 & 2.56 \\
\hline 95th-Percentile Queue Length [ft] & 274.02 & 215.16 & 111.97 & 106.66 & 453.09 & 79.29 & 118.15 & 47.06 & 260.14 & 279.07 & 43.58 & 64.04 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 68.60 & 18.51 & 16.80 & 62.49 & 34.96 & 21.23 & 62.35 & 41.41 & 68.83 & 71.86 & 34.25 & 35.10 \\
\hline Movement LOS & E & B & B & E & C & C & E & D & E & E & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{27.89} & \multicolumn{3}{|c|}{35.46} & \multicolumn{3}{|c|}{63.33} & \multicolumn{3}{|c|}{58.63} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{38.05} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.857} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
18.7

B
0.752

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{77浐} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{7 | \({ }^{\text {F }}\)} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 61 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 75 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 819 & 77 & 109 & 1239 & 12 & 18 & 10 & 12 & 150 & 21 & 154 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 228 & 21 & 30 & 344 & 3 & 5 & 3 & 3 & 42 & 6 & 43 \\
\hline Total Analysis Volume [veh/h] & 26 & 910 & 86 & 121 & 1377 & 13 & 20 & 11 & 13 & 167 & 23 & 171 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 17 & 0 & 23 & 29 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 35 & 35 & 6 & 39 & 39 & 2 & 4 & 4 & 9 & 10 & 10 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.09 & 0.55 & 0.55 & 0.03 & 0.05 & 0.05 & 0.13 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.29 & 0.06 & 0.04 & 0.43 & 0.01 & 0.01 & 0.01 & 0.01 & 0.10 & 0.01 & 0.12 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 65 & 1591 & 710 & 283 & 1752 & 782 & 53 & 88 & 75 & 207 & 250 & 212 \\
\hline d1, Uniform Delay [s] & 32.80 & 12.34 & 9.39 & 30.13 & 12.55 & 7.20 & 33.18 & 31.70 & 31.78 & 29.65 & 25.75 & 28.86 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.91 & 1.50 & 0.35 & 1.02 & 3.64 & 0.04 & 4.34 & 0.63 & 1.10 & 7.19 & 0.16 & 7.05 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.40 & 0.57 & 0.12 & 0.43 & 0.79 & 0.02 & 0.38 & 0.13 & 0.17 & 0.81 & 0.09 & 0.81 \\
\hline d, Delay for Lane Group [s/veh] & 36.70 & 13.84 & 9.74 & 31.15 & 16.19 & 7.24 & 37.52 & 32.33 & 32.87 & 36.84 & 25.91 & 35.91 \\
\hline Lane Group LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.46 & 3.97 & 0.59 & 0.90 & 6.61 & 0.07 & 0.39 & 0.19 & 0.23 & 3.04 & 0.33 & 3.08 \\
\hline 50th-Percentile Queue Length [ft] & 11.45 & 99.26 & 14.80 & 22.52 & 165.37 & 1.76 & 9.79 & 4.76 & 5.75 & 75.92 & 8.26 & 76.90 \\
\hline 95th-Percentile Queue Length [veh] & 0.82 & 7.15 & 1.07 & 1.62 & 10.83 & 0.13 & 0.70 & 0.34 & 0.41 & 5.47 & 0.59 & 5.54 \\
\hline 95th-Percentile Queue Length [ft] & 20.62 & 178.67 & 26.65 & 40.54 & 270.82 & 3.17 & 17.62 & 8.56 & 10.35 & 136.66 & 14.86 & 138.41 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.70 & 13.84 & 9.74 & 31.15 & 16.19 & 7.24 & 37.52 & 32.33 & 32.87 & 36.84 & 25.91 & 35.91 \\
\hline Movement LOS & D & B & A & C & B & A & D & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{14.08} & \multicolumn{3}{|c|}{17.31} & \multicolumn{3}{|c|}{34.85} & \multicolumn{3}{|c|}{35.71} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{18.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.752} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 16.9 \\
Level Of Service: & B \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.890
\end{tabular}
16.9
0.890

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 90 & 0 & 0 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 89 & 777 & 4 & 6 & 1363 & 94 & 59 & 4 & 125 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 25 & 221 & 1 & 2 & 388 & 27 & 17 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 101 & 885 & 5 & 7 & 1552 & 107 & 67 & 5 & 142 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 35 & 35 & 1 & 30 & 30 & 5 & 7 & 7 & 0 & 3 & 3 \\
\hline g / C, Green / Cycle & 0.10 & 0.59 & 0.59 & 0.01 & 0.50 & 0.50 & 0.08 & 0.13 & 0.13 & 0.01 & 0.05 & 0.05 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.28 & 0.00 & 0.00 & 0.49 & 0.08 & 0.04 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 155 & 1866 & 833 & 22 & 1602 & 715 & 128 & 212 & 180 & 11 & 89 & 76 \\
\hline d1, Uniform Delay [s] & 26.01 & 7.13 & 5.17 & 29.16 & 14.42 & 8.01 & 26.37 & 22.85 & 25.31 & 29.52 & 26.87 & 26.92 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.61 & 0.19 & 0.00 & 7.64 & 5.41 & 0.10 & 3.26 & 0.04 & 7.40 & 13.21 & 0.26 & 0.53 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.65 & 0.47 & 0.01 & 0.31 & 0.97 & 0.15 & 0.52 & 0.02 & 0.79 & 0.28 & 0.06 & 0.09 \\
\hline d, Delay for Lane Group [s/veh] & 30.62 & 7.32 & 5.17 & 36.80 & 19.83 & 8.11 & 29.63 & 22.90 & 32.71 & 42.73 & 27.13 & 27.44 \\
\hline Lane Group LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 1.38 & 1.78 & 0.01 & 0.13 & 7.55 & 0.50 & 0.98 & 0.06 & 2.20 & 0.08 & 0.07 & 0.10 \\
\hline 50th-Percentile Queue Length [ft] & 34.43 & 44.53 & 0.37 & 3.36 & 188.69 & 12.62 & 24.50 & 1.52 & 54.97 & 2.01 & 1.77 & 2.53 \\
\hline 95th-Percentile Queue Length [veh] & 2.48 & 3.21 & 0.03 & 0.24 & 12.05 & 0.91 & 1.76 & 0.11 & 3.96 & 0.14 & 0.13 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 61.97 & 80.15 & 0.67 & 6.04 & 301.33 & 22.72 & 44.10 & 2.73 & 98.94 & 3.62 & 3.18 & 4.55 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 30.62 & 7.32 & 5.17 & 36.80 & 19.83 & 8.11 & 29.63 & 22.90 & 32.71 & 42.73 & 27.13 & 27.44 \\
\hline Movement LOS & C & A & A & D & B & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{9.68} & \multicolumn{3}{|c|}{19.15} & \multicolumn{3}{|c|}{31.52} & \multicolumn{3}{|c|}{30.40} \\
\hline Approach LOS & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{16.87} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.890} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
196.6

F
1.521

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 45 & 0 & 24 & 39 & 12 & 15 & 0 & 0 & 0 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 373 & 725 & 99 & 46 & 1365 & 102 & 84 & 123 & 556 & 217 & 242 & 48 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 103 & 201 & 27 & 13 & 379 & 28 & 23 & 34 & 154 & 60 & 67 & 13 \\
\hline Total Analysis Volume [veh/h] & 414 & 805 & 110 & 51 & 1515 & 113 & 93 & 137 & 617 & 241 & 269 & 53 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 25 & 27 & 0 & 39 & 41 & 0 & 34 & 38 & 38 & 16 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 21 & 52 & 52 & 6 & 37 & 37 & 9 & 34 & 34 & 12 & 37 \\
\hline g / C, Green / Cycle & 0.18 & 0.44 & 0.44 & 0.05 & 0.31 & 0.31 & 0.07 & 0.28 & 0.28 & 0.10 & 0.31 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.26 & 0.28 & 0.28 & 0.03 & 0.47 & 0.08 & 0.06 & 0.08 & 0.43 & 0.15 & 0.20 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1607 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1629 \\
\hline c, Capacity [veh/h] & 279 & 732 & 702 & 76 & 987 & 441 & 115 & 473 & 402 & 160 & 506 \\
\hline d1, Uniform Delay [s] & 49.50 & 26.38 & 26.43 & 56.21 & 41.44 & 31.09 & 54.86 & 33.66 & 43.06 & 54.00 & 35.57 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.19 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 234.99 & 4.20 & 4.44 & 9.69 & 245.60 & 1.40 & 12.47 & 0.33 & 252.43 & 258.60 & 2.32 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.48 & 0.64 & 0.64 & 0.67 & 1.53 & 0.26 & 0.81 & 0.29 & 1.53 & 1.51 & 0.64 \\
\hline d, Delay for Lane Group [s/veh] & 284.49 & 30.57 & 30.87 & 65.90 & 287.04 & 32.49 & 67.33 & 33.99 & 295.49 & 312.60 & 37.90 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & C & F & F & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 26.19 & 10.39 & 10.07 & 1.67 & 47.27 & 2.51 & 3.17 & 3.18 & 39.99 & 16.29 & 8.39 \\
\hline 50th-Percentile Queue Length [ft] & 654.81 & 259.66 & 251.85 & 41.64 & 1181.84 & 62.64 & 79.21 & 79.51 & 999.78 & 407.14 & 209.72 \\
\hline 95th-Percentile Queue Length [veh] & 40.74 & 15.67 & 15.28 & 3.00 & 72.78 & 4.51 & 5.70 & 5.72 & 62.05 & 26.19 & 13.14 \\
\hline 95th-Percentile Queue Length [ft] & 1018.54 & 391.80 & 381.98 & 74.96 & 1819.51 & 112.76 & 142.57 & 143.12 & 1551.20 & 654.76 & 328.47 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 284.49 & 30.70 & 30.87 & 65.90 & 287.04 & 32.49 & 67.33 & 33.99 & 295.49 & 312.60 & 37.90 & 37.90 \\
\hline Movement LOS & F & C & C & E & F & C & E & C & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{109.77} & \multicolumn{3}{|c|}{263.19} & \multicolumn{3}{|c|}{228.14} & \multicolumn{3}{|c|}{155.49} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{196.60} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.521} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03
Intersection Level Of Service Report Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 27.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.937
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 15 & 0 & 27 & 12 & 0 & 30 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 930 & 225 & 350 & 1776 & 389 & 283 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 250 & 60 & 94 & 477 & 105 & 76 \\
\hline Total Analysis Volume [veh/h] & 1000 & 242 & 376 & 1910 & 418 & 304 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 19 & 0 & 40 & 59 & 31 & 31 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 34 & 34 & 23 & 61 & 21 & 21 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.26 & 0.68 & 0.24 & 0.24 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.31 & 0.17 & 0.24 & 0.60 & 0.13 & 0.21 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1189 & 531 & 414 & 2158 & 729 & 335 \\
\hline d1, Uniform Delay [s] & 25.83 & 21.36 & 32.32 & 11.77 & 30.44 & 33.48 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.15 & 0.50 & 0.11 & 0.24 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 7.29 & 2.81 & 10.56 & 5.79 & 0.71 & 17.42 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.84 & 0.46 & 0.91 & 0.89 & 0.57 & 0.91 \\
\hline d, Delay for Lane Group [s/veh] & 33.11 & 24.18 & 42.88 & 17.56 & 31.15 & 50.90 \\
\hline Lane Group LOS & C & C & D & B & C & D \\
\hline Critical Lane Group & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 9.70 & 3.82 & 8.35 & 11.43 & 4.00 & Yes \\
\hline 50th-Percentile Queue Length [ft] & 242.43 & 95.38 & 208.75 & 285.77 & 99.92 & 197.49 \\
\hline 95th-Percentile Queue Length [veh] & 14.80 & 6.87 & 13.09 & 16.98 & 7.19 & 12.51 \\
\hline 95th-Percentile Queue Length [ft] & 370.11 & 171.69 & 327.22 & 424.38 & 179.85 & 312.73 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 33.11 & 24.18 & 42.88 & 17.56 & 31.15 & 50.90 \\
\hline Movement LOS & C & C & D & B & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{31.37} & \multicolumn{2}{|c|}{21.72} & \multicolumn{2}{|c|}{39.47} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{27.56} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.937} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec / veh): & 24.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.298
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 196 & 47 & 0 & 240 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 82 & 200 & 50 & 92 & 243 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 28 & 68 & 17 & 31 & 83 \\
\hline Total Analysis Volume [veh/h] & 84 & 112 & 272 & 68 & 125 & 331 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.30 & 0.15 & 0.00 & 0.00 & 0.10 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 24.34 & 16.50 & 0.00 & 0.00 & 8.29 & 0.00 \\
\hline Movement LOS & C & C & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 2.28 & 2.28 & 0.00 & 0.00 & 0.34 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 57.05 & 57.05 & 0.00 & 0.00 & 8.55 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{19.86} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.27} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.97} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.1 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.012
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 24 & 0 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 9 & 75 & 0 & 7 & 33 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 3 & 25 & 0 & 2 & 11 \\
\hline Total Analysis Volume [veh/h] & 0 & 12 & 101 & 0 & 9 & 45 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.06 & 0.00 & 0.01 & 0.04 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.39 & 0.00 & 10.13 & 8.55 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.20 & 0.00 & 0.17 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 5.02 & 0.00 & 4.28 & 4.28 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.39} & \multicolumn{2}{|c|}{8.81} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.32} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes & & B
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 54 & 44 & 12 & 15 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 173 & 197 & 112 & 133 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 64 & 73 & 42 & 50 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 258 & 294 & 167 & 198 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.95 & 0.97 & 0.97 & 2.16 & 1.91 & 1.96 & 1.00 \\
\hline 95th-Percentile Queue Length [ft] & 23.87 & 24.21 & 24.21 & 54.10 & 47.83 & 48.94 & 24.89 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{12.07} & \multicolumn{2}{|c|}{13.77} & \multicolumn{2}{|c|}{13.38} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{13.12} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 16.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{2}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 114 & 162 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 24 & 0 & 0 & 19 & 10 & 12 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 119 & 197 & 0 & 1 & 273 & 76 & 58 & 3 & 115 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 59 & 0 & 0 & 82 & 23 & 17 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 143 & 237 & 0 & 1 & 328 & 91 & 70 & 4 & 138 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 4.22 & 4.82 & 0.49 & 0.02 & 0.89 & 0.10 \\
\hline 95th-Percentile Queue Length [ft] & 105.45 & 120.57 & 12.27 & 0.57 & 22.36 & 2.41 \\
\hline Approach Delay [s/veh] & 17.76 & 18.53 & & 10.77 & & 10.71 \\
\hline Approach LOS & C & C & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{16.53} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & SB Left & 0.973 & 8.9 & A \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 0.685 & 15.2 & B \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & EB Left & 0.727 & 17.8 & B \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Left & 0.815 & 14.3 & B \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.360 & 184.7 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.247 & 98.3 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 10.3 & B \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.004 & 9.4 & A \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 11.4 & B \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 18.8 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
8.9

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
A
0.973

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 3 & 0 & 4 & 0 & 0 & 0 & 0 & 2 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 4 & 1192 & 6 & 2 & 850 & 1 & 2 & 2 & 1 & 5 & 0 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 333 & 2 & 1 & 237 & 0 & 1 & 1 & 0 & 1 & 0 & 0 \\
\hline Total Analysis Volume [veh/h] & 4 & 1330 & 7 & 2 & 949 & 1 & 2 & 2 & 1 & 6 & 0 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 88 & 0 & 11 & 88 & 0 & 0 & 21 & 0 & 0 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 1 & 106 & 0 & 106 & 106 & 1 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.01 & 0.88 & 0.00 & 0.88 & 0.88 & 0.01 & 0.01 & 0.01 & 0.01 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.00 & 0.80 & 0.00 & 0.30 & 0.00 & 0.05 & 0.00 & 0.08 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 84 & 1425 & 79 & 1425 \\
\hline c, Capacity [veh/h] & 24 & 1479 & 7 & 2808 & 1253 & 46 & 18 & 61 & 18 \\
\hline d1, Uniform Delay [s] & 59.13 & 4.06 & 59.55 & 1.24 & 0.87 & 59.97 & 58.52 & 59.97 & 58.52 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.21 & 9.40 & 22.54 & 0.33 & 0.00 & 0.80 & 1.28 & 0.69 & 1.28 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.17 & 0.90 & 0.30 & 0.34 & 0.00 & 0.09 & 0.06 & 0.10 & 0.06 \\
\hline d, Delay for Lane Group [s/veh] & 62.35 & 13.46 & 82.09 & 1.56 & 0.87 & 60.77 & 59.80 & 60.67 & 59.80 \\
\hline Lane Group LOS & E & B & F & A & A & E & E & E & E \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 0.07 & 3.86 & 0.10 & 0.13 & 0.00 & 0.13 & 0.04 & 0.20 & 0.04 \\
\hline 50th-Percentile Queue Length [ft] & 1.70 & 96.54 & 2.50 & 3.19 & 0.01 & 3.31 & 0.91 & 4.88 & 0.91 \\
\hline 95th-Percentile Queue Length [veh] & 0.12 & 6.95 & 0.18 & 0.23 & 0.00 & 0.24 & 0.07 & 0.35 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 3.06 & 173.78 & 4.49 & 5.74 & 0.02 & 5.95 & 1.64 & 8.78 & 1.64 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 62.35 & 13.46 & 13.46 & 82.09 & 1.56 & 0.87 & 60.77 & 60.77 & 59.80 & 60.67 & 60.67 & 59.80 \\
\hline Movement LOS & E & B & B & F & A & A & E & E & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.60} & \multicolumn{3}{|c|}{1.73} & \multicolumn{3}{|c|}{60.58} & \multicolumn{3}{|c|}{60.54} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{A} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{8.94} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{A} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.973} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15
\begin{tabular}{cc} 
Delay (sec / veh): & 15.2 \\
Level Of Service: & B \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.685
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 24 & 0 & 0 & 0 & 0 & 6 & 9 & 6 & 30 & 0 & 4 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 40 & 1161 & 139 & 35 & 809 & 22 & 24 & 11 & 48 & 94 & 11 & 25 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 11 & 321 & 38 & 10 & 223 & 6 & 7 & 3 & 13 & 26 & 3 & 7 \\
\hline Total Analysis Volume [veh/h] & 44 & 1283 & 154 & 39 & 894 & 24 & 27 & 12 & 53 & 104 & 12 & 28 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|r|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 19 & 19 & 0 & 21 & 21 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 39 & 39 & 4 & 39 & 39 & 3 & 5 & 5 & 6 & 8 & 8 \\
\hline g / C, Green / Cycle & 0.06 & 0.56 & 0.56 & 0.05 & 0.55 & 0.55 & 0.04 & 0.07 & 0.07 & 0.09 & 0.12 & 0.12 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.03 & 0.40 & 0.11 & 0.02 & 0.28 & 0.02 & 0.02 & 0.01 & 0.04 & 0.07 & 0.01 & 0.02 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 95 & 1771 & 791 & 88 & 1757 & 785 & 69 & 123 & 105 & 141 & 200 & 170 \\
\hline d1, Uniform Delay [s] & 31.95 & 11.64 & 7.80 & 32.14 & 9.86 & 7.22 & 32.73 & 30.37 & 31.32 & 31.22 & 27.45 & 27.80 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.46 & 2.62 & 0.55 & 3.44 & 1.06 & 0.07 & 3.63 & 0.34 & 3.73 & 7.22 & 0.12 & 0.45 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.46 & 0.72 & 0.19 & 0.44 & 0.51 & 0.03 & 0.39 & 0.10 & 0.51 & 0.74 & 0.06 & 0.16 \\
\hline d, Delay for Lane Group [s/veh] & 35.41 & 14.25 & 8.35 & 35.58 & 10.91 & 7.29 & 36.36 & 30.71 & 35.05 & 38.43 & 27.58 & 28.26 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.72 & 5.09 & 0.84 & 0.64 & 2.89 & 0.12 & 0.50 & 0.20 & 0.94 & 1.86 & 0.17 & 0.41 \\
\hline 50th-Percentile Queue Length [ft] & 17.97 & 127.36 & 20.93 & 16.05 & 72.16 & 2.98 & 12.56 & 4.88 & 23.61 & 46.60 & 4.28 & 10.25 \\
\hline 95th-Percentile Queue Length [veh] & 1.29 & 8.80 & 1.51 & 1.16 & 5.20 & 0.21 & 0.90 & 0.35 & 1.70 & 3.35 & 0.31 & 0.74 \\
\hline 95th-Percentile Queue Length [ft] & 32.34 & 219.90 & 37.68 & 28.88 & 129.89 & 5.36 & 22.61 & 8.78 & 42.49 & 83.87 & 7.71 & 18.45 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.41 & 14.25 & 8.35 & 35.58 & 10.91 & 7.29 & 36.36 & 30.71 & 35.05 & 38.43 & 27.58 & 28.26 \\
\hline Movement LOS & D & B & A & D & B & A & D & C & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{14.27} & \multicolumn{3}{|c|}{11.83} & \multicolumn{3}{|c|}{34.87} & \multicolumn{3}{|c|}{35.55} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.25} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.685} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
17.8

B
0.727

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{77浐} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{7 | \({ }^{\text {F }}\)} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 14 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 12 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1267 & 178 & 100 & 949 & 8 & 6 & 15 & 25 & 122 & 27 & 72 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 352 & 49 & 28 & 264 & 2 & 2 & 4 & 7 & 34 & 8 & 20 \\
\hline Total Analysis Volume [veh/h] & 27 & 1408 & 198 & 111 & 1054 & 9 & 7 & 17 & 28 & 136 & 30 & 80 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 80 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 38 & 0 & 11 & 38 & 0 & 11 & 11 & 0 & 20 & 20 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 3 & 45 & 45 & 6 & 48 & 48 & 1 & 4 & 4 & 8 & 12 & 12 \\
\hline g / C, Green / Cycle & 0.04 & 0.56 & 0.56 & 0.08 & 0.60 & 0.60 & 0.01 & 0.06 & 0.06 & 0.11 & 0.15 & 0.15 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.44 & 0.14 & 0.04 & 0.33 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.06 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 66 & 1775 & 792 & 252 & 1903 & 849 & 23 & 95 & 81 & 170 & 250 & 212 \\
\hline d1, Uniform Delay [s] & 37.51 & 14.15 & 9.18 & 35.11 & 9.77 & 6.59 & 39.15 & 36.06 & 36.41 & 35.00 & 29.57 & 30.77 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.05 & 3.74 & 0.76 & 1.21 & 1.17 & 0.02 & 7.48 & 0.89 & 2.53 & 8.33 & 0.21 & 1.10 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.41 & 0.79 & 0.25 & 0.44 & 0.55 & 0.01 & 0.31 & 0.18 & 0.35 & 0.80 & 0.12 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 41.56 & 17.89 & 9.94 & 36.32 & 10.94 & 6.61 & 46.63 & 36.95 & 38.94 & 43.33 & 29.79 & 31.87 \\
\hline Lane Group LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 0.55 & 8.25 & 1.50 & 0.99 & 4.18 & 0.05 & 0.18 & 0.34 & 0.58 & 2.92 & 0.51 & 1.43 \\
\hline 50th-Percentile Queue Length [ft] & 13.75 & 206.35 & 37.61 & 24.71 & 104.54 & 1.25 & 4.57 & 8.46 & 14.52 & 73.08 & 12.64 & 35.67 \\
\hline 95th-Percentile Queue Length [veh] & 0.99 & 12.97 & 2.71 & 1.78 & 7.53 & 0.09 & 0.33 & 0.61 & 1.05 & 5.26 & 0.91 & 2.57 \\
\hline 95th-Percentile Queue Length [ft] & 24.75 & 324.14 & 67.70 & 44.47 & 188.17 & 2.25 & 8.22 & 15.24 & 26.14 & 131.55 & 22.75 & 64.21 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 41.56 & 17.89 & 9.94 & 36.32 & 10.94 & 6.61 & 46.63 & 36.95 & 38.94 & 43.33 & 29.79 & 31.87 \\
\hline Movement LOS & D & B & A & D & B & A & D & D & D & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{17.32} & \multicolumn{3}{|c|}{13.30} & \multicolumn{3}{|c|}{39.32} & \multicolumn{3}{|c|}{37.95} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{17.80} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.727} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
14.3

B
0.815

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 12 & 0 & 0 & 16 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & , & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 154 & 1344 & 5 & 2 & 911 & 47 & 92 & 1 & 85 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 44 & 383 & 1 & 1 & 259 & 13 & 26 & 0 & 24 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 175 & 1531 & 6 & 2 & 1038 & 54 & 105 & 1 & 97 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 70 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 19 & 29 & 0 & 11 & 21 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 7 & 27 & 27 & 0 & 20 & 20 & 5 & 6 & 6 & 1 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.14 & 0.55 & 0.55 & 0.00 & 0.41 & 0.41 & 0.11 & 0.12 & 0.12 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.48 & 0.00 & 0.00 & 0.33 & 0.04 & 0.07 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 226 & 1741 & 777 & 6 & 1303 & 582 & 173 & 202 & 171 & 18 & 40 & 34 \\
\hline d1, Uniform Delay [s] & 20.79 & 9.97 & 5.21 & 24.93 & 13.03 & 9.14 & 21.37 & 19.44 & 20.84 & 24.62 & 23.96 & 24.11 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.65 & 1.58 & 0.00 & 24.88 & 1.16 & 0.07 & 3.43 & 0.01 & 2.91 & 9.86 & 0.52 & 5.48 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.88 & 0.01 & 0.31 & 0.80 & 0.09 & 0.61 & 0.00 & 0.57 & 0.33 & 0.05 & 0.33 \\
\hline d, Delay for Lane Group [s/veh] & 26.43 & 11.55 & 5.21 & 49.81 & 14.18 & 9.21 & 24.80 & 19.45 & 23.76 & 34.48 & 24.48 & 29.60 \\
\hline Lane Group LOS & C & B & A & D & B & A & C & B & C & C & C & C \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 1.91 & 3.78 & 0.01 & 0.06 & 3.44 & 0.25 & 1.23 & 0.01 & 1.11 & 0.12 & 0.03 & 0.17 \\
\hline 50th-Percentile Queue Length [ft] & 47.81 & 94.40 & 0.37 & 1.61 & 86.11 & 6.18 & 30.86 & 0.25 & 27.81 & 2.90 & 0.68 & 4.25 \\
\hline 95th-Percentile Queue Length [veh] & 3.44 & 6.80 & 0.03 & 0.12 & 6.20 & 0.44 & 2.22 & 0.02 & 2.00 & 0.21 & 0.05 & 0.31 \\
\hline 95th-Percentile Queue Length [ft] & 86.07 & 169.91 & 0.66 & 2.90 & 155.00 & 11.12 & 55.55 & 0.45 & 50.05 & 5.22 & 1.22 & 7.65 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 26.43 & 11.55 & 5.21 & 49.81 & 14.18 & 9.21 & 24.80 & 19.45 & 23.76 & 34.48 & 24.48 & 29.60 \\
\hline Movement LOS & C & B & A & D & B & A & C & B & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.05} & \multicolumn{3}{|c|}{14.00} & \multicolumn{3}{|c|}{24.27} & \multicolumn{3}{|c|}{30.60} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{14.26} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.815} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
184.7

F 1.360

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 6 & 0 & 6 & 7 & 3 & 2 & 0 & 0 & 0 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 454 & 1408 & 208 & 35 & 872 & 66 & 79 & 181 & 562 & 176 & 138 & 25 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 126 & 391 & 58 & 10 & 242 & 18 & 22 & 50 & 156 & 49 & 38 & 7 \\
\hline Total Analysis Volume [veh/h] & 504 & 1563 & 231 & 39 & 968 & 73 & 88 & 201 & 624 & 195 & 153 & 28 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 32 & 52 & 0 & 11 & 31 & 0 & 43 & 42 & 42 & 15 & 14 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 28 & 50 & 50 & 5 & 27 & 27 & 8 & 38 & 38 & 11 & 41 \\
\hline g / C, Green / Cycle & 0.23 & 0.42 & 0.42 & 0.04 & 0.23 & 0.23 & 0.07 & 0.32 & 0.32 & 0.09 & 0.34 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.32 & 0.54 & 0.56 & 0.02 & 0.30 & 0.05 & 0.06 & 0.12 & 0.44 & 0.12 & 0.11 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1604 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1632 \\
\hline c, Capacity [veh/h] & 373 & 699 & 668 & 68 & 721 & 322 & 110 & 529 & 450 & 146 & 553 \\
\hline d1, Uniform Delay [s] & 46.00 & 35.00 & 35.00 & 56.39 & 46.45 & 37.90 & 55.09 & 31.92 & 41.05 & 54.50 & 29.50 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 175.54 & 138.51 & 163.94 & 7.48 & 163.42 & 1.63 & 12.69 & 0.45 & 187.33 & 188.53 & 0.34 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.35 & 1.28 & 1.34 & 0.58 & 1.34 & 0.23 & 0.80 & 0.38 & 1.39 & 1.33 & 0.33 \\
\hline d, Delay for Lane Group [s/veh] & 221.54 & 173.51 & 198.94 & 63.87 & 209.87 & 39.53 & 67.78 & 32.36 & 228.39 & 243.03 & 29.84 \\
\hline Lane Group LOS & F & F & F & E & F & D & E & C & F & F & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 28.63 & 45.37 & 48.12 & 1.26 & 26.51 & 1.82 & 3.01 & 4.61 & 36.51 & 12.08 & 3.95 \\
\hline 50th-Percentile Queue Length [ft] & 715.76 & 1134.22 & 1202.95 & 31.40 & 662.86 & 45.58 & 75.23 & 115.32 & 912.75 & 302.03 & 98.72 \\
\hline 95th-Percentile Queue Length [veh] & 43.46 & 66.36 & 71.56 & 2.26 & 40.39 & 3.28 & 5.42 & 8.14 & 55.50 & 19.58 & 7.11 \\
\hline 95th-Percentile Queue Length [ft] & 1086.58 & 1659.01 & 1789.05 & 56.52 & 1009.86 & 82.04 & 135.41 & 203.38 & 1387.61 & 489.55 & 177.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 221.54 & 184.34 & 198.94 & 63.87 & 209.87 & 39.53 & 67.78 & 32.36 & 228.39 & 243.03 & 29.84 & 29.84 \\
\hline Movement LOS & F & F & F & E & F & D & E & C & F & F & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{193.97} & \multicolumn{3}{|c|}{193.08} & \multicolumn{3}{|c|}{169.75} & \multicolumn{3}{|c|}{140.41} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{184.71} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.360} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Generated with PTV VISTRO}

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 98.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.247
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\|\|
\]} & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 0 & 4 & 3 & 0 & 4 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1610 & 408 & 331 & 1268 & 316 & 473 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 433 & 110 & 89 & 341 & 85 & 127 \\
\hline Total Analysis Volume [veh/h] & 1731 & 439 & 356 & 1363 & 340 & 509 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & 0 \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 56 & 0 & 26 & 82 & 38 & 38 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 52 & 52 & 22 & 78 & 34 & 34 \\
\hline g / C, Green / Cycle & 0.43 & 0.43 & 0.18 & 0.65 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.54 & 0.31 & 0.22 & 0.43 & 0.11 & 0.36 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1382 & 617 & 293 & 2075 & 879 & 404 \\
\hline d1, Uniform Delay [s] & 34.01 & 27.87 & 48.95 & 12.83 & 34.59 & 42.97 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 119.88 & 6.84 & 123.36 & 1.64 & 0.28 & 135.85 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.25 & 0.71 & 1.21 & 0.66 & 0.39 & 1.26 \\
\hline d, Delay for Lane Group [s/veh] & 153.89 & 34.72 & 172.31 & 14.47 & 34.87 & 178.82 \\
\hline Lane Group LOS & F & C & F & B & F & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 41.12 & 10.61 & 18.38 & 9.57 & 4.04 & 27.07 \\
\hline 50th-Percentile Queue Length [ft] & 1028.00 & 265.17 & 459.55 & 239.13 & 101.08 & 676.72 \\
\hline 95th-Percentile Queue Length [veh] & 60.00 & 15.95 & 27.88 & 14.64 & 7.28 & 40.50 \\
\hline 95th-Percentile Queue Length [ft] & 1500.03 & 398.70 & 697.07 & 365.93 & 181.94 & 1012.50 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 153.89 & 34.72 & 172.31 & 14.47 & 34.87 & 178.82 \\
\hline Movement LOS & F & C & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{129.78} & \multicolumn{2}{|c|}{47.16} & \multicolumn{2}{|c|}{121.17} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{98.26} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.247} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.018
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 45 & 13 & 0 & 34 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 85 & 49 & 14 & 28 & 39 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 29 & 17 & 5 & 10 & 13 \\
\hline Total Analysis Volume [veh/h] & 14 & 116 & 67 & 19 & 38 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.12 & 0.00 & 0.00 & 0.03 & 0.00 \\
\hline d_M, Delay for Movement [s/veh] & 10.31 & 9.25 & 0.00 & 0.00 & 7.45 & 0.00 \\
\hline Movement LOS & B & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.47 & 0.47 & 0.00 & 0.00 & 0.08 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 11.77 & 11.77 & 0.00 & 0.00 & 1.93 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{9.36} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.11} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.89} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 9.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & A \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.004
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 1 & 4 & 0 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 0 & 1 & 42 & 0 & 2 & 39 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 0 & 0 & 14 & 0 & 1 & 13 \\
\hline Total Analysis Volume [veh/h] & 0 & 1 & 57 & 0 & 3 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.00 & 0.05 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.30 & 0.00 & 9.42 & 8.51 \\
\hline Movement LOS & A & A & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.11 & 0.00 & 0.17 & 0.17 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.73 & 0.00 & 4.14 & 4.14 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{7.30} & \multicolumn{2}{|c|}{8.56} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.85} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{A} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 9 & 10 & 3 & 2 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 198 & 143 & 89 & 108 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 74 & 53 & 33 & 40 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 295 & 213 & 133 & 161 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.58 & 1.04 & 1.04 & 1.31 & 1.17 & 1.34 & 0.77 \\
\hline 95th-Percentile Queue Length [ft] & 14.61 & 26.02 & 26.02 & 32.83 & 29.13 & 33.40 & 19.27 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.23} & \multicolumn{2}{|c|}{11.48} & \multicolumn{2}{|c|}{11.67} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{B} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{11.44} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{B} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 18.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 4 & 0 & 0 & 5 & 2 & 2 & 0 & 0 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 139 & 260 & 7 & 3 & 189 & 60 & 82 & 4 & 101 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 78 & 2 & 1 & 57 & 18 & 25 & 1 & 30 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 167 & 313 & 8 & 4 & 227 & 72 & 99 & 5 & 121 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 7.31 & 2.65 & 0.74 & 0.03 & 0.76 & 0.07 \\
\hline 95th-Percentile Queue Length [ft] & 182.71 & 66.30 & 18.47 & 0.71 & 18.90 & 1.75 \\
\hline Approach Delay [s/veh] & 25.57 & 14.07 & \multicolumn{3}{|c|}{10.93} & 10.64 \\
\hline Approach LOS & D & B & B \\
\hline Intersection Delay [s/veh] & C & \multicolumn{4}{|c|}{} \\
\hline Intersection LOS & &
\end{tabular}

\section*{Appendix G. Intersection Volumes, Delay, and LOS Calculation Outputs, 2018 No Project Conditions}

Version 4.00-03
Traffic Volume - Future Total Volume


Version 4.00-03
Traffic Volume - Future Total Volume


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\E+A+C AM_new.pdf

Scenario 9: \(E+A+C\) AM
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & \begin{tabular}{c} 
Winchester Road at Keller \\
Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.704 & 20.5 & C \\
\hline 2 & \begin{tabular}{c} 
Winchester Road at Pourroy \\
Road/Abelia Street
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.075 & 71.5 & E \\
\hline 3 & \begin{tabular}{c} 
Winchester Road at Whisper \\
Heights Parkway/Pourroy \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 0.863 & 32.3 & C \\
\hline 4 & \begin{tabular}{c} 
Winchester Road at Jean \\
Nicholas Road/Skyview Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.819 & 19.6 & B \\
\hline 5 & \begin{tabular}{c} 
Winchester Road at Max \\
Gillis Boulevard/Thompson \\
Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 1.602 & 214.6 & F
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 6 & \begin{tabular}{c} 
Winchester Road at Benton \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Right & 0.959 & 40.5 & D \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 27.7 & D \\
\hline 8 & \begin{tabular}{c} 
Jean Nicholas Road at Elliot \\
Road
\end{tabular} & Two-way stop & HCM 2010 & WB Left & 0.252 & 25.4 & D \\
\hline 9 & \begin{tabular}{c} 
Pourroy Road at Skyview \\
Road
\end{tabular} & All-way stop & HCM 2010 & EB Left & & 17.0 & C \\
\hline 10 & \begin{tabular}{c} 
Pourroy Road at Thompson \\
Road
\end{tabular} & All-way stop & HCM 2010 & NB Thru & & 22.9 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
20.5

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):\({ }^{-}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 323 & 51 & 0 & 0 & 49 & 8 & 2 & 11 & 98 & 0 & 38 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 324 & 755 & 3 & 0 & 1149 & 11 & 3 & 12 & 102 & 8 & 38 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 90 & 211 & 1 & 0 & 321 & 3 & 1 & 3 & 28 & 2 & 11 & 1 \\
\hline Total Analysis Volume [veh/h] & 362 & 843 & 3 & 0 & 1282 & 12 & 3 & 13 & 114 & 9 & 42 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 42 & 23 & 0 & 38 & 19 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 12 & 53 & 0 & 41 & 41 & 15 & 15 & 15 & 15 \\
\hline g / C, Green / Cycle & 0.15 & 0.66 & 0.00 & 0.51 & 0.51 & 0.19 & 0.19 & 0.19 & 0.19 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.12 & 0.50 & 0.00 & 0.40 & 0.01 & 0.02 & 0.08 & 0.06 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 770 & 1425 & 805 & 1425 \\
\hline c, Capacity [veh/h] & 464 & 1113 & 0 & 1644 & 734 & 196 & 264 & 202 & 264 \\
\hline d1, Uniform Delay [s] & 32.75 & 9.09 & 0.00 & 15.73 & 9.49 & 27.20 & 28.85 & 27.75 & 26.60 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 2.89 & 4.89 & 0.00 & 3.74 & 0.04 & 0.18 & 1.11 & 0.65 & 0.02 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.76 & 0.00 & 0.78 & 0.02 & 0.08 & 0.43 & 0.25 & 0.01 \\
\hline d, Delay for Lane Group [s/veh] & 35.64 & 13.98 & 0.00 & 19.47 & 9.53 & 27.38 & 29.96 & 28.39 & 26.61 \\
\hline Lane Group LOS & D & B & A & B & A & C & C & C & C & C \\
\hline Critical Lane Group & Yes & No & No & Yes & No & No & Yes & No & No \\
\hline \hline 50th-Percentile Queue Length [veh] & 3.14 & 6.64 & 0.00 & 7.63 & 0.08 & 0.26 & 1.96 & 0.84 & 0.05 \\
\hline 50th-Percentile Queue Length [ft] & 78.54 & 165.98 & 0.00 & 190.71 & 2.12 & 6.38 & 49.11 & 20.89 & 1.17 \\
\hline 95th-Percentile Queue Length [veh] & 5.65 & 10.86 & 0.00 & 12.16 & 0.15 & 0.46 & 3.54 & 1.50 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 141.37 & 271.62 & 0.00 & 303.95 & 3.82 & 11.48 & 88.40 & 37.60 & 2.11 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.64 & 13.98 & 13.98 & 0.00 & 19.47 & 9.53 & 27.38 & 27.38 & 29.96 & 28.39 & 28.39 & 26.61 \\
\hline Movement LOS & D & B & B & A & B & A & C & C & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{20.47} & \multicolumn{3}{|c|}{19.37} & \multicolumn{3}{|c|}{29.64} & \multicolumn{3}{|c|}{28.29} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{20.55} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.704} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes
\(\begin{array}{cc}\text { Delay (sec / veh): } & 71.5 \\ \text { Level Of Service: } & \text { E } \\ \text { Volume to Capacity }(\mathrm{v} / \mathrm{c}): & 1.075\end{array}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{T\|F} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 294 & 283 & 2 & 19 & 86 & 42 & 34 & 53 & 238 & 2 & 62 & 57 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 319 & 908 & 170 & 91 & 1081 & 99 & 74 & 68 & 270 & 185 & 74 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 88 & 251 & 47 & 25 & 299 & 27 & 20 & 19 & 75 & 51 & 20 & 32 \\
\hline Total Analysis Volume [veh/h] & 352 & 1003 & 188 & 101 & 1194 & 109 & 82 & 75 & 298 & 204 & 82 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 29 & 56 & 0 & 18 & 45 & 0 & 27 & 28 & 0 & 18 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 25 & 57 & 57 & 9 & 41 & 41 & 8 & 24 & 24 & 14 & 30 & 30 \\
\hline g / C, Green / Cycle & 0.21 & 0.47 & 0.47 & 0.08 & 0.34 & 0.34 & 0.06 & 0.20 & 0.20 & 0.12 & 0.25 & 0.25 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.22 & 0.31 & 0.13 & 0.06 & 0.37 & 0.08 & 0.05 & 0.04 & 0.21 & 0.13 & 0.05 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 333 & 1515 & 676 & 123 & 1096 & 489 & 102 & 332 & 283 & 186 & 421 & 358 \\
\hline d1, Uniform Delay [s] & 47.51 & 24.15 & 19.08 & 54.58 & 39.41 & 28.02 & 55.42 & 40.38 & 48.11 & 53.00 & 35.39 & 37.01 \\
\hline k, delay calibration & 0.48 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.47 & 0.47 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 64.73 & 2.29 & 1.02 & 12.66 & 55.01 & 1.05 & 13.42 & 0.34 & 67.21 & 91.10 & 0.22 & 0.61 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.06 & 0.66 & 0.28 & 0.82 & 1.09 & 0.22 & 0.80 & 0.23 & 1.05 & 1.09 & 0.19 & 0.36 \\
\hline d, Delay for Lane Group [s/veh] & 112.23 & 26.44 & 20.10 & 67.24 & 94.42 & 29.08 & 68.84 & 40.72 & 115.32 & 144.10 & 35.61 & 37.62 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 15.19 & 10.03 & 3.02 & 3.27 & 22.92 & 2.20 & 2.83 & 1.90 & 13.67 & 10.18 & 1.87 & 3.09 \\
\hline 50th-Percentile Queue Length [ft] & 379.72 & 250.75 & 75.49 & 81.68 & 572.99 & 55.03 & 70.72 & 47.53 & 341.72 & 254.55 & 46.72 & 77.31 \\
\hline 95th-Percentile Queue Length [veh] & 22.25 & 15.22 & 5.43 & 5.88 & 32.56 & 3.96 & 5.09 & 3.42 & 20.29 & 16.00 & 3.36 & 5.57 \\
\hline 95th-Percentile Queue Length [ft] & 556.30 & 380.60 & 135.87 & 147.02 & 813.92 & 99.06 & 127.30 & 85.55 & 507.33 & 399.90 & 84.10 & 139.16 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 112.23 & 26.44 & 20.10 & 67.24 & 94.42 & 29.08 & 68.84 & 40.72 & 115.32 & 144.10 & 35.61 & 37.62 \\
\hline Movement LOS & F & C & C & E & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{45.24} & \multicolumn{3}{|c|}{87.39} & \multicolumn{3}{|c|}{94.65} & \multicolumn{3}{|c|}{89.57} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{71.45} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{E} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.075} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
32.3

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):C
0.863

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7711 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 379 & 2 & 114 & 212 & 0 & 0 & 0 & 0 & 2 & 0 & 200 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1108 & 79 & 162 & 1376 & 12 & 18 & 10 & 12 & 152 & 21 & 279 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 308 & 22 & 45 & 382 & 3 & 5 & 3 & 3 & 42 & 6 & 78 \\
\hline Total Analysis Volume [veh/h] & 26 & 1231 & 88 & 180 & 1529 & 13 & 20 & 11 & 13 & 169 & 23 & 310 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 100 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 41 & 0 & 11 & 41 & 0 & 11 & 32 & 0 & 16 & 37 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 50 & 50 & 7 & 53 & 53 & 3 & 15 & 15 & 12 & 24 & 24 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.07 & 0.53 & 0.53 & 0.03 & 0.15 & 0.15 & 0.12 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.39 & 0.06 & 0.06 & 0.48 & 0.01 & 0.01 & 0.01 & 0.01 & 0.11 & 0.01 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 59 & 1591 & 710 & 220 & 1698 & 758 & 50 & 252 & 214 & 192 & 402 & 342 \\
\hline d1, Uniform Delay [s] & 47.18 & 20.50 & 13.43 & 45.90 & 21.05 & 11.07 & 47.60 & 36.38 & 36.47 & 43.31 & 29.33 & 36.97 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.31 & 0.11 & 0.16 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.99 & 3.73 & 0.36 & 7.39 & 8.11 & 0.04 & 5.20 & 0.07 & 0.12 & 27.72 & 0.06 & 12.37 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.44 & 0.77 & 0.12 & 0.82 & 0.90 & 0.02 & 0.40 & 0.04 & 0.06 & 0.88 & 0.06 & 0.91 \\
\hline d, Delay for Lane Group [s/veh] & 52.17 & 24.24 & 13.78 & 53.29 & 29.16 & 11.11 & 52.80 & 36.45 & 36.59 & 71.03 & 29.39 & 49.34 \\
\hline Lane Group LOS & D & C & B & D & C & B & D & D & D & E & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.68 & 10.73 & 1.00 & 2.31 & 15.05 & 0.13 & 0.56 & 0.24 & 0.28 & 5.56 & 0.43 & 8.41 \\
\hline 50th-Percentile Queue Length [ft] & 17.10 & 268.30 & 24.95 & 57.76 & 376.16 & 3.15 & 14.09 & 5.93 & 7.05 & 138.97 & 10.80 & 210.16 \\
\hline 95th-Percentile Queue Length [veh] & 1.23 & 16.10 & 1.80 & 4.16 & 21.41 & 0.23 & 1.01 & 0.43 & 0.51 & 9.43 & 0.78 & 13.16 \\
\hline 95th-Percentile Queue Length [ft] & 30.78 & 402.61 & 44.92 & 103.96 & 535.20 & 5.68 & 25.36 & 10.67 & 12.70 & 235.64 & 19.45 & 329.03 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 52.17 & 24.24 & 13.78 & 53.29 & 29.16 & 11.11 & 52.80 & 36.45 & 36.59 & 71.03 & 29.39 & 49.34 \\
\hline Movement LOS & D & C & B & D & C & B & D & D & D & E & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{24.09} & \multicolumn{3}{|c|}{31.55} & \multicolumn{3}{|c|}{43.92} & \multicolumn{3}{|c|}{55.73} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{32.28} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.863} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
19.6

B
0.819

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 301 & 0 & 0 & 169 & 45 & 80 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 90 & 988 & 4 & 6 & 1457 & 139 & 139 & 4 & 126 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 26 & 281 & 1 & 2 & 415 & 40 & 40 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 103 & 1125 & 5 & 7 & 1659 & 158 & 158 & 5 & 144 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 100 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 12 & 41 & 0 & 11 & 40 & 0 & 29 & 37 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 8 & 69 & 69 & 1 & 62 & 62 & 12 & 13 & 13 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.08 & 0.69 & 0.69 & 0.01 & 0.62 & 0.62 & 0.12 & 0.13 & 0.13 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.35 & 0.00 & 0.00 & 0.52 & 0.11 & 0.10 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 127 & 2197 & 981 & 21 & 1985 & 886 & 189 & 223 & 189 & 10 & 34 & 29 \\
\hline d1, Uniform Delay [s] & 45.34 & 7.51 & 4.88 & 48.96 & 14.89 & 8.05 & 43.15 & 37.75 & 41.86 & 49.51 & 48.15 & 48.24 \\
\hline k, delay calibration & 0.22 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 21.89 & 0.86 & 0.01 & 9.27 & 4.36 & 0.44 & 9.27 & 0.04 & 6.20 & 16.26 & 1.92 & 4.16 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.81 & 0.51 & 0.01 & 0.34 & 0.84 & 0.18 & 0.84 & 0.02 & 0.76 & 0.30 & 0.15 & 0.24 \\
\hline d, Delay for Lane Group [s/veh] & 67.24 & 8.37 & 4.89 & 58.23 & 19.25 & 8.49 & 52.42 & 37.79 & 48.06 & 65.77 & 50.07 & 52.40 \\
\hline Lane Group LOS & E & A & A & E & B & A & D & D & D & E & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 3.14 & 4.28 & 0.03 & 0.22 & 12.37 & 1.26 & 4.28 & 0.11 & 3.73 & 0.12 & 0.14 & 0.20 \\
\hline 50th-Percentile Queue Length [ft] & 78.62 & 106.91 & 0.64 & 5.45 & 309.19 & 31.43 & 106.94 & 2.72 & 93.13 & 2.98 & 3.51 & 5.12 \\
\hline 95th-Percentile Queue Length [veh] & 5.66 & 7.67 & 0.05 & 0.39 & 18.14 & 2.26 & 7.67 & 0.20 & 6.71 & 0.21 & 0.25 & 0.37 \\
\hline 95th-Percentile Queue Length [ft] & 141.52 & 191.69 & 1.16 & 9.81 & 453.38 & 56.58 & 191.74 & 4.90 & 167.63 & 5.36 & 6.32 & 9.22 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 67.24 & 8.37 & 4.89 & 58.23 & 19.25 & 8.49 & 52.42 & 37.79 & 48.06 & 65.77 & 50.07 & 52.40 \\
\hline Movement LOS & E & A & A & E & B & A & D & D & D & E & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.27} & \multicolumn{3}{|c|}{18.47} & \multicolumn{3}{|c|}{50.14} & \multicolumn{3}{|c|}{54.30} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{19.61} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.819} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
214.6

F
1.602

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 59 & 136 & 0 & 45 & 74 & 51 & 86 & 3 & 22 & 0 & 3 & 80 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 432 & 816 & 99 & 67 & 1400 & 141 & 155 & 126 & 578 & 217 & 245 & 98 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 120 & 226 & 27 & 19 & 388 & 39 & 43 & 35 & 160 & 60 & 68 & 27 \\
\hline Total Analysis Volume [veh/h] & 479 & 906 & 110 & 74 & 1554 & 156 & 172 & 140 & 642 & 241 & 272 & 109 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 34 & 0 & 32 & 40 & 0 & 28 & 38 & 38 & 16 & 26 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 51 & 51 & 7 & 36 & 36 & 15 & 34 & 34 & 12 & 31 \\
\hline g / C, Green / Cycle & 0.18 & 0.43 & 0.43 & 0.06 & 0.30 & 0.30 & 0.12 & 0.28 & 0.28 & 0.10 & 0.26 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.31 & 0.31 & 0.05 & 0.49 & 0.11 & 0.11 & 0.08 & 0.45 & 0.15 & 0.24 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1614 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1596 \\
\hline c, Capacity [veh/h] & 293 & 715 & 688 & 93 & 961 & 429 & 198 & 473 & 402 & 160 & 4412 \\
\hline d1, Uniform Delay [s] & 49.00 & 28.49 & 28.63 & 55.82 & 41.93 & 32.91 & 51.60 & 33.74 & 43.08 & 54.00 & 43.39 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.39 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 301.32 & 6.18 & 6.64 & 14.31 & 282.28 & 2.38 & 10.93 & 0.35 & 280.16 & 258.38 & 24.60 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.64 & 0.72 & 0.73 & 0.80 & 1.62 & 0.36 & 0.87 & 0.30 & 1.60 & 1.51 & 0.92 \\
\hline d, Delay for Lane Group [s/veh] & 350.32 & 34.67 & 35.27 & 70.13 & 324.22 & 35.28 & 62.52 & 34.09 & 323.24 & 312.38 & 67.98 \\
\hline Lane Group LOS & F & C & D & E & F & D & E & C & F & F & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 32.82 & 12.46 & 12.25 & 2.49 & 50.96 & 3.66 & 5.67 & 3.26 & 43.06 & 16.28 & 13.74 \\
\hline 50th-Percentile Queue Length [ft] & 820.51 & 311.52 & 306.37 & 62.33 & 1273.94 & 91.57 & 141.85 & 81.44 & 1076.46 & 407.03 & 343.47 \\
\hline 95th-Percentile Queue Length [veh] & 51.34 & 18.25 & 18.00 & 4.49 & 79.07 & 6.59 & 9.58 & 5.86 & 67.18 & 26.18 & 19.82 \\
\hline 95th-Percentile Queue Length [ft] & 1283.39 & 456.25 & 449.90 & 112.19 & 1976.84 & 164.83 & 239.51 & 146.58 & 1679.60 & 654.57 & 495.44 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 350.32 & 34.93 & 35.27 & 70.13 & 324.22 & 35.28 & 62.52 & 34.09 & 323.24 & 312.38 & 67.98 & 67.98 \\
\hline Movement LOS & F & C & D & E & F & D & E & C & F & F & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{136.01} & \multicolumn{3}{|c|}{288.41} & \multicolumn{3}{|c|}{233.80} & \multicolumn{3}{|c|}{162.68} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{214.64} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.602} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 40.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.959
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 113 & 0 & 47 & 49 & 0 & 82 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1028 & 225 & 370 & 1813 & 389 & 335 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 276 & 60 & 99 & 487 & 105 & 90 \\
\hline Total Analysis Volume [veh/h] & 1105 & 242 & 398 & 1949 & 418 & 360 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 38 & 0 & 41 & 79 & 41 & 41 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 44 & 44 & 32 & 80 & 32 & 32 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.26 & 0.67 & 0.27 & 0.27 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.17 & 0.25 & 0.61 & 0.13 & 0.25 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1172 & 523 & 423 & 2124 & 831 & 382 \\
\hline d1, Uniform Delay [s] & 36.71 & 28.91 & 43.19 & 17.25 & 37.14 & 43.00 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.32 & 0.50 & 0.11 & 0.33 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 15.67 & 2.92 & 23.18 & 7.81 & 0.47 & 25.42 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.94 & 0.46 & 0.94 & 0.92 & 0.50 & 0.94 \\
\hline d, Delay for Lane Group [s/veh] & 52.38 & 31.84 & 66.37 & 25.05 & 37.62 & 68.42 \\
\hline Lane Group LOS & D & C & E & C & D & E \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 16.98 & 5.40 & 13.58 & 20.16 & 5.25 & 13.05 \\
\hline 50th-Percentile Queue Length [ft] & 424.49 & 135.05 & 339.41 & 504.07 & 131.23 & 326.37 \\
\hline 95th-Percentile Queue Length [veh] & 23.74 & 9.21 & 19.62 & 27.53 & 9.01 & 18.98 \\
\hline 95th-Percentile Queue Length [ft] & 593.44 & 230.35 & 490.48 & 688.17 & 225.16 & 474.51 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 52.38 & 31.84 & 66.37 & 25.05 & 37.62 & 68.42 \\
\hline Movement LOS & D & C & E & C & D & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{48.69} & \multicolumn{2}{|c|}{32.06} & \multicolumn{2}{|c|}{51.87} \\
\hline Approach LOS & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{40.51} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.959} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 27.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.018
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 325 & 0 & 0 & 398 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 82 & 329 & 3 & 92 & 401 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 28 & 112 & 1 & 31 & 137 \\
\hline Total Analysis Volume [veh/h] & 3 & 112 & 448 & 4 & 125 & 546 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.18 & 0.00 & 0.00 & 0.11 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 27.74 & 12.49 & 0.00 & 0.00 & 8.66 & 0.00 \\
\hline Movement LOS & D & B & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.75 & 0.75 & 0.00 & 0.00 & 0.38 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 18.68 & 18.68 & 0.00 & 0.00 & 9.50 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{12.89} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.61} \\
\hline Approach LOS & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.07} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec /veh): & 25.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.252
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 46 & 0 & 0 & 81 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 243 & 14 & 98 & 225 & 51 & 132 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 82 & 5 & 33 & 76 & 17 & 45 \\
\hline Total Analysis Volume [veh/h] & 328 & 19 & 132 & 304 & 69 & 178 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.11 & 0.00 & 0.25 & 0.25 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.33 & 0.00 & 25.44 & 17.38 \\
\hline Movement LOS & A & A & A & A & D & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.37 & 0.00 & 2.80 & 2.80 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 9.14 & 0.00 & 70.04 & 70.04 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.52} & \multicolumn{2}{|c|}{19.63} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{5.78} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): & Level Of Service: \\
Analysis Method: & HCM 2010 & & \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 160 & 91 & 23 & 40 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 279 & 244 & 123 & 158 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 104 & 91 & 46 & 59 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 416 & 364 & 183 & 235 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 1.05 & 2.16 & 2.16 & 3.47 & 3.08 & 3.09 & 1.17 \\
\hline 95th-Percentile Queue Length [ft] & 26.33 & 53.91 & 53.91 & 86.83 & 77.11 & 77.37 & 29.17 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.31} & \multicolumn{2}{|c|}{18.43} & \multicolumn{2}{|c|}{17.15} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{16.96} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 10: Pourroy Road at Thompson Road
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 22.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
t
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 80 & 0 & 0 & 45 & 24 & 41 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 120 & 253 & 0 & 1 & 299 & 90 & 87 & 3 & 116 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 76 & 0 & 0 & 90 & 27 & 26 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 144 & 304 & 0 & 1 & 359 & 108 & 105 & 4 & 139 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 6.91 & 7.13 & 0.85 & 0.02 & 0.98 & 0.10 \\
\hline 95th-Percentile Queue Length [ft] & 172.80 & 178.13 & 21.32 & 0.60 & 24.51 & 2.62 \\
\hline Approach Delay [s/veh] & 26.15 & 25.92 & \multicolumn{3}{|c|}{11.84} & 11.39 \\
\hline Approach LOS & D & D & \multicolumn{3}{|c|}{22.86} \\
\hline Intersection Delay [s/veh] & C \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Version 4.00-03
Traffic Volume - Future Total Volume


Version 4.00-03
Traffic Volume - Future Total Volume


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\E+A+C PM_new.pdf

Scenario 10: E+A+C PM
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & \begin{tabular}{c} 
Winchester Road at Keller \\
Road
\end{tabular} & Signalized & HCM 2010 & EB Right & 1.663 & 219.2 & F \\
\hline 2 & \begin{tabular}{c} 
Winchester Road at Pourroy \\
Road/Abelia Street
\end{tabular} & Signalized & HCM 2010 & NB Left & 1.539 & 208.1 & F \\
\hline 3 & \begin{tabular}{c} 
Winchester Road at Whisper \\
Heights Parkway/Pourroy \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.316 & 152.0 & F \\
\hline 4 & \begin{tabular}{c} 
Winchester Road at Jean \\
Nicholas Road/Skyview Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.948 & 39.6 & D \\
\hline 5 & \begin{tabular}{c} 
Winchester Road at Max \\
Gillis Boulevard/Thompson \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.592 & 258.7 & F \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 6 & \begin{tabular}{c} 
Winchester Road at Benton \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Right & 1.530 & 175.4 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.041 & 61.5 & F \\
\hline 8 & \begin{tabular}{c} 
Jean Nicholas Road at Elliot \\
Road
\end{tabular} & Two-way stop & HCM 2010 & WB Left & 0.181 & 24.4 & C \\
\hline 9 & \begin{tabular}{c} 
Pourroy Road at Skyview \\
Road
\end{tabular} & All-way stop & HCM 2010 & SB Thru & & 63.3 & F \\
\hline 10 & \begin{tabular}{c} 
Pourroy Road at Thompson \\
Road
\end{tabular} & All-way stop & HCM 2010 & NB Thru & & 81.5 & F \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03
Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
219.2
F
1.663

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 526 & 82 & 0 & 0 & 91 & 12 & 20 & 98 & 828 & 0 & 62 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 530 & 1268 & 3 & 2 & 937 & 13 & 22 & 100 & 829 & 3 & 62 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 354 & 1 & 1 & 261 & 4 & 6 & 28 & 231 & 1 & 17 & 0 \\
\hline Total Analysis Volume [veh/h] & 592 & 1415 & 3 & 2 & 1046 & 15 & 25 & 112 & 925 & 3 & 69 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 58 & 0 & 11 & 43 & 0 & 0 & 51 & 0 & 0 & 51 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 61 & 0 & 39 & 39 & 47 & 47 & 47 & 47 \\
\hline g / C, Green / Cycle & 0.18 & 0.50 & 0.00 & 0.33 & 0.33 & 0.39 & 0.39 & 0.39 & 0.39 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.19 & 0.85 & 0.00 & 0.33 & 0.01 & 0.15 & 0.65 & 0.04 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1676 & 1597 & 3192 & 1425 & 929 & 1425 & 1654 & 1425 \\
\hline c, Capacity [veh/h] & 569 & 846 & 7 & 1039 & 464 & 399 & 557 & 678 & 557 \\
\hline d1, Uniform Delay [s] & 48.97 & 29.70 & 59.55 & 40.46 & 27.58 & 26.00 & 36.54 & 23.25 & 22.27 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 29.15 & 309.42 & 22.54 & 29.53 & 0.13 & 0.51 & 305.17 & 0.07 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.04 & 1.68 & 0.30 & 1.01 & 0.03 & 0.34 & 1.66 & 0.11 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 78.12 & 339.12 & 82.09 & 69.99 & 27.70 & 26.51 & 341.71 & 23.32 & 22.27 \\
\hline Lane Group LOS & F & F & F & F & C & C & F & C & C \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 10.23 & 93.27 & 0.10 & 18.14 & 0.29 & 2.65 & 63.14 & 1.32 & 0.02 \\
\hline 50th-Percentile Queue Length [ft] & 255.67 & 2331.75 & 2.50 & 453.42 & 7.24 & 66.32 & 1578.39 & 33.05 & 0.44 \\
\hline 95th-Percentile Queue Length [veh] & 15.78 & 146.39 & 0.18 & 25.23 & 0.52 & 4.78 & 99.11 & 2.38 & 0.03 \\
\hline 95th-Percentile Queue Length [ft] & 394.44 & 3659.69 & 4.49 & 630.79 & 13.04 & 119.38 & 2477.83 & 59.49 & 0.79 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.12 & 339.12 & 339.12 & 82.09 & 69.99 & 27.70 & 26.51 & 26.51 & 341.71 & 23.32 & 23.32 & 22.27 \\
\hline Movement LOS & F & F & F & F & F & C & C & C & F & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{262.25} & \multicolumn{3}{|c|}{69.41} & \multicolumn{3}{|c|}{301.05} & \multicolumn{3}{|c|}{23.31} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{219.18} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.663} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes
Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
208.1
F
1.539

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 495 & 447 & 7 & 142 & 706 & 71 & 69 & 104 & 481 & 6 & 106 & 92 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 511 & 1608 & 146 & 177 & 1515 & 87 & 84 & 109 & 499 & 100 & 113 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 141 & 444 & 40 & 49 & 419 & 24 & 23 & 30 & 138 & 28 & 31 & 32 \\
\hline Total Analysis Volume [veh/h] & 565 & 1777 & 161 & 196 & 1674 & 96 & 93 & 120 & 551 & 110 & 125 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 31 & 61 & 0 & 14 & 44 & 0 & 26 & 34 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 57 & 57 & 10 & 40 & 40 & 9 & 30 & 30 & 7 & 28 & 28 \\
\hline g / C, Green / Cycle & 0.22 & 0.48 & 0.48 & 0.08 & 0.33 & 0.33 & 0.07 & 0.25 & 0.25 & 0.06 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.56 & 0.11 & 0.12 & 0.52 & 0.07 & 0.06 & 0.07 & 0.39 & 0.07 & 0.07 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 359 & 1519 & 678 & 133 & 1067 & 476 & 115 & 417 & 355 & 93 & 395 & 336 \\
\hline d1, Uniform Delay [s] & 46.50 & 31.44 & 18.58 & 55.00 & 39.94 & 28.51 & 54.90 & 36.45 & 45.06 & 56.50 & 37.88 & 38.55 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.44 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 270.83 & 83.82 & 0.82 & 248.77 & 260.55 & 0.95 & 12.73 & 0.38 & 262.22 & 143.62 & 0.46 & 0.72 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.57 & 1.17 & 0.24 & 1.47 & 1.57 & 0.20 & 0.81 & 0.29 & 1.55 & 1.18 & 0.32 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 317.33 & 115.26 & 19.40 & 303.77 & 300.50 & 29.46 & 67.62 & 36.82 & 307.28 & 200.11 & 38.34 & 39.27 \\
\hline Lane Group LOS & F & F & B & F & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 36.93 & 36.54 & 2.52 & 12.98 & 52.82 & 1.95 & 3.18 & 2.90 & 36.31 & 6.47 & 3.01 & 3.17 \\
\hline 50th-Percentile Queue Length [ft] & 923.14 & 913.42 & 62.90 & 324.57 & 1320.53 & 48.77 & 79.39 & 72.60 & 907.68 & 161.75 & 75.19 & 79.33 \\
\hline 95th-Percentile Queue Length [veh] & 57.29 & 52.01 & 4.53 & 21.25 & 81.62 & 3.51 & 5.72 & 5.23 & 56.57 & 11.16 & 5.41 & 5.71 \\
\hline 95th-Percentile Queue Length [ft] & 1432.27 & 1300.23 & 113.22 & 531.36 & 2040.57 & 87.78 & 142.91 & 130.69 & 1414.17 & 279.01 & 135.35 & 142.80 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 317.33 & 115.26 & 19.40 & 303.77 & 300.50 & 29.46 & 67.62 & 36.82 & 307.28 & 200.11 & 38.34 & 39.27 \\
\hline Movement LOS & F & F & B & F & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{154.71} & \multicolumn{3}{|c|}{287.59} & \multicolumn{3}{|c|}{235.63} & \multicolumn{3}{|c|}{87.55} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{208.06} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.539} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
152.0

F
1.316

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 618 & 10 & 416 & 777 & 0 & 0 & 0 & 0 & 9 & 0 & 331 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1873 & 188 & 502 & 1710 & 8 & 6 & 15 & 25 & 131 & 27 & 391 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 520 & 52 & 139 & 475 & 2 & 2 & 4 & 7 & 36 & 8 & 109 \\
\hline Total Analysis Volume [veh/h] & 27 & 2081 & 209 & 558 & 1900 & 9 & 7 & 17 & 28 & 146 & 30 & 434 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 59 & 0 & 20 & 68 & 0 & 11 & 29 & 0 & 12 & 30 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 55 & 55 & 16 & 67 & 67 & 1 & 25 & 25 & 8 & 31 & 31 \\
\hline g / C, Green / Cycle & 0.03 & 0.46 & 0.46 & 0.13 & 0.56 & 0.56 & 0.01 & 0.21 & 0.21 & 0.07 & 0.26 & 0.26 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.65 & 0.15 & 0.18 & 0.60 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.30 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 55 & 1468 & 655 & 413 & 1783 & 796 & 19 & 347 & 295 & 106 & 438 & 372 \\
\hline d1, Uniform Delay [s] & 56.88 & 32.40 & 20.51 & 52.00 & 26.48 & 11.76 & 58.81 & 38.14 & 38.51 & 56.00 & 33.34 & 44.33 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.19 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.53 & 191.95 & 1.28 & 163.37 & 41.23 & 0.03 & 10.89 & 0.06 & 0.14 & 215.55 & 0.07 & 99.98 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.49 & 1.42 & 0.32 & 1.35 & 1.07 & 0.01 & 0.36 & 0.05 & 0.10 & 1.37 & 0.07 & 1.17 \\
\hline d, Delay for Lane Group [s/veh] & 63.41 & 224.35 & 21.79 & 215.37 & 67.71 & 11.79 & 69.70 & 38.20 & 38.65 & 271.54 & 33.41 & 144.30 \\
\hline Lane Group LOS & E & F & C & F & F & B & E & D & D & F & C & F \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.87 & 58.18 & 3.66 & 15.31 & 31.86 & 0.10 & 0.27 & 0.41 & 0.69 & 9.59 & 0.67 & 21.28 \\
\hline 50th-Percentile Queue Length [ft] & 21.84 & 1454.43 & 91.60 & 382.82 & 796.51 & 2.57 & 6.79 & 10.34 & 17.25 & 239.85 & 16.78 & 532.03 \\
\hline 95th-Percentile Queue Length [veh] & 1.57 & 87.90 & 6.60 & 24.41 & 43.30 & 0.19 & 0.49 & 0.74 & 1.24 & 16.06 & 1.21 & 31.46 \\
\hline 95th-Percentile Queue Length [ft] & 39.31 & 2197.45 & 164.88 & 610.18 & 1082.46 & 4.63 & 12.22 & 18.61 & 31.05 & 401.60 & 30.21 & 786.38 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 63.41 & 224.35 & 21.79 & 215.37 & 67.71 & 11.79 & 69.70 & 38.20 & 38.65 & 271.54 & 33.41 & 144.30 \\
\hline Movement LOS & E & F & C & F & F & B & E & D & D & F & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{204.21} & \multicolumn{3}{|c|}{100.91} & \multicolumn{3}{|c|}{42.68} & \multicolumn{3}{|c|}{169.30} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{151.96} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.316} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\(\begin{array}{cc}\text { Delay (sec / veh): } & 39.6 \\ \text { Level Of Service: } & \mathrm{D} \\ \text { Volume to Capacity }(\mathrm{v} / \mathrm{c}): & 0.948\end{array}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 4 & 495 & 0 & 0 & 619 & 167 & 133 & 0 & 4 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 158 & 1827 & 5 & 2 & 1514 & 214 & 225 & 1 & 89 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 45 & 520 & 1 & 1 & 431 & 61 & 64 & 0 & 25 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 180 & 2081 & 6 & 2 & 1724 & 244 & 256 & 1 & 101 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 18 & 66 & 0 & 11 & 59 & 0 & 24 & 32 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 14 & 81 & 81 & 0 & 67 & 67 & 20 & 21 & 21 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.12 & 0.68 & 0.68 & 0.00 & 0.56 & 0.56 & 0.17 & 0.18 & 0.18 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.65 & 0.00 & 0.00 & 0.54 & 0.17 & 0.16 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 187 & 2154 & 961 & 7 & 1794 & 801 & 266 & 296 & 252 & 18 & 35 & 30 \\
\hline d1, Uniform Delay [s] & 52.75 & 18.25 & 6.38 & 59.58 & 25.03 & 13.89 & 49.62 & 40.70 & 43.78 & 58.92 & 57.59 & 57.97 \\
\hline k, delay calibration & 0.38 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.40 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 48.89 & 12.93 & 0.01 & 22.38 & 13.83 & 0.98 & 40.55 & 0.00 & 1.03 & 10.93 & 0.66 & 7.37 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.96 & 0.97 & 0.01 & 0.29 & 0.96 & 0.30 & 0.96 & 0.00 & 0.40 & 0.34 & 0.06 & 0.37 \\
\hline d, Delay for Lane Group [s/veh] & 101.64 & 31.18 & 6.39 & 81.96 & 38.86 & 14.87 & 90.17 & 40.71 & 44.81 & 69.85 & 58.26 & 65.34 \\
\hline Lane Group LOS & F & C & A & F & D & B & F & D & D & E & E & E \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 7.69 & 24.22 & 0.04 & 0.10 & 23.25 & 3.33 & 10.59 & 0.02 & 2.74 & 0.23 & 0.07 & 0.39 \\
\hline 50th-Percentile Queue Length [ft] & 192.31 & 605.48 & 1.10 & 2.52 & 581.27 & 83.24 & 264.75 & 0.62 & 68.56 & 5.87 & 1.65 & 9.78 \\
\hline 95th-Percentile Queue Length [veh] & 12.24 & 32.29 & 0.08 & 0.18 & 31.16 & 5.99 & 15.93 & 0.04 & 4.94 & 0.42 & 0.12 & 0.70 \\
\hline 95th-Percentile Queue Length [ft] & 306.03 & 807.25 & 1.99 & 4.53 & 778.97 & 149.83 & 398.17 & 1.12 & 123.40 & 10.57 & 2.97 & 17.60 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 101.64 & 31.18 & 6.39 & 81.96 & 38.86 & 14.87 & 90.17 & 40.71 & 44.81 & 69.85 & 58.26 & 65.34 \\
\hline Movement LOS & F & C & A & F & D & B & F & D & D & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{36.71} & \multicolumn{3}{|c|}{35.93} & \multicolumn{3}{|c|}{77.24} & \multicolumn{3}{|c|}{66.02} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{39.64} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.948} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
258.7

F
1.592

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 45 & 210 & 0 & 167 & 268 & 188 & 156 & 8 & 72 & 0 & 8 & 133 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 499 & 1612 & 208 & 196 & 1133 & 251 & 233 & 189 & 634 & 176 & 146 & 154 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 138 & 447 & 58 & 54 & 314 & 70 & 65 & 52 & 176 & 49 & 41 & 43 \\
\hline Total Analysis Volume [veh/h] & 554 & 1789 & 231 & 218 & 1257 & 279 & 259 & 210 & 704 & 195 & 162 & 171 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 30 & 51 & 0 & 15 & 36 & 0 & 23 & 41 & 41 & 13 & 31 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 26 & 47 & 47 & 11 & 32 & 32 & 19 & 37 & 37 & 9 & 27 \\
\hline g / C, Green / Cycle & 0.22 & 0.39 & 0.39 & 0.09 & 0.27 & 0.27 & 0.16 & 0.31 & 0.31 & 0.08 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.60 & 0.63 & 0.14 & 0.39 & 0.20 & 0.16 & 0.13 & 0.49 & 0.12 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1611 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1537 \\
\hline c, Capacity [veh/h] & 346 & 659 & 633 & 147 & 856 & 382 & 253 & 514 & 437 & 120 & 343 \\
\hline d1, Uniform Delay [s] & 47.01 & 36.43 & 36.43 & 54.50 & 43.92 & 39.96 & 50.50 & 33.00 & 41.62 & 55.50 & 46.21 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.44 & 0.11 & 0.50 & 0.50 & 0.42 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 283.83 & 247.53 & 275.18 & 250.85 & 217.06 & 11.62 & 59.46 & 0.52 & 285.86 & 314.39 & 37.62 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.60 & 1.53 & 1.60 & 1.48 & 1.47 & 0.73 & 1.02 & 0.41 & 1.61 & 1.62 & 0.97 \\
\hline d, Delay for Lane Group [s/veh] & 330.84 & 283.97 & 311.61 & 305.35 & 260.98 & 51.58 & 109.96 & 33.52 & 327.48 & 369.89 & 83.83 \\
\hline Lane Group LOS & F & F & F & F & F & D & F & C & F & F & F \\
\hline Critical Lane Group & No & No & Yes & Yes & No & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 37.03 & 62.92 & 65.34 & 14.48 & 37.74 & 8.31 & 11.75 & 4.93 & 47.40 & 14.14 & 13.36 \\
\hline 50th-Percentile Queue Length [ft] & 925.82 & 1572.89 & 1633.43 & 361.88 & 943.62 & 207.75 & 293.69 & 123.15 & 1185.09 & 353.44 & 333.93 \\
\hline 95th-Percentile Queue Length [veh] & 57.58 & 96.39 & 101.15 & 23.48 & 57.85 & 13.04 & 17.57 & 8.57 & 74.01 & 23.20 & 19.35 \\
\hline 95th-Percentile Queue Length [ft] & 1439.53 & 2409.85 & 2528.78 & 586.89 & 1446.34 & 325.94 & 439.20 & 214.15 & 1850.32 & 579.92 & 483.78 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 330.84 & 296.00 & 311.61 & 305.35 & 260.98 & 51.58 & 109.96 & 33.52 & 327.48 & 369.89 & 83.83 & 83.83 \\
\hline Movement LOS & F & F & F & F & F & D & F & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{304.90} & \multicolumn{3}{|c|}{233.18} & \multicolumn{3}{|c|}{226.82} & \multicolumn{3}{|c|}{189.48} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{258.74} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.592} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 175.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.530
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 116 & 0 & 174 & 166 & 0 & 139 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1724 & 408 & 501 & 1431 & 316 & 608 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 463 & 110 & 135 & 385 & 85 & 163 \\
\hline Total Analysis Volume [veh/h] & 1854 & 439 & 539 & 1539 & 340 & 654 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 49 & 0 & 31 & 80 & 40 & 40 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 45 & 45 & 27 & 76 & 36 & 36 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.37 & 0.37 & 0.23 & 0.63 & 0.30 & 0.30 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.58 & 0.31 & 0.34 & 0.48 & 0.11 & 0.46 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1196 & 534 & 360 & 2022 & 930 & 427 \\
\hline d1, Uniform Delay [s] & 37.49 & 33.88 & 46.46 & 15.57 & 33.01 & 41.98 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 251.58 & 13.34 & 238.63 & 2.77 & 0.24 & 250.16 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.55 & 0.82 & 1.50 & 0.76 & 0.37 & 1.53 \\
\hline d, Delay for Lane Group [s/veh] & 289.07 & 47.22 & 285.09 & 18.33 & 33.25 & 292.14 \\
\hline Lane Group LOS & F & D & F & B & F & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 57.88 & 12.64 & 33.96 & 12.96 & 3.93 & 42.18 \\
\hline 50th-Percentile Queue Length [ft] & 1447.05 & 316.12 & 848.90 & 323.95 & 98.36 & 1054.54 \\
\hline 95th-Percentile Queue Length [veh] & 89.23 & 18.48 & 52.37 & 18.86 & 7.08 & 65.35 \\
\hline 95th-Percentile Queue Length [ft] & 2230.72 & 461.91 & 1309.16 & 471.54 & 177.05 & 1633.84 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 289.07 & 47.22 & 285.09 & 18.33 & 33.25 & 292.14 \\
\hline Movement LOS & F & D & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{242.77} & \multicolumn{2}{|c|}{87.52} & \multicolumn{2}{|c|}{203.59} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{175.38} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.530} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 61.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.041
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 654 & 0 & 0 & 672 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 85 & 658 & 1 & 28 & 677 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 29 & 224 & 0 & 10 & 231 \\
\hline Total Analysis Volume [veh/h] & 3 & 116 & 896 & 1 & 38 & 922 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.04 & 0.34 & 0.01 & 0.00 & 0.05 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 61.54 & 22.67 & 0.00 & 0.00 & 10.01 & 0.00 \\
\hline Movement LOS & F & C & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 1.74 & 1.74 & 0.00 & 0.00 & 0.16 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 43.52 & 43.52 & 0.00 & 0.00 & 3.96 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{23.65} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.40} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{1.62} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 24.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.181
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 171 & 0 & 0 & 137 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 334 & 34 & 42 & 251 & 38 & 127 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 113 & 11 & 14 & 85 & 13 & 43 \\
\hline Total Analysis Volume [veh/h] & 451 & 46 & 57 & 339 & 51 & 172 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.05 & 0.00 & 0.18 & 0.29 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.56 & 0.00 & 24.40 & 17.73 \\
\hline Movement LOS & A & A & A & A & C & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.17 & 0.00 & 2.49 & 2.49 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 4.23 & 0.00 & 62.14 & 62.14 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.23} & \multicolumn{2}{|c|}{19.26} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.29} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): & 63.3 \\
Analysis Method: & HCM 2010 & Level Of Service: &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 265 & 333 & 83 & 66 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 454 & 466 & 169 & 172 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 169 & 174 & 63 & 64 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 677 & 694 & 252 & 256 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.81 & 7.23 & 7.23 & 16.85 & 15.38 & 5.32 & 1.32 \\
\hline 95th-Percentile Queue Length [ft] & 20.26 & 180.65 & 180.65 & 421.29 & 384.44 & 133.05 & 32.96 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{35.39} & \multicolumn{2}{|c|}{100.02} & \multicolumn{2}{|c|}{28.17} \\
\hline Approach LOS & \multicolumn{3}{|c|}{E} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{63.29} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
81.5

F

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\ddagger
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 133 & 0 & 0 & 167 & 87 & 70 & 0 & 2 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 141 & 389 & 7 & 3 & 351 & 145 & 150 & 4 & 103 & 5 & 3 & 1 & 0.8 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 117 & 2 & 1 & 105 & 44 & 45 & 1 & 31 & 2 & 1 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 169 & 468 & 8 & 4 & 422 & 174 & 180 & 5 & 124 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03


Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Vistro File: Q:\... \({ }^{\text {ttvcs1.vistro }}\)

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Left & 0.704 & 20.7 & C \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 1.075 & 71.5 & E \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Left & 0.863 & 32.3 & C \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.934 & 29.0 & C \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & NB Left & 1.602 & 214.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.959 & 40.5 & D \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 27.7 & D \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.000 & 10.6 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 17.0 & C \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 22.9 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 20.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.704
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
4
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 323 & 51 & 0 & 0 & 49 & 8 & 2 & 11 & 98 & 0 & 38 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 324 & 755 & 3 & 0 & 1149 & 11 & 3 & 12 & 102 & 8 & 38 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 90 & 211 & 1 & 0 & 321 & 3 & 1 & 3 & 28 & 2 & 11 & 1 \\
\hline Total Analysis Volume [veh/h] & 362 & 843 & 3 & 0 & 1282 & 12 & 3 & 13 & 114 & 9 & 42 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 80 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 38 & 28 & 0 & 33 & 23 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 12 & 53 & 0 & 41 & 41 & 15 & 15 & 15 & 15 \\
\hline g / C, Green / Cycle & 0.15 & 0.66 & 0.00 & 0.51 & 0.51 & 0.19 & 0.19 & 0.19 & 0.19 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.12 & 0.50 & 0.00 & 0.40 & 0.01 & 0.02 & 0.08 & 0.06 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 766 & 1425 & 801 & 1425 \\
\hline c, Capacity [veh/h] & 463 & 1111 & 0 & 1640 & 732 & 197 & 266 & 203 & 266 \\
\hline d1, Uniform Delay [s] & 32.77 & 9.18 & 0.00 & 15.81 & 9.54 & 27.11 & 28.74 & 27.65 & 26.50 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 2.92 & 4.95 & 0.00 & 3.79 & 0.04 & 0.18 & 1.09 & 0.64 & 0.02 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.76 & 0.00 & 0.78 & 0.02 & 0.08 & 0.43 & 0.25 & 0.01 \\
\hline d, Delay for Lane Group [s/veh] & 35.68 & 14.12 & 0.00 & 19.60 & 9.58 & 27.28 & 29.83 & 28.29 & 26.51 \\
\hline Lane Group LOS & D & B & A & B & A & C & C & C & C \\
\hline Critical Lane Group & Yes & No & No & Yes & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 3.14 & 6.68 & 0.00 & 7.65 & 0.09 & 0.25 & 1.96 & 0.83 & 0.05 \\
\hline 50th-Percentile Queue Length [ft] & 78.59 & 167.06 & 0.00 & 191.27 & 2.13 & 6.37 & 49.03 & 20.86 & 1.17 \\
\hline 95th-Percentile Queue Length [veh] & 5.66 & 10.92 & 0.00 & 12.19 & 0.15 & 0.46 & 3.53 & 1.50 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 141.47 & 273.04 & 0.00 & 304.68 & 3.83 & 11.46 & 88.25 & 37.56 & 2.11 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.68 & 14.12 & 14.12 & 0.00 & 19.60 & 9.58 & 27.28 & 27.28 & 29.83 & 28.29 & 28.29 & 26.51 \\
\hline Movement LOS & D & B & B & A & B & A & C & C & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{20.58} & \multicolumn{3}{|c|}{19.51} & \multicolumn{3}{|c|}{29.51} & \multicolumn{3}{|c|}{28.20} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{20.65} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.704} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes
\(\begin{array}{cc}\text { Delay (sec / veh): } & 71.5 \\ \text { Level Of Service: } & \text { E } \\ \text { Volume to Capacity }(\mathrm{v} / \mathrm{c}): & 1.075\end{array}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 294 & 283 & 2 & 19 & 86 & 42 & 34 & 53 & 238 & 2 & 62 & 57 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 319 & 908 & 170 & 91 & 1081 & 99 & 74 & 68 & 270 & 185 & 74 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 88 & 251 & 47 & 25 & 299 & 27 & 20 & 19 & 75 & 51 & 20 & 32 \\
\hline Total Analysis Volume [veh/h] & 352 & 1003 & 188 & 101 & 1194 & 109 & 82 & 75 & 298 & 204 & 82 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 29 & 56 & 0 & 18 & 45 & 0 & 27 & 28 & 0 & 18 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 25 & 57 & 57 & 9 & 41 & 41 & 8 & 24 & 24 & 14 & 30 & 30 \\
\hline g / C, Green / Cycle & 0.21 & 0.47 & 0.47 & 0.08 & 0.34 & 0.34 & 0.06 & 0.20 & 0.20 & 0.12 & 0.25 & 0.25 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.22 & 0.31 & 0.13 & 0.06 & 0.37 & 0.08 & 0.05 & 0.04 & 0.21 & 0.13 & 0.05 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 333 & 1515 & 676 & 123 & 1096 & 489 & 102 & 332 & 283 & 186 & 421 & 358 \\
\hline d1, Uniform Delay [s] & 47.51 & 24.15 & 19.08 & 54.58 & 39.41 & 28.02 & 55.42 & 40.38 & 48.11 & 53.00 & 35.39 & 37.01 \\
\hline k, delay calibration & 0.48 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.47 & 0.47 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 64.73 & 2.29 & 1.02 & 12.66 & 55.01 & 1.05 & 13.42 & 0.34 & 67.21 & 91.10 & 0.22 & 0.61 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.06 & 0.66 & 0.28 & 0.82 & 1.09 & 0.22 & 0.80 & 0.23 & 1.05 & 1.09 & 0.19 & 0.36 \\
\hline d, Delay for Lane Group [s/veh] & 112.23 & 26.44 & 20.10 & 67.24 & 94.42 & 29.08 & 68.84 & 40.72 & 115.32 & 144.10 & 35.61 & 37.62 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 15.19 & 10.03 & 3.02 & 3.27 & 22.92 & 2.20 & 2.83 & 1.90 & 13.67 & 10.18 & 1.87 & 3.09 \\
\hline 50th-Percentile Queue Length [ft] & 379.72 & 250.75 & 75.49 & 81.68 & 572.99 & 55.03 & 70.72 & 47.53 & 341.72 & 254.55 & 46.72 & 77.31 \\
\hline 95th-Percentile Queue Length [veh] & 22.25 & 15.22 & 5.43 & 5.88 & 32.56 & 3.96 & 5.09 & 3.42 & 20.29 & 16.00 & 3.36 & 5.57 \\
\hline 95th-Percentile Queue Length [ft] & 556.30 & 380.60 & 135.87 & 147.02 & 813.92 & 99.06 & 127.30 & 85.55 & 507.33 & 399.90 & 84.10 & 139.16 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 112.23 & 26.44 & 20.10 & 67.24 & 94.42 & 29.08 & 68.84 & 40.72 & 115.32 & 144.10 & 35.61 & 37.62 \\
\hline Movement LOS & F & C & C & E & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{45.24} & \multicolumn{3}{|c|}{87.39} & \multicolumn{3}{|c|}{94.65} & \multicolumn{3}{|c|}{89.57} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{71.45} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{E} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.075} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
32.3

C
0.863

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7711 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 379 & 2 & 114 & 212 & 0 & 0 & 0 & 0 & 2 & 0 & 200 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1108 & 79 & 162 & 1376 & 12 & 18 & 10 & 12 & 152 & 21 & 279 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 308 & 22 & 45 & 382 & 3 & 5 & 3 & 3 & 42 & 6 & 78 \\
\hline Total Analysis Volume [veh/h] & 26 & 1231 & 88 & 180 & 1529 & 13 & 20 & 11 & 13 & 169 & 23 & 310 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 100 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 41 & 0 & 11 & 41 & 0 & 11 & 32 & 0 & 16 & 37 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 50 & 50 & 7 & 53 & 53 & 3 & 15 & 15 & 12 & 24 & 24 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.07 & 0.53 & 0.53 & 0.03 & 0.15 & 0.15 & 0.12 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.39 & 0.06 & 0.06 & 0.48 & 0.01 & 0.01 & 0.01 & 0.01 & 0.11 & 0.01 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 59 & 1591 & 710 & 220 & 1698 & 758 & 50 & 252 & 214 & 192 & 402 & 342 \\
\hline d1, Uniform Delay [s] & 47.18 & 20.50 & 13.43 & 45.90 & 21.05 & 11.07 & 47.60 & 36.38 & 36.47 & 43.31 & 29.33 & 36.97 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.31 & 0.11 & 0.16 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.99 & 3.73 & 0.36 & 7.39 & 8.11 & 0.04 & 5.20 & 0.07 & 0.12 & 27.72 & 0.06 & 12.37 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.44 & 0.77 & 0.12 & 0.82 & 0.90 & 0.02 & 0.40 & 0.04 & 0.06 & 0.88 & 0.06 & 0.91 \\
\hline d, Delay for Lane Group [s/veh] & 52.17 & 24.24 & 13.78 & 53.29 & 29.16 & 11.11 & 52.80 & 36.45 & 36.59 & 71.03 & 29.39 & 49.34 \\
\hline Lane Group LOS & D & C & B & D & C & B & D & D & D & E & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.68 & 10.73 & 1.00 & 2.31 & 15.05 & 0.13 & 0.56 & 0.24 & 0.28 & 5.56 & 0.43 & 8.41 \\
\hline 50th-Percentile Queue Length [ft] & 17.10 & 268.30 & 24.95 & 57.76 & 376.16 & 3.15 & 14.09 & 5.93 & 7.05 & 138.97 & 10.80 & 210.16 \\
\hline 95th-Percentile Queue Length [veh] & 1.23 & 16.10 & 1.80 & 4.16 & 21.41 & 0.23 & 1.01 & 0.43 & 0.51 & 9.43 & 0.78 & 13.16 \\
\hline 95th-Percentile Queue Length [ft] & 30.78 & 402.61 & 44.92 & 103.96 & 535.20 & 5.68 & 25.36 & 10.67 & 12.70 & 235.64 & 19.45 & 329.03 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 52.17 & 24.24 & 13.78 & 53.29 & 29.16 & 11.11 & 52.80 & 36.45 & 36.59 & 71.03 & 29.39 & 49.34 \\
\hline Movement LOS & D & C & B & D & C & B & D & D & D & E & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{24.09} & \multicolumn{3}{|c|}{31.55} & \multicolumn{3}{|c|}{43.92} & \multicolumn{3}{|c|}{55.73} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{32.28} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.863} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
29.0

Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 301 & 0 & 0 & 169 & 45 & 80 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 90 & 988 & 4 & 6 & 1457 & 139 & 139 & 4 & 126 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 26 & 281 & 1 & 2 & 415 & 40 & 40 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 103 & 1125 & 5 & 7 & 1659 & 158 & 158 & 5 & 144 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 90 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 33 & 0 & 26 & 48 & 0 & 12 & 20 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 35 & 35 & 1 & 30 & 30 & 8 & 9 & 9 & 0 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.10 & 0.58 & 0.58 & 0.01 & 0.49 & 0.49 & 0.13 & 0.14 & 0.14 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.35 & 0.00 & 0.00 & 0.52 & 0.11 & 0.10 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 153 & 1836 & 820 & 22 & 1573 & 702 & 202 & 238 & 203 & 10 & 37 & 31 \\
\hline d1, Uniform Delay [s] & 26.59 & 8.48 & 5.51 & 29.74 & 15.43 & 8.80 & 25.77 & 22.46 & 24.91 & 30.11 & 29.20 & 29.26 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.07 & 0.33 & 0.00 & 8.43 & 28.58 & 0.16 & 6.49 & 0.03 & 4.57 & 15.91 & 1.66 & 3.57 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.67 & 0.61 & 0.01 & 0.32 & 1.05 & 0.22 & 0.78 & 0.02 & 0.71 & 0.30 & 0.14 & 0.22 \\
\hline d, Delay for Lane Group [s/veh] & 31.66 & 8.81 & 5.51 & 38.18 & 44.01 & 8.96 & 32.26 & 22.50 & 29.48 & 46.02 & 30.86 & 32.83 \\
\hline Lane Group LOS & C & A & A & D & F & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 1.45 & 2.81 & 0.02 & 0.14 & 13.26 & 0.84 & 2.45 & 0.06 & 2.12 & 0.09 & 0.09 & 0.13 \\
\hline 50th-Percentile Queue Length [ft] & 36.33 & 70.18 & 0.41 & 3.48 & 331.57 & 20.88 & 61.14 & 1.51 & 52.90 & 2.15 & 2.13 & 3.17 \\
\hline 95th-Percentile Queue Length [veh] & 2.62 & 5.05 & 0.03 & 0.25 & 19.97 & 1.50 & 4.40 & 0.11 & 3.81 & 0.15 & 0.15 & 0.23 \\
\hline 95th-Percentile Queue Length [ft] & 65.40 & 126.33 & 0.74 & 6.27 & 499.18 & 37.58 & 110.05 & 2.72 & 95.22 & 3.87 & 3.84 & 5.71 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 31.66 & 8.81 & 5.51 & 38.18 & 44.01 & 8.96 & 32.26 & 22.50 & 29.48 & 46.02 & 30.86 & 32.83 \\
\hline Movement LOS & C & A & A & D & F & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.71} & \multicolumn{3}{|c|}{40.95} & \multicolumn{3}{|c|}{30.80} & \multicolumn{3}{|c|}{34.81} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{28.97} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.934} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
214.6

F
1.602

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 59 & 136 & 0 & 45 & 74 & 51 & 86 & 3 & 22 & 0 & 3 & 80 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 432 & 816 & 99 & 67 & 1400 & 141 & 155 & 126 & 578 & 217 & 245 & 98 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 120 & 226 & 27 & 19 & 388 & 39 & 43 & 35 & 160 & 60 & 68 & 27 \\
\hline Total Analysis Volume [veh/h] & 479 & 906 & 110 & 74 & 1554 & 156 & 172 & 140 & 642 & 241 & 272 & 109 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 34 & 0 & 32 & 40 & 0 & 28 & 38 & 38 & 16 & 26 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 51 & 51 & 7 & 36 & 36 & 15 & 34 & 34 & 12 & 31 \\
\hline g / C, Green / Cycle & 0.18 & 0.43 & 0.43 & 0.06 & 0.30 & 0.30 & 0.12 & 0.28 & 0.28 & 0.10 & 0.26 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.31 & 0.31 & 0.05 & 0.49 & 0.11 & 0.11 & 0.08 & 0.45 & 0.15 & 0.24 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1614 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1596 \\
\hline c, Capacity [veh/h] & 293 & 715 & 688 & 93 & 961 & 429 & 198 & 473 & 402 & 160 & 4412 \\
\hline d1, Uniform Delay [s] & 49.00 & 28.49 & 28.63 & 55.82 & 41.93 & 32.91 & 51.60 & 33.74 & 43.08 & 54.00 & 43.39 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.39 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 301.32 & 6.18 & 6.64 & 14.31 & 282.28 & 2.38 & 10.93 & 0.35 & 280.16 & 258.38 & 24.60 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.64 & 0.72 & 0.73 & 0.80 & 1.62 & 0.36 & 0.87 & 0.30 & 1.60 & 1.51 & 0.92 \\
\hline d, Delay for Lane Group [s/veh] & 350.32 & 34.67 & 35.27 & 70.13 & 324.22 & 35.28 & 62.52 & 34.09 & 323.24 & 312.38 & 67.98 \\
\hline Lane Group LOS & F & C & D & E & F & D & E & C & F & F & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 32.82 & 12.46 & 12.25 & 2.49 & 50.96 & 3.66 & 5.67 & 3.26 & 43.06 & 16.28 & 13.74 \\
\hline 50th-Percentile Queue Length [ft] & 820.51 & 311.52 & 306.37 & 62.33 & 1273.94 & 91.57 & 141.85 & 81.44 & 1076.46 & 407.03 & 343.47 \\
\hline 95th-Percentile Queue Length [veh] & 51.34 & 18.25 & 18.00 & 4.49 & 79.07 & 6.59 & 9.58 & 5.86 & 67.18 & 26.18 & 19.82 \\
\hline 95th-Percentile Queue Length [ft] & 1283.39 & 456.25 & 449.90 & 112.19 & 1976.84 & 164.83 & 239.51 & 146.58 & 1679.60 & 654.57 & 495.44 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 350.32 & 34.93 & 35.27 & 70.13 & 324.22 & 35.28 & 62.52 & 34.09 & 323.24 & 312.38 & 67.98 & 67.98 \\
\hline Movement LOS & F & C & D & E & F & D & E & C & F & F & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{136.01} & \multicolumn{3}{|c|}{288.41} & \multicolumn{3}{|c|}{233.80} & \multicolumn{3}{|c|}{162.68} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{214.64} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.602} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 40.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.959
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 113 & 0 & 47 & 49 & 0 & 82 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1028 & 225 & 370 & 1813 & 389 & 335 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 276 & 60 & 99 & 487 & 105 & 90 \\
\hline Total Analysis Volume [veh/h] & 1105 & 242 & 398 & 1949 & 418 & 360 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 38 & 0 & 41 & 79 & 41 & 41 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 44 & 44 & 32 & 80 & 32 & 32 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.26 & 0.67 & 0.27 & 0.27 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.35 & 0.17 & 0.25 & 0.61 & 0.13 & 0.25 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1172 & 523 & 423 & 2124 & 831 & 382 \\
\hline d1, Uniform Delay [s] & 36.71 & 28.91 & 43.19 & 17.25 & 37.14 & 43.00 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.32 & 0.50 & 0.11 & 0.33 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 15.67 & 2.92 & 23.18 & 7.81 & 0.47 & 25.42 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.94 & 0.46 & 0.94 & 0.92 & 0.50 & 0.94 \\
\hline d, Delay for Lane Group [s/veh] & 52.38 & 31.84 & 66.37 & 25.05 & 37.62 & 68.42 \\
\hline Lane Group LOS & D & C & E & C & D & E \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 16.98 & 5.40 & 13.58 & 20.16 & 5.25 & 13.05 \\
\hline 50th-Percentile Queue Length [ft] & 424.49 & 135.05 & 339.41 & 504.07 & 131.23 & 326.37 \\
\hline 95th-Percentile Queue Length [veh] & 23.74 & 9.21 & 19.62 & 27.53 & 9.01 & 18.98 \\
\hline 95th-Percentile Queue Length [ft] & 593.44 & 230.35 & 490.48 & 688.17 & 225.16 & 474.51 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 52.38 & 31.84 & 66.37 & 25.05 & 37.62 & 68.42 \\
\hline Movement LOS & D & C & E & C & D & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{48.69} & \multicolumn{2}{|c|}{32.06} & \multicolumn{2}{|c|}{51.87} \\
\hline Approach LOS & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{40.51} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.959} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 27.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.018
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 325 & 0 & 0 & 398 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 82 & 329 & 3 & 92 & 401 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 28 & 112 & 1 & 31 & 137 \\
\hline Total Analysis Volume [veh/h] & 3 & 112 & 448 & 4 & 125 & 546 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.18 & 0.00 & 0.00 & 0.11 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 27.74 & 12.49 & 0.00 & 0.00 & 8.66 & 0.00 \\
\hline Movement LOS & D & B & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.75 & 0.75 & 0.00 & 0.00 & 0.38 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 18.68 & 18.68 & 0.00 & 0.00 & 9.50 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{12.89} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.61} \\
\hline Approach LOS & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.07} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.000
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 46 & 0 & 0 & 81 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 46 & 0 & 51 & 81 & 0 & 14 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 16 & 0 & 17 & 27 & 0 & 5 \\
\hline Total Analysis Volume [veh/h] & 62 & 0 & 69 & 109 & 0 & 19 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.00 & 0.02 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.45 & 0.00 & 10.58 & 8.66 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.14 & 0.00 & 0.06 & 0.06 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.51 & 0.00 & 1.45 & 1.45 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.89} & \multicolumn{2}{|c|}{8.66} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.62} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
4 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 160 & 91 & 23 & 40 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 279 & 244 & 123 & 158 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 104 & 91 & 46 & 59 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 416 & 364 & 183 & 235 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 1.05 & 2.16 & 2.16 & 3.47 & 3.08 & 3.09 & 1.17 \\
\hline 95th-Percentile Queue Length [ft] & 26.33 & 53.91 & 53.91 & 86.83 & 77.11 & 77.37 & 29.17 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.31} & \multicolumn{2}{|c|}{18.43} & \multicolumn{2}{|c|}{17.15} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{16.96} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 22.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{2}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 114 & 16 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 80 & 0 & 0 & 45 & 24 & 41 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 120 & 253 & 0 & 1 & 299 & 90 & 87 & 3 & 116 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 76 & 0 & 0 & 90 & 27 & 26 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 144 & 304 & 0 & 1 & 359 & 108 & 105 & 4 & 139 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 6.91 & 7.13 & 0.85 & 0.02 & 0.98 & 0.10 \\
\hline 95th-Percentile Queue Length [ft] & 172.80 & 178.13 & 21.32 & 0.60 & 24.51 & 2.62 \\
\hline Approach Delay [s/veh] & 26.15 & 25.92 & \multicolumn{3}{|c|}{11.84} & 11.39 \\
\hline Approach LOS & D & D & \multicolumn{3}{|c|}{22.86} \\
\hline Intersection Delay [s/veh] & C \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

Vistro File: Q:I....tvcs1.vistro

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & EB Right & 1.663 & 219.2 & F \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 1.539 & 208.1 & F \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Left & 1.316 & 152.0 & F \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Thru & 1.060 & 103.9 & F \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.592 & 258.7 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.530 & 175.4 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.041 & 61.5 & F \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.000 & 12.5 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & SB Thru & & 63.3 & F \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 81.5 & F \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
219.2

F
15 minutes Volume to Capacity (v/c): 1.663

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 526 & 82 & 0 & 0 & 91 & 12 & 20 & 98 & 828 & 0 & 62 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 530 & 1268 & 3 & 2 & 937 & 13 & 22 & 100 & 829 & 3 & 62 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 354 & 1 & 1 & 261 & 4 & 6 & 28 & 231 & 1 & 17 & 0 \\
\hline Total Analysis Volume [veh/h] & 592 & 1415 & 3 & 2 & 1046 & 15 & 25 & 112 & 925 & 3 & 69 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 58 & 0 & 11 & 43 & 0 & 0 & 51 & 0 & 0 & 51 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 61 & 0 & 39 & 39 & 47 & 47 & 47 & 47 \\
\hline g / C, Green / Cycle & 0.18 & 0.50 & 0.00 & 0.33 & 0.33 & 0.39 & 0.39 & 0.39 & 0.39 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.19 & 0.85 & 0.00 & 0.33 & 0.01 & 0.15 & 0.65 & 0.04 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1676 & 1597 & 3192 & 1425 & 929 & 1425 & 1654 & 1425 \\
\hline c, Capacity [veh/h] & 569 & 846 & 7 & 1039 & 464 & 399 & 557 & 678 & 557 \\
\hline d1, Uniform Delay [s] & 48.97 & 29.70 & 59.55 & 40.46 & 27.58 & 26.00 & 36.54 & 23.25 & 22.27 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 29.15 & 309.42 & 22.54 & 29.53 & 0.13 & 0.51 & 305.17 & 0.07 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.04 & 1.68 & 0.30 & 1.01 & 0.03 & 0.34 & 1.66 & 0.11 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 78.12 & 339.12 & 82.09 & 69.99 & 27.70 & 26.51 & 341.71 & 23.32 & 22.27 \\
\hline Lane Group LOS & F & F & F & F & C & C & F & C & C \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 10.23 & 93.27 & 0.10 & 18.14 & 0.29 & 2.65 & 63.14 & 1.32 & 0.02 \\
\hline 50th-Percentile Queue Length [ft] & 255.67 & 2331.75 & 2.50 & 453.42 & 7.24 & 66.32 & 1578.39 & 33.05 & 0.44 \\
\hline 95th-Percentile Queue Length [veh] & 15.78 & 146.39 & 0.18 & 25.23 & 0.52 & 4.78 & 99.11 & 2.38 & 0.03 \\
\hline 95th-Percentile Queue Length [ft] & 394.44 & 3659.69 & 4.49 & 630.79 & 13.04 & 119.38 & 2477.83 & 59.49 & 0.79 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.12 & 339.12 & 339.12 & 82.09 & 69.99 & 27.70 & 26.51 & 26.51 & 341.71 & 23.32 & 23.32 & 22.27 \\
\hline Movement LOS & F & F & F & F & F & C & C & C & F & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{262.25} & \multicolumn{3}{|c|}{69.41} & \multicolumn{3}{|c|}{301.05} & \multicolumn{3}{|c|}{23.31} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{219.18} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.663} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
208.1

F 1.539

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 495 & 447 & 7 & 142 & 706 & 71 & 69 & 104 & 481 & 6 & 106 & 92 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 511 & 1608 & 146 & 177 & 1515 & 87 & 84 & 109 & 499 & 100 & 113 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 141 & 444 & 40 & 49 & 419 & 24 & 23 & 30 & 138 & 28 & 31 & 32 \\
\hline Total Analysis Volume [veh/h] & 565 & 1777 & 161 & 196 & 1674 & 96 & 93 & 120 & 551 & 110 & 125 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 31 & 61 & 0 & 14 & 44 & 0 & 26 & 34 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 57 & 57 & 10 & 40 & 40 & 9 & 30 & 30 & 7 & 28 & 28 \\
\hline g / C, Green / Cycle & 0.22 & 0.48 & 0.48 & 0.08 & 0.33 & 0.33 & 0.07 & 0.25 & 0.25 & 0.06 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.56 & 0.11 & 0.12 & 0.52 & 0.07 & 0.06 & 0.07 & 0.39 & 0.07 & 0.07 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 359 & 1519 & 678 & 133 & 1067 & 476 & 115 & 417 & 355 & 93 & 395 & 336 \\
\hline d1, Uniform Delay [s] & 46.50 & 31.44 & 18.58 & 55.00 & 39.94 & 28.51 & 54.90 & 36.45 & 45.06 & 56.50 & 37.88 & 38.55 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.44 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 270.83 & 83.82 & 0.82 & 248.77 & 260.55 & 0.95 & 12.73 & 0.38 & 262.22 & 143.62 & 0.46 & 0.72 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.57 & 1.17 & 0.24 & 1.47 & 1.57 & 0.20 & 0.81 & 0.29 & 1.55 & 1.18 & 0.32 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 317.33 & 115.26 & 19.40 & 303.77 & 300.50 & 29.46 & 67.62 & 36.82 & 307.28 & 200.11 & 38.34 & 39.27 \\
\hline Lane Group LOS & F & F & B & F & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 36.93 & 36.54 & 2.52 & 12.98 & 52.82 & 1.95 & 3.18 & 2.90 & 36.31 & 6.47 & 3.01 & 3.17 \\
\hline 50th-Percentile Queue Length [ft] & 923.14 & 913.42 & 62.90 & 324.57 & 1320.53 & 48.77 & 79.39 & 72.60 & 907.68 & 161.75 & 75.19 & 79.33 \\
\hline 95th-Percentile Queue Length [veh] & 57.29 & 52.01 & 4.53 & 21.25 & 81.62 & 3.51 & 5.72 & 5.23 & 56.57 & 11.16 & 5.41 & 5.71 \\
\hline 95th-Percentile Queue Length [ft] & 1432.27 & 1300.23 & 113.22 & 531.36 & 2040.57 & 87.78 & 142.91 & 130.69 & 1414.17 & 279.01 & 135.35 & 142.80 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 317.33 & 115.26 & 19.40 & 303.77 & 300.50 & 29.46 & 67.62 & 36.82 & 307.28 & 200.11 & 38.34 & 39.27 \\
\hline Movement LOS & F & F & B & F & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{154.71} & \multicolumn{3}{|c|}{287.59} & \multicolumn{3}{|c|}{235.63} & \multicolumn{3}{|c|}{87.55} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{208.06} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.539} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
152.0

F
1.316

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{77浐} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{7 | \({ }^{\text {F }}\)} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 618 & 10 & 416 & 777 & 0 & 0 & 0 & 0 & 9 & 0 & 331 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1873 & 188 & 502 & 1710 & 8 & 6 & 15 & 25 & 131 & 27 & 391 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 520 & 52 & 139 & 475 & 2 & 2 & 4 & 7 & 36 & 8 & 109 \\
\hline Total Analysis Volume [veh/h] & 27 & 2081 & 209 & 558 & 1900 & 9 & 7 & 17 & 28 & 146 & 30 & 434 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 59 & 0 & 20 & 68 & 0 & 11 & 29 & 0 & 12 & 30 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 55 & 55 & 16 & 67 & 67 & 1 & 25 & 25 & 8 & 31 & 31 \\
\hline g / C, Green / Cycle & 0.03 & 0.46 & 0.46 & 0.13 & 0.56 & 0.56 & 0.01 & 0.21 & 0.21 & 0.07 & 0.26 & 0.26 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.65 & 0.15 & 0.18 & 0.60 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.30 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 55 & 1468 & 655 & 413 & 1783 & 796 & 19 & 347 & 295 & 106 & 438 & 372 \\
\hline d1, Uniform Delay [s] & 56.88 & 32.40 & 20.51 & 52.00 & 26.48 & 11.76 & 58.81 & 38.14 & 38.51 & 56.00 & 33.34 & 44.33 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.19 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.53 & 191.95 & 1.28 & 163.37 & 41.23 & 0.03 & 10.89 & 0.06 & 0.14 & 215.55 & 0.07 & 99.98 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.49 & 1.42 & 0.32 & 1.35 & 1.07 & 0.01 & 0.36 & 0.05 & 0.10 & 1.37 & 0.07 & 1.17 \\
\hline d, Delay for Lane Group [s/veh] & 63.41 & 224.35 & 21.79 & 215.37 & 67.71 & 11.79 & 69.70 & 38.20 & 38.65 & 271.54 & 33.41 & 144.30 \\
\hline Lane Group LOS & E & F & C & F & F & B & E & D & D & F & C & F \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.87 & 58.18 & 3.66 & 15.31 & 31.86 & 0.10 & 0.27 & 0.41 & 0.69 & 9.59 & 0.67 & 21.28 \\
\hline 50th-Percentile Queue Length [ft] & 21.84 & 1454.43 & 91.60 & 382.82 & 796.51 & 2.57 & 6.79 & 10.34 & 17.25 & 239.85 & 16.78 & 532.03 \\
\hline 95th-Percentile Queue Length [veh] & 1.57 & 87.90 & 6.60 & 24.41 & 43.30 & 0.19 & 0.49 & 0.74 & 1.24 & 16.06 & 1.21 & 31.46 \\
\hline 95th-Percentile Queue Length [ft] & 39.31 & 2197.45 & 164.88 & 610.18 & 1082.46 & 4.63 & 12.22 & 18.61 & 31.05 & 401.60 & 30.21 & 786.38 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 63.41 & 224.35 & 21.79 & 215.37 & 67.71 & 11.79 & 69.70 & 38.20 & 38.65 & 271.54 & 33.41 & 144.30 \\
\hline Movement LOS & E & F & C & F & F & B & E & D & D & F & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{204.21} & \multicolumn{3}{|c|}{100.91} & \multicolumn{3}{|c|}{42.68} & \multicolumn{3}{|c|}{169.30} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{151.96} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.316} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 103.9 \\
Level Of Service: & F \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.060
\end{tabular}
1.060

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 4 & 495 & 0 & 0 & 619 & 167 & 133 & 0 & 4 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 158 & 1827 & 5 & 2 & 1514 & 214 & 225 & 1 & 89 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 45 & 520 & 1 & 1 & 431 & 61 & 64 & 0 & 25 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 180 & 2081 & 6 & 2 & 1724 & 244 & 256 & 1 & 101 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 10 & 40 & 40 & 0 & 30 & 30 & 14 & 14 & 14 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.14 & 0.56 & 0.56 & 0.00 & 0.42 & 0.42 & 0.19 & 0.20 & 0.20 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.65 & 0.00 & 0.00 & 0.54 & 0.17 & 0.16 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 223 & 1778 & 794 & 7 & 1346 & 601 & 304 & 339 & 288 & 18 & 38 & 33 \\
\hline d1, Uniform Delay [s] & 29.67 & 15.75 & 7.00 & 35.31 & 20.57 & 14.35 & 27.74 & 22.66 & 24.37 & 34.88 & 33.99 & 34.22 \\
\hline k, delay calibration & 0.11 & 0.28 & 0.11 & 0.11 & 0.19 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.75 & 80.32 & 0.00 & 22.12 & 128.59 & 0.44 & 6.21 & 0.00 & 0.73 & 9.86 & 0.55 & 5.91 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.81 & 1.17 & 0.01 & 0.29 & 1.28 & 0.41 & 0.84 & 0.00 & 0.35 & 0.33 & 0.05 & 0.34 \\
\hline d, Delay for Lane Group [s/veh] & 36.42 & 96.07 & 7.01 & 57.42 & 149.16 & 14.79 & 33.95 & 22.66 & 25.10 & 44.75 & 34.55 & 40.13 \\
\hline Lane Group LOS & D & F & A & E & F & B & C & C & C & D & C & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 3.05 & 29.28 & 0.03 & 0.07 & 32.61 & 2.24 & 4.51 & 0.01 & 1.46 & 0.15 & 0.04 & 0.24 \\
\hline 50th-Percentile Queue Length [ft] & 76.16 & 731.98 & 0.73 & 1.83 & 815.34 & 56.06 & 112.87 & 0.33 & 36.41 & 3.76 & 0.97 & 5.88 \\
\hline 95th-Percentile Queue Length [veh] & 5.48 & 42.86 & 0.05 & 0.13 & 49.11 & 4.04 & 8.00 & 0.02 & 2.62 & 0.27 & 0.07 & 0.42 \\
\hline 95th-Percentile Queue Length [ft] & 137.09 & 1071.46 & 1.31 & 3.29 & 1227.63 & 100.92 & 199.99 & 0.59 & 65.54 & 6.78 & 1.74 & 10.59 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.42 & 96.07 & 7.01 & 57.42 & 149.16 & 14.79 & 33.95 & 22.66 & 25.10 & 44.75 & 34.55 & 40.13 \\
\hline Movement LOS & D & F & A & E & F & B & C & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{91.10} & \multicolumn{3}{|c|}{132.43} & \multicolumn{3}{|c|}{31.42} & \multicolumn{3}{|c|}{41.00} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{103.91} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.060} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
258.7

F
1.592

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 45 & 210 & 0 & 167 & 268 & 188 & 156 & 8 & 72 & 0 & 8 & 133 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 499 & 1612 & 208 & 196 & 1133 & 251 & 233 & 189 & 634 & 176 & 146 & 154 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 138 & 447 & 58 & 54 & 314 & 70 & 65 & 52 & 176 & 49 & 41 & 43 \\
\hline Total Analysis Volume [veh/h] & 554 & 1789 & 231 & 218 & 1257 & 279 & 259 & 210 & 704 & 195 & 162 & 171 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 30 & 51 & 0 & 15 & 36 & 0 & 23 & 41 & 41 & 13 & 31 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 26 & 47 & 47 & 11 & 32 & 32 & 19 & 37 & 37 & 9 & 27 \\
\hline g / C, Green / Cycle & 0.22 & 0.39 & 0.39 & 0.09 & 0.27 & 0.27 & 0.16 & 0.31 & 0.31 & 0.08 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.60 & 0.63 & 0.14 & 0.39 & 0.20 & 0.16 & 0.13 & 0.49 & 0.12 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1611 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1537 \\
\hline c, Capacity [veh/h] & 346 & 659 & 633 & 147 & 856 & 382 & 253 & 514 & 437 & 120 & 343 \\
\hline d1, Uniform Delay [s] & 47.01 & 36.43 & 36.43 & 54.50 & 43.92 & 39.96 & 50.50 & 33.00 & 41.62 & 55.50 & 46.21 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.44 & 0.11 & 0.50 & 0.50 & 0.42 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 283.83 & 247.53 & 275.18 & 250.85 & 217.06 & 11.62 & 59.46 & 0.52 & 285.86 & 314.39 & 37.62 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.60 & 1.53 & 1.60 & 1.48 & 1.47 & 0.73 & 1.02 & 0.41 & 1.61 & 1.62 & 0.97 \\
\hline d, Delay for Lane Group [s/veh] & 330.84 & 283.97 & 311.61 & 305.35 & 260.98 & 51.58 & 109.96 & 33.52 & 327.48 & 369.89 & 83.83 \\
\hline Lane Group LOS & F & F & F & F & F & D & F & C & F & F & F \\
\hline Critical Lane Group & No & No & Yes & Yes & No & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 37.03 & 62.92 & 65.34 & 14.48 & 37.74 & 8.31 & 11.75 & 4.93 & 47.40 & 14.14 & 13.36 \\
\hline 50th-Percentile Queue Length [ft] & 925.82 & 1572.89 & 1633.43 & 361.88 & 943.62 & 207.75 & 293.69 & 123.15 & 1185.09 & 353.44 & 333.93 \\
\hline 95th-Percentile Queue Length [veh] & 57.58 & 96.39 & 101.15 & 23.48 & 57.85 & 13.04 & 17.57 & 8.57 & 74.01 & 23.20 & 19.35 \\
\hline 95th-Percentile Queue Length [ft] & 1439.53 & 2409.85 & 2528.78 & 586.89 & 1446.34 & 325.94 & 439.20 & 214.15 & 1850.32 & 579.92 & 483.78 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 330.84 & 296.00 & 311.61 & 305.35 & 260.98 & 51.58 & 109.96 & 33.52 & 327.48 & 369.89 & 83.83 & 83.83 \\
\hline Movement LOS & F & F & F & F & F & D & F & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{304.90} & \multicolumn{3}{|c|}{233.18} & \multicolumn{3}{|c|}{226.82} & \multicolumn{3}{|c|}{189.48} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{258.74} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.592} \\
\hline
\end{tabular}

\section*{Sequence}
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 175.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.530
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 116 & 0 & 174 & 166 & 0 & 139 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1724 & 408 & 501 & 1431 & 316 & 608 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 463 & 110 & 135 & 385 & 85 & 163 \\
\hline Total Analysis Volume [veh/h] & 1854 & 439 & 539 & 1539 & 340 & 654 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 49 & 0 & 31 & 80 & 40 & 40 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 45 & 45 & 27 & 76 & 36 & 36 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.23 & 0.63 & 0.30 & 0.30 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.58 & 0.31 & 0.34 & 0.48 & 0.11 & 0.46 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1196 & 534 & 360 & 2022 & 930 & 427 \\
\hline d1, Uniform Delay [s] & 37.49 & 33.88 & 46.46 & 15.57 & 33.01 & 41.98 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 251.58 & 13.34 & 238.63 & 2.77 & 0.24 & 250.16 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.55 & 0.82 & 1.50 & 0.76 & 0.37 & 1.53 \\
\hline d, Delay for Lane Group [s/veh] & 289.07 & 47.22 & 285.09 & 18.33 & 33.25 & 292.14 \\
\hline Lane Group LOS & F & D & F & B & C & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 57.88 & 12.64 & 33.96 & 12.96 & 3.93 & 42.18 \\
\hline 50th-Percentile Queue Length [ft] & 1447.05 & 316.12 & 848.90 & 323.95 & 98.36 & 1054.54 \\
\hline 95th-Percentile Queue Length [veh] & 89.23 & 18.48 & 52.37 & 18.86 & 7.08 & 65.35 \\
\hline 95th-Percentile Queue Length [ft] & 2230.72 & 461.91 & 1309.16 & 471.54 & 177.05 & 1633.84 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 289.07 & 47.22 & 285.09 & 18.33 & 33.25 & 292.14 \\
\hline Movement LOS & F & D & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{242.77} & \multicolumn{2}{|c|}{87.52} & \multicolumn{2}{|c|}{203.59} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{175.38} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.530} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 61.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.041
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 654 & 0 & 0 & 672 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 85 & 658 & 1 & 28 & 677 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 29 & 224 & 0 & 10 & 231 \\
\hline Total Analysis Volume [veh/h] & 3 & 116 & 896 & 1 & 38 & 922 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.04 & 0.34 & 0.01 & 0.00 & 0.05 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 61.54 & 22.67 & 0.00 & 0.00 & 10.01 & 0.00 \\
\hline Movement LOS & F & C & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 1.74 & 1.74 & 0.00 & 0.00 & 0.16 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 43.52 & 43.52 & 0.00 & 0.00 & 3.96 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{23.65} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.40} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{1.62} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 12.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.000
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 171 & 0 & 0 & 137 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 171 & 0 & 38 & 137 & 0 & 34 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 58 & 0 & 13 & 46 & 0 & 11 \\
\hline Total Analysis Volume [veh/h] & 231 & 0 & 51 & 185 & 0 & 46 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.00 & 0.06 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.80 & 0.00 & 12.50 & 9.72 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.12 & 0.00 & 0.18 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.97 & 0.00 & 4.52 & 4.52 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.69} & \multicolumn{2}{|c|}{9.72} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{1.65} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): & 63.3 \\
Analysis Method: & HCM 2010 & Level Of Service: &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 265 & 333 & 83 & 66 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 454 & 466 & 169 & 172 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 169 & 174 & 63 & 64 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 677 & 694 & 252 & 256 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.81 & 7.23 & 7.23 & 16.85 & 15.38 & 5.32 & 1.32 \\
\hline 95th-Percentile Queue Length [ft] & 20.26 & 180.65 & 180.65 & 421.29 & 384.44 & 133.05 & 32.96 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{35.39} & \multicolumn{2}{|c|}{100.02} & \multicolumn{2}{|c|}{28.17} \\
\hline Approach LOS & \multicolumn{3}{|c|}{E} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{63.29} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 81.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 133 & 0 & 0 & 167 & 87 & 70 & 0 & 2 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 141 & 389 & 7 & 3 & 351 & 145 & 150 & 4 & 103 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 117 & 2 & 1 & 105 & 44 & 45 & 1 & 31 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 169 & 468 & 8 & 4 & 422 & 174 & 180 & 5 & 124 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 22.54 & 17.04 & 1.96 & 0.03 & 0.93 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 563.55 & 426.01 & 48.88 & 0.81 & 23.27 & 2.05 \\
\hline Approach Delay [s/veh] & 118.44 & 77.54 & \multicolumn{3}{|c|}{14.48} & 11.96 \\
\hline Approach LOS & F & F & B & F \\
\hline Intersection Delay [s/veh] & Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline ( &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Version 4.00-03
Traffic Volume - Future Total Volume


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\E+A+C AM_new.pdf

Scenario 9: \(E+A+C\) AM
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & \begin{tabular}{c} 
Winchester Road at Keller \\
Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.704 & 20.5 & C \\
\hline 2 & \begin{tabular}{c} 
Winchester Road at Pourroy \\
Road/Abelia Street
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.075 & 71.5 & E \\
\hline 3 & \begin{tabular}{c} 
Winchester Road at Whisper \\
Heights Parkway/Pourroy \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 0.863 & 32.3 & C \\
\hline 4 & \begin{tabular}{c} 
Winchester Road at Jean \\
Nicholas Road/Skyview Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.819 & 19.6 & B \\
\hline 5 & \begin{tabular}{c} 
Winchester Road at Max \\
Gillis Boulevard/Thompson \\
Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 1.602 & 214.6 & F
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 6 & \begin{tabular}{c} 
Winchester Road at Benton \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Right & 0.959 & 40.5 & D \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 27.7 & D \\
\hline 8 & \begin{tabular}{c} 
Jean Nicholas Road at Elliot \\
Road
\end{tabular} & Two-way stop & HCM 2010 & WB Left & 0.252 & 25.4 & D \\
\hline 9 & \begin{tabular}{c} 
Pourroy Road at Skyview \\
Road
\end{tabular} & All-way stop & HCM 2010 & EB Left & & 17.0 & C \\
\hline 10 & \begin{tabular}{c} 
Pourroy Road at Thompson \\
Road
\end{tabular} & All-way stop & HCM 2010 & NB Thru & & 22.9 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
20.5

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):\({ }^{-}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 323 & 51 & 0 & 0 & 49 & 8 & 2 & 11 & 98 & 0 & 38 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 324 & 755 & 3 & 0 & 1149 & 11 & 3 & 12 & 102 & 8 & 38 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 90 & 211 & 1 & 0 & 321 & 3 & 1 & 3 & 28 & 2 & 11 & 1 \\
\hline Total Analysis Volume [veh/h] & 362 & 843 & 3 & 0 & 1282 & 12 & 3 & 13 & 114 & 9 & 42 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 42 & 23 & 0 & 38 & 19 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 12 & 53 & 0 & 41 & 41 & 15 & 15 & 15 & 15 \\
\hline g / C, Green / Cycle & 0.15 & 0.66 & 0.00 & 0.51 & 0.51 & 0.19 & 0.19 & 0.19 & 0.19 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.12 & 0.50 & 0.00 & 0.40 & 0.01 & 0.02 & 0.08 & 0.06 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 770 & 1425 & 805 & 1425 \\
\hline c, Capacity [veh/h] & 464 & 1113 & 0 & 1644 & 734 & 196 & 264 & 202 & 264 \\
\hline d1, Uniform Delay [s] & 32.75 & 9.09 & 0.00 & 15.73 & 9.49 & 27.20 & 28.85 & 27.75 & 26.60 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 2.89 & 4.89 & 0.00 & 3.74 & 0.04 & 0.18 & 1.11 & 0.65 & 0.02 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.76 & 0.00 & 0.78 & 0.02 & 0.08 & 0.43 & 0.25 & 0.01 \\
\hline d, Delay for Lane Group [s/veh] & 35.64 & 13.98 & 0.00 & 19.47 & 9.53 & 27.38 & 29.96 & 28.39 & 26.61 \\
\hline Lane Group LOS & D & B & A & B & A & C & C & C & C & C \\
\hline Critical Lane Group & Yes & No & No & Yes & No & No & Yes & No & No \\
\hline \hline 50th-Percentile Queue Length [veh] & 3.14 & 6.64 & 0.00 & 7.63 & 0.08 & 0.26 & 1.96 & 0.84 & 0.05 \\
\hline 50th-Percentile Queue Length [ft] & 78.54 & 165.98 & 0.00 & 190.71 & 2.12 & 6.38 & 49.11 & 20.89 & 1.17 \\
\hline 95th-Percentile Queue Length [veh] & 5.65 & 10.86 & 0.00 & 12.16 & 0.15 & 0.46 & 3.54 & 1.50 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 141.37 & 271.62 & 0.00 & 303.95 & 3.82 & 11.48 & 88.40 & 37.60 & 2.11 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.64 & 13.98 & 13.98 & 0.00 & 19.47 & 9.53 & 27.38 & 27.38 & 29.96 & 28.39 & 28.39 & 26.61 \\
\hline Movement LOS & D & B & B & A & B & A & C & C & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{20.47} & \multicolumn{3}{|c|}{19.37} & \multicolumn{3}{|c|}{29.64} & \multicolumn{3}{|c|}{28.29} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{20.55} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.704} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes
\(\begin{array}{cc}\text { Delay (sec / veh): } & 71.5 \\ \text { Level Of Service: } & \text { E } \\ \text { Volume to Capacity }(\mathrm{v} / \mathrm{c}): & 1.075\end{array}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{T\|F} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 294 & 283 & 2 & 19 & 86 & 42 & 34 & 53 & 238 & 2 & 62 & 57 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 319 & 908 & 170 & 91 & 1081 & 99 & 74 & 68 & 270 & 185 & 74 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 88 & 251 & 47 & 25 & 299 & 27 & 20 & 19 & 75 & 51 & 20 & 32 \\
\hline Total Analysis Volume [veh/h] & 352 & 1003 & 188 & 101 & 1194 & 109 & 82 & 75 & 298 & 204 & 82 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 29 & 56 & 0 & 18 & 45 & 0 & 27 & 28 & 0 & 18 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 25 & 57 & 57 & 9 & 41 & 41 & 8 & 24 & 24 & 14 & 30 & 30 \\
\hline g / C, Green / Cycle & 0.21 & 0.47 & 0.47 & 0.08 & 0.34 & 0.34 & 0.06 & 0.20 & 0.20 & 0.12 & 0.25 & 0.25 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.22 & 0.31 & 0.13 & 0.06 & 0.37 & 0.08 & 0.05 & 0.04 & 0.21 & 0.13 & 0.05 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 333 & 1515 & 676 & 123 & 1096 & 489 & 102 & 332 & 283 & 186 & 421 & 358 \\
\hline d1, Uniform Delay [s] & 47.51 & 24.15 & 19.08 & 54.58 & 39.41 & 28.02 & 55.42 & 40.38 & 48.11 & 53.00 & 35.39 & 37.01 \\
\hline k, delay calibration & 0.48 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.47 & 0.47 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 64.73 & 2.29 & 1.02 & 12.66 & 55.01 & 1.05 & 13.42 & 0.34 & 67.21 & 91.10 & 0.22 & 0.61 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.06 & 0.66 & 0.28 & 0.82 & 1.09 & 0.22 & 0.80 & 0.23 & 1.05 & 1.09 & 0.19 & 0.36 \\
\hline d, Delay for Lane Group [s/veh] & 112.23 & 26.44 & 20.10 & 67.24 & 94.42 & 29.08 & 68.84 & 40.72 & 115.32 & 144.10 & 35.61 & 37.62 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 15.19 & 10.03 & 3.02 & 3.27 & 22.92 & 2.20 & 2.83 & 1.90 & 13.67 & 10.18 & 1.87 & 3.09 \\
\hline 50th-Percentile Queue Length [ft] & 379.72 & 250.75 & 75.49 & 81.68 & 572.99 & 55.03 & 70.72 & 47.53 & 341.72 & 254.55 & 46.72 & 77.31 \\
\hline 95th-Percentile Queue Length [veh] & 22.25 & 15.22 & 5.43 & 5.88 & 32.56 & 3.96 & 5.09 & 3.42 & 20.29 & 16.00 & 3.36 & 5.57 \\
\hline 95th-Percentile Queue Length [ft] & 556.30 & 380.60 & 135.87 & 147.02 & 813.92 & 99.06 & 127.30 & 85.55 & 507.33 & 399.90 & 84.10 & 139.16 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 112.23 & 26.44 & 20.10 & 67.24 & 94.42 & 29.08 & 68.84 & 40.72 & 115.32 & 144.10 & 35.61 & 37.62 \\
\hline Movement LOS & F & C & C & E & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{45.24} & \multicolumn{3}{|c|}{87.39} & \multicolumn{3}{|c|}{94.65} & \multicolumn{3}{|c|}{89.57} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{71.45} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{E} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.075} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
32.3

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):C
0.863

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7711 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 379 & 2 & 114 & 212 & 0 & 0 & 0 & 0 & 2 & 0 & 200 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1108 & 79 & 162 & 1376 & 12 & 18 & 10 & 12 & 152 & 21 & 279 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 308 & 22 & 45 & 382 & 3 & 5 & 3 & 3 & 42 & 6 & 78 \\
\hline Total Analysis Volume [veh/h] & 26 & 1231 & 88 & 180 & 1529 & 13 & 20 & 11 & 13 & 169 & 23 & 310 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 100 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 41 & 0 & 11 & 41 & 0 & 11 & 32 & 0 & 16 & 37 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 50 & 50 & 7 & 53 & 53 & 3 & 15 & 15 & 12 & 24 & 24 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.07 & 0.53 & 0.53 & 0.03 & 0.15 & 0.15 & 0.12 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.39 & 0.06 & 0.06 & 0.48 & 0.01 & 0.01 & 0.01 & 0.01 & 0.11 & 0.01 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 59 & 1591 & 710 & 220 & 1698 & 758 & 50 & 252 & 214 & 192 & 402 & 342 \\
\hline d1, Uniform Delay [s] & 47.18 & 20.50 & 13.43 & 45.90 & 21.05 & 11.07 & 47.60 & 36.38 & 36.47 & 43.31 & 29.33 & 36.97 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.31 & 0.11 & 0.16 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.99 & 3.73 & 0.36 & 7.39 & 8.11 & 0.04 & 5.20 & 0.07 & 0.12 & 27.72 & 0.06 & 12.37 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.44 & 0.77 & 0.12 & 0.82 & 0.90 & 0.02 & 0.40 & 0.04 & 0.06 & 0.88 & 0.06 & 0.91 \\
\hline d, Delay for Lane Group [s/veh] & 52.17 & 24.24 & 13.78 & 53.29 & 29.16 & 11.11 & 52.80 & 36.45 & 36.59 & 71.03 & 29.39 & 49.34 \\
\hline Lane Group LOS & D & C & B & D & C & B & D & D & D & E & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.68 & 10.73 & 1.00 & 2.31 & 15.05 & 0.13 & 0.56 & 0.24 & 0.28 & 5.56 & 0.43 & 8.41 \\
\hline 50th-Percentile Queue Length [ft] & 17.10 & 268.30 & 24.95 & 57.76 & 376.16 & 3.15 & 14.09 & 5.93 & 7.05 & 138.97 & 10.80 & 210.16 \\
\hline 95th-Percentile Queue Length [veh] & 1.23 & 16.10 & 1.80 & 4.16 & 21.41 & 0.23 & 1.01 & 0.43 & 0.51 & 9.43 & 0.78 & 13.16 \\
\hline 95th-Percentile Queue Length [ft] & 30.78 & 402.61 & 44.92 & 103.96 & 535.20 & 5.68 & 25.36 & 10.67 & 12.70 & 235.64 & 19.45 & 329.03 \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 52.17 & 24.24 & 13.78 & 53.29 & 29.16 & 11.11 & 52.80 & 36.45 & 36.59 & 71.03 & 29.39 & 49.34 \\
\hline Movement LOS & D & C & B & D & C & B & D & D & D & E & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{24.09} & \multicolumn{3}{|c|}{31.55} & \multicolumn{3}{|c|}{43.92} & \multicolumn{3}{|c|}{55.73} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{32.28} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.863} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03
Intersection Level Of Service Report
Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
19.6

B
0.819

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 301 & 0 & 0 & 169 & 45 & 80 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 90 & 988 & 4 & 6 & 1457 & 139 & 139 & 4 & 126 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 26 & 281 & 1 & 2 & 415 & 40 & 40 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 103 & 1125 & 5 & 7 & 1659 & 158 & 158 & 5 & 144 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 100 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 12 & 41 & 0 & 11 & 40 & 0 & 29 & 37 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 8 & 69 & 69 & 1 & 62 & 62 & 12 & 13 & 13 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.08 & 0.69 & 0.69 & 0.01 & 0.62 & 0.62 & 0.12 & 0.13 & 0.13 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.35 & 0.00 & 0.00 & 0.52 & 0.11 & 0.10 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 127 & 2197 & 981 & 21 & 1985 & 886 & 189 & 223 & 189 & 10 & 34 & 29 \\
\hline d1, Uniform Delay [s] & 45.34 & 7.51 & 4.88 & 48.96 & 14.89 & 8.05 & 43.15 & 37.75 & 41.86 & 49.51 & 48.15 & 48.24 \\
\hline k, delay calibration & 0.22 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 21.89 & 0.86 & 0.01 & 9.27 & 4.36 & 0.44 & 9.27 & 0.04 & 6.20 & 16.26 & 1.92 & 4.16 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.81 & 0.51 & 0.01 & 0.34 & 0.84 & 0.18 & 0.84 & 0.02 & 0.76 & 0.30 & 0.15 & 0.24 \\
\hline d, Delay for Lane Group [s/veh] & 67.24 & 8.37 & 4.89 & 58.23 & 19.25 & 8.49 & 52.42 & 37.79 & 48.06 & 65.77 & 50.07 & 52.40 \\
\hline Lane Group LOS & E & A & A & E & B & A & D & D & D & E & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 3.14 & 4.28 & 0.03 & 0.22 & 12.37 & 1.26 & 4.28 & 0.11 & 3.73 & 0.12 & 0.14 & 0.20 \\
\hline 50th-Percentile Queue Length [ft] & 78.62 & 106.91 & 0.64 & 5.45 & 309.19 & 31.43 & 106.94 & 2.72 & 93.13 & 2.98 & 3.51 & 5.12 \\
\hline 95th-Percentile Queue Length [veh] & 5.66 & 7.67 & 0.05 & 0.39 & 18.14 & 2.26 & 7.67 & 0.20 & 6.71 & 0.21 & 0.25 & 0.37 \\
\hline 95th-Percentile Queue Length [ft] & 141.52 & 191.69 & 1.16 & 9.81 & 453.38 & 56.58 & 191.74 & 4.90 & 167.63 & 5.36 & 6.32 & 9.22 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 67.24 & 8.37 & 4.89 & 58.23 & 19.25 & 8.49 & 52.42 & 37.79 & 48.06 & 65.77 & 50.07 & 52.40 \\
\hline Movement LOS & E & A & A & E & B & A & D & D & D & E & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.27} & \multicolumn{3}{|c|}{18.47} & \multicolumn{3}{|c|}{50.14} & \multicolumn{3}{|c|}{54.30} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{19.61} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.819} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
214.6

F
1.602

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 59 & 136 & 0 & 45 & 74 & 51 & 86 & 3 & 22 & 0 & 3 & 80 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 432 & 816 & 99 & 67 & 1400 & 141 & 155 & 126 & 578 & 217 & 245 & 98 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 120 & 226 & 27 & 19 & 388 & 39 & 43 & 35 & 160 & 60 & 68 & 27 \\
\hline Total Analysis Volume [veh/h] & 479 & 906 & 110 & 74 & 1554 & 156 & 172 & 140 & 642 & 241 & 272 & 109 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 34 & 0 & 32 & 40 & 0 & 28 & 38 & 38 & 16 & 26 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 51 & 51 & 7 & 36 & 36 & 15 & 34 & 34 & 12 & 31 \\
\hline g / C, Green / Cycle & 0.18 & 0.43 & 0.43 & 0.06 & 0.30 & 0.30 & 0.12 & 0.28 & 0.28 & 0.10 & 0.26 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.31 & 0.31 & 0.05 & 0.49 & 0.11 & 0.11 & 0.08 & 0.45 & 0.15 & 0.24 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1614 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1596 \\
\hline c, Capacity [veh/h] & 293 & 715 & 688 & 93 & 961 & 429 & 198 & 473 & 402 & 160 & 4412 \\
\hline d1, Uniform Delay [s] & 49.00 & 28.49 & 28.63 & 55.82 & 41.93 & 32.91 & 51.60 & 33.74 & 43.08 & 54.00 & 43.39 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.39 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 301.32 & 6.18 & 6.64 & 14.31 & 282.28 & 2.38 & 10.93 & 0.35 & 280.16 & 258.38 & 24.60 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.64 & 0.72 & 0.73 & 0.80 & 1.62 & 0.36 & 0.87 & 0.30 & 1.60 & 1.51 & 0.92 \\
\hline d, Delay for Lane Group [s/veh] & 350.32 & 34.67 & 35.27 & 70.13 & 324.22 & 35.28 & 62.52 & 34.09 & 323.24 & 312.38 & 67.98 \\
\hline Lane Group LOS & F & C & D & E & F & D & E & C & F & F & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 32.82 & 12.46 & 12.25 & 2.49 & 50.96 & 3.66 & 5.67 & 3.26 & 43.06 & 16.28 & 13.74 \\
\hline 50th-Percentile Queue Length [ft] & 820.51 & 311.52 & 306.37 & 62.33 & 1273.94 & 91.57 & 141.85 & 81.44 & 1076.46 & 407.03 & 343.47 \\
\hline 95th-Percentile Queue Length [veh] & 51.34 & 18.25 & 18.00 & 4.49 & 79.07 & 6.59 & 9.58 & 5.86 & 67.18 & 26.18 & 19.82 \\
\hline 95th-Percentile Queue Length [ft] & 1283.39 & 456.25 & 449.90 & 112.19 & 1976.84 & 164.83 & 239.51 & 146.58 & 1679.60 & 654.57 & 495.44 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 350.32 & 34.93 & 35.27 & 70.13 & 324.22 & 35.28 & 62.52 & 34.09 & 323.24 & 312.38 & 67.98 & 67.98 \\
\hline Movement LOS & F & C & D & E & F & D & E & C & F & F & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{136.01} & \multicolumn{3}{|c|}{288.41} & \multicolumn{3}{|c|}{233.80} & \multicolumn{3}{|c|}{162.68} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{214.64} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.602} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 40.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.959
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 113 & 0 & 47 & 49 & 0 & 82 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1028 & 225 & 370 & 1813 & 389 & 335 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 276 & 60 & 99 & 487 & 105 & 90 \\
\hline Total Analysis Volume [veh/h] & 1105 & 242 & 398 & 1949 & 418 & 360 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 38 & 0 & 41 & 79 & 41 & 41 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 44 & 44 & 32 & 80 & 32 & 32 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.26 & 0.67 & 0.27 & 0.27 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.17 & 0.25 & 0.61 & 0.13 & 0.25 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1172 & 523 & 423 & 2124 & 831 & 382 \\
\hline d1, Uniform Delay [s] & 36.71 & 28.91 & 43.19 & 17.25 & 37.14 & 43.00 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.32 & 0.50 & 0.11 & 0.33 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 15.67 & 2.92 & 23.18 & 7.81 & 0.47 & 25.42 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.94 & 0.46 & 0.94 & 0.92 & 0.50 & 0.94 \\
\hline d, Delay for Lane Group [s/veh] & 52.38 & 31.84 & 66.37 & 25.05 & 37.62 & 68.42 \\
\hline Lane Group LOS & D & C & E & C & D & E \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 16.98 & 5.40 & 13.58 & 20.16 & 5.25 & 13.05 \\
\hline 50th-Percentile Queue Length [ft] & 424.49 & 135.05 & 339.41 & 504.07 & 131.23 & 326.37 \\
\hline 95th-Percentile Queue Length [veh] & 23.74 & 9.21 & 19.62 & 27.53 & 9.01 & 18.98 \\
\hline 95th-Percentile Queue Length [ft] & 593.44 & 230.35 & 490.48 & 688.17 & 225.16 & 474.51 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 52.38 & 31.84 & 66.37 & 25.05 & 37.62 & 68.42 \\
\hline Movement LOS & D & C & E & C & D & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{48.69} & \multicolumn{2}{|c|}{32.06} & \multicolumn{2}{|c|}{51.87} \\
\hline Approach LOS & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{40.51} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.959} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 27.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.018
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 325 & 0 & 0 & 398 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 82 & 329 & 3 & 92 & 401 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 28 & 112 & 1 & 31 & 137 \\
\hline Total Analysis Volume [veh/h] & 3 & 112 & 448 & 4 & 125 & 546 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.18 & 0.00 & 0.00 & 0.11 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 27.74 & 12.49 & 0.00 & 0.00 & 8.66 & 0.00 \\
\hline Movement LOS & D & B & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.75 & 0.75 & 0.00 & 0.00 & 0.38 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 18.68 & 18.68 & 0.00 & 0.00 & 9.50 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{12.89} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.61} \\
\hline Approach LOS & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.07} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec /veh): & 25.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.252
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 46 & 0 & 0 & 81 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 243 & 14 & 98 & 225 & 51 & 132 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 82 & 5 & 33 & 76 & 17 & 45 \\
\hline Total Analysis Volume [veh/h] & 328 & 19 & 132 & 304 & 69 & 178 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.11 & 0.00 & 0.25 & 0.25 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.33 & 0.00 & 25.44 & 17.38 \\
\hline Movement LOS & A & A & A & A & D & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.37 & 0.00 & 2.80 & 2.80 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 9.14 & 0.00 & 70.04 & 70.04 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.52} & \multicolumn{2}{|c|}{19.63} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{5.78} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): & Level Of Service: \\
Analysis Method: & HCM 2010 & & \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 160 & 91 & 23 & 40 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 279 & 244 & 123 & 158 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 104 & 91 & 46 & 59 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 416 & 364 & 183 & 235 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 1.05 & 2.16 & 2.16 & 3.47 & 3.08 & 3.09 & 1.17 \\
\hline 95th-Percentile Queue Length [ft] & 26.33 & 53.91 & 53.91 & 86.83 & 77.11 & 77.37 & 29.17 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.31} & \multicolumn{2}{|c|}{18.43} & \multicolumn{2}{|c|}{17.15} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{16.96} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 10: Pourroy Road at Thompson Road
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 22.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
t
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 80 & 0 & 0 & 45 & 24 & 41 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 120 & 253 & 0 & 1 & 299 & 90 & 87 & 3 & 116 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 76 & 0 & 0 & 90 & 27 & 26 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 144 & 304 & 0 & 1 & 359 & 108 & 105 & 4 & 139 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 6.91 & 7.13 & 0.85 & 0.02 & 0.98 & 0.10 \\
\hline 95th-Percentile Queue Length [ft] & 172.80 & 178.13 & 21.32 & 0.60 & 24.51 & 2.62 \\
\hline Approach Delay [s/veh] & 26.15 & 25.92 & \multicolumn{3}{|c|}{11.84} & 11.39 \\
\hline Approach LOS & D & D & \multicolumn{3}{|c|}{22.86} \\
\hline Intersection Delay [s/veh] & C \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Version 4.00-03
Traffic Volume - Future Total Volume


Version 4.00-03
Traffic Volume - Future Total Volume


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\E+A+C PM_new.pdf

Scenario 10: E+A+C PM
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & \begin{tabular}{c} 
Winchester Road at Keller \\
Road
\end{tabular} & Signalized & HCM 2010 & EB Right & 1.663 & 219.2 & F \\
\hline 2 & \begin{tabular}{c} 
Winchester Road at Pourroy \\
Road/Abelia Street
\end{tabular} & Signalized & HCM 2010 & NB Left & 1.539 & 208.1 & F \\
\hline 3 & \begin{tabular}{c} 
Winchester Road at Whisper \\
Heights Parkway/Pourroy \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.316 & 152.0 & F \\
\hline 4 & \begin{tabular}{c} 
Winchester Road at Jean \\
Nicholas Road/Skyview Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.948 & 39.6 & D \\
\hline 5 & \begin{tabular}{c} 
Winchester Road at Max \\
Gillis Boulevard/Thompson \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.592 & 258.7 & F \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 6 & \begin{tabular}{c} 
Winchester Road at Benton \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Right & 1.530 & 175.4 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.041 & 61.5 & F \\
\hline 8 & \begin{tabular}{c} 
Jean Nicholas Road at Elliot \\
Road
\end{tabular} & Two-way stop & HCM 2010 & WB Left & 0.181 & 24.4 & C \\
\hline 9 & \begin{tabular}{c} 
Pourroy Road at Skyview \\
Road
\end{tabular} & All-way stop & HCM 2010 & SB Thru & & 63.3 & F \\
\hline 10 & \begin{tabular}{c} 
Pourroy Road at Thompson \\
Road
\end{tabular} & All-way stop & HCM 2010 & NB Thru & & 81.5 & F \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03
Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
219.2
F
1.663

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 526 & 82 & 0 & 0 & 91 & 12 & 20 & 98 & 828 & 0 & 62 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 530 & 1268 & 3 & 2 & 937 & 13 & 22 & 100 & 829 & 3 & 62 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 354 & 1 & 1 & 261 & 4 & 6 & 28 & 231 & 1 & 17 & 0 \\
\hline Total Analysis Volume [veh/h] & 592 & 1415 & 3 & 2 & 1046 & 15 & 25 & 112 & 925 & 3 & 69 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 58 & 0 & 11 & 43 & 0 & 0 & 51 & 0 & 0 & 51 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 61 & 0 & 39 & 39 & 47 & 47 & 47 & 47 \\
\hline g / C, Green / Cycle & 0.18 & 0.50 & 0.00 & 0.33 & 0.33 & 0.39 & 0.39 & 0.39 & 0.39 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.19 & 0.85 & 0.00 & 0.33 & 0.01 & 0.15 & 0.65 & 0.04 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1676 & 1597 & 3192 & 1425 & 929 & 1425 & 1654 & 1425 \\
\hline c, Capacity [veh/h] & 569 & 846 & 7 & 1039 & 464 & 399 & 557 & 678 & 557 \\
\hline d1, Uniform Delay [s] & 48.97 & 29.70 & 59.55 & 40.46 & 27.58 & 26.00 & 36.54 & 23.25 & 22.27 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 29.15 & 309.42 & 22.54 & 29.53 & 0.13 & 0.51 & 305.17 & 0.07 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.04 & 1.68 & 0.30 & 1.01 & 0.03 & 0.34 & 1.66 & 0.11 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 78.12 & 339.12 & 82.09 & 69.99 & 27.70 & 26.51 & 341.71 & 23.32 & 22.27 \\
\hline Lane Group LOS & F & F & F & F & C & C & F & C & C \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 10.23 & 93.27 & 0.10 & 18.14 & 0.29 & 2.65 & 63.14 & 1.32 & 0.02 \\
\hline 50th-Percentile Queue Length [ft] & 255.67 & 2331.75 & 2.50 & 453.42 & 7.24 & 66.32 & 1578.39 & 33.05 & 0.44 \\
\hline 95th-Percentile Queue Length [veh] & 15.78 & 146.39 & 0.18 & 25.23 & 0.52 & 4.78 & 99.11 & 2.38 & 0.03 \\
\hline 95th-Percentile Queue Length [ft] & 394.44 & 3659.69 & 4.49 & 630.79 & 13.04 & 119.38 & 2477.83 & 59.49 & 0.79 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.12 & 339.12 & 339.12 & 82.09 & 69.99 & 27.70 & 26.51 & 26.51 & 341.71 & 23.32 & 23.32 & 22.27 \\
\hline Movement LOS & F & F & F & F & F & C & C & C & F & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{262.25} & \multicolumn{3}{|c|}{69.41} & \multicolumn{3}{|c|}{301.05} & \multicolumn{3}{|c|}{23.31} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{219.18} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.663} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:
Signalized
HCM 2010
15 minutes
Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
208.1
F
1.539

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 495 & 447 & 7 & 142 & 706 & 71 & 69 & 104 & 481 & 6 & 106 & 92 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 511 & 1608 & 146 & 177 & 1515 & 87 & 84 & 109 & 499 & 100 & 113 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 141 & 444 & 40 & 49 & 419 & 24 & 23 & 30 & 138 & 28 & 31 & 32 \\
\hline Total Analysis Volume [veh/h] & 565 & 1777 & 161 & 196 & 1674 & 96 & 93 & 120 & 551 & 110 & 125 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 31 & 61 & 0 & 14 & 44 & 0 & 26 & 34 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 57 & 57 & 10 & 40 & 40 & 9 & 30 & 30 & 7 & 28 & 28 \\
\hline g / C, Green / Cycle & 0.22 & 0.48 & 0.48 & 0.08 & 0.33 & 0.33 & 0.07 & 0.25 & 0.25 & 0.06 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.56 & 0.11 & 0.12 & 0.52 & 0.07 & 0.06 & 0.07 & 0.39 & 0.07 & 0.07 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 359 & 1519 & 678 & 133 & 1067 & 476 & 115 & 417 & 355 & 93 & 395 & 336 \\
\hline d1, Uniform Delay [s] & 46.50 & 31.44 & 18.58 & 55.00 & 39.94 & 28.51 & 54.90 & 36.45 & 45.06 & 56.50 & 37.88 & 38.55 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.44 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 270.83 & 83.82 & 0.82 & 248.77 & 260.55 & 0.95 & 12.73 & 0.38 & 262.22 & 143.62 & 0.46 & 0.72 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.57 & 1.17 & 0.24 & 1.47 & 1.57 & 0.20 & 0.81 & 0.29 & 1.55 & 1.18 & 0.32 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 317.33 & 115.26 & 19.40 & 303.77 & 300.50 & 29.46 & 67.62 & 36.82 & 307.28 & 200.11 & 38.34 & 39.27 \\
\hline Lane Group LOS & F & F & B & F & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 36.93 & 36.54 & 2.52 & 12.98 & 52.82 & 1.95 & 3.18 & 2.90 & 36.31 & 6.47 & 3.01 & 3.17 \\
\hline 50th-Percentile Queue Length [ft] & 923.14 & 913.42 & 62.90 & 324.57 & 1320.53 & 48.77 & 79.39 & 72.60 & 907.68 & 161.75 & 75.19 & 79.33 \\
\hline 95th-Percentile Queue Length [veh] & 57.29 & 52.01 & 4.53 & 21.25 & 81.62 & 3.51 & 5.72 & 5.23 & 56.57 & 11.16 & 5.41 & 5.71 \\
\hline 95th-Percentile Queue Length [ft] & 1432.27 & 1300.23 & 113.22 & 531.36 & 2040.57 & 87.78 & 142.91 & 130.69 & 1414.17 & 279.01 & 135.35 & 142.80 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 317.33 & 115.26 & 19.40 & 303.77 & 300.50 & 29.46 & 67.62 & 36.82 & 307.28 & 200.11 & 38.34 & 39.27 \\
\hline Movement LOS & F & F & B & F & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{154.71} & \multicolumn{3}{|c|}{287.59} & \multicolumn{3}{|c|}{235.63} & \multicolumn{3}{|c|}{87.55} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{208.06} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.539} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
152.0

F
1.316

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 618 & 10 & 416 & 777 & 0 & 0 & 0 & 0 & 9 & 0 & 331 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1873 & 188 & 502 & 1710 & 8 & 6 & 15 & 25 & 131 & 27 & 391 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 520 & 52 & 139 & 475 & 2 & 2 & 4 & 7 & 36 & 8 & 109 \\
\hline Total Analysis Volume [veh/h] & 27 & 2081 & 209 & 558 & 1900 & 9 & 7 & 17 & 28 & 146 & 30 & 434 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 59 & 0 & 20 & 68 & 0 & 11 & 29 & 0 & 12 & 30 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 55 & 55 & 16 & 67 & 67 & 1 & 25 & 25 & 8 & 31 & 31 \\
\hline g / C, Green / Cycle & 0.03 & 0.46 & 0.46 & 0.13 & 0.56 & 0.56 & 0.01 & 0.21 & 0.21 & 0.07 & 0.26 & 0.26 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.65 & 0.15 & 0.18 & 0.60 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.30 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 55 & 1468 & 655 & 413 & 1783 & 796 & 19 & 347 & 295 & 106 & 438 & 372 \\
\hline d1, Uniform Delay [s] & 56.88 & 32.40 & 20.51 & 52.00 & 26.48 & 11.76 & 58.81 & 38.14 & 38.51 & 56.00 & 33.34 & 44.33 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.19 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.53 & 191.95 & 1.28 & 163.37 & 41.23 & 0.03 & 10.89 & 0.06 & 0.14 & 215.55 & 0.07 & 99.98 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.49 & 1.42 & 0.32 & 1.35 & 1.07 & 0.01 & 0.36 & 0.05 & 0.10 & 1.37 & 0.07 & 1.17 \\
\hline d, Delay for Lane Group [s/veh] & 63.41 & 224.35 & 21.79 & 215.37 & 67.71 & 11.79 & 69.70 & 38.20 & 38.65 & 271.54 & 33.41 & 144.30 \\
\hline Lane Group LOS & E & F & C & F & F & B & E & D & D & F & C & F \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.87 & 58.18 & 3.66 & 15.31 & 31.86 & 0.10 & 0.27 & 0.41 & 0.69 & 9.59 & 0.67 & 21.28 \\
\hline 50th-Percentile Queue Length [ft] & 21.84 & 1454.43 & 91.60 & 382.82 & 796.51 & 2.57 & 6.79 & 10.34 & 17.25 & 239.85 & 16.78 & 532.03 \\
\hline 95th-Percentile Queue Length [veh] & 1.57 & 87.90 & 6.60 & 24.41 & 43.30 & 0.19 & 0.49 & 0.74 & 1.24 & 16.06 & 1.21 & 31.46 \\
\hline 95th-Percentile Queue Length [ft] & 39.31 & 2197.45 & 164.88 & 610.18 & 1082.46 & 4.63 & 12.22 & 18.61 & 31.05 & 401.60 & 30.21 & 786.38 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 63.41 & 224.35 & 21.79 & 215.37 & 67.71 & 11.79 & 69.70 & 38.20 & 38.65 & 271.54 & 33.41 & 144.30 \\
\hline Movement LOS & E & F & C & F & F & B & E & D & D & F & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{204.21} & \multicolumn{3}{|c|}{100.91} & \multicolumn{3}{|c|}{42.68} & \multicolumn{3}{|c|}{169.30} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{151.96} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.316} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\(\begin{array}{cc}\text { Delay (sec / veh): } & 39.6 \\ \text { Level Of Service: } & \mathrm{D} \\ \text { Volume to Capacity }(\mathrm{v} / \mathrm{c}): & 0.948\end{array}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 4 & 495 & 0 & 0 & 619 & 167 & 133 & 0 & 4 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 158 & 1827 & 5 & 2 & 1514 & 214 & 225 & 1 & 89 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 45 & 520 & 1 & 1 & 431 & 61 & 64 & 0 & 25 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 180 & 2081 & 6 & 2 & 1724 & 244 & 256 & 1 & 101 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 18 & 66 & 0 & 11 & 59 & 0 & 24 & 32 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 14 & 81 & 81 & 0 & 67 & 67 & 20 & 21 & 21 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.12 & 0.68 & 0.68 & 0.00 & 0.56 & 0.56 & 0.17 & 0.18 & 0.18 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.65 & 0.00 & 0.00 & 0.54 & 0.17 & 0.16 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 187 & 2154 & 961 & 7 & 1794 & 801 & 266 & 296 & 252 & 18 & 35 & 30 \\
\hline d1, Uniform Delay [s] & 52.75 & 18.25 & 6.38 & 59.58 & 25.03 & 13.89 & 49.62 & 40.70 & 43.78 & 58.92 & 57.59 & 57.97 \\
\hline k, delay calibration & 0.38 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.40 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 48.89 & 12.93 & 0.01 & 22.38 & 13.83 & 0.98 & 40.55 & 0.00 & 1.03 & 10.93 & 0.66 & 7.37 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.96 & 0.97 & 0.01 & 0.29 & 0.96 & 0.30 & 0.96 & 0.00 & 0.40 & 0.34 & 0.06 & 0.37 \\
\hline d, Delay for Lane Group [s/veh] & 101.64 & 31.18 & 6.39 & 81.96 & 38.86 & 14.87 & 90.17 & 40.71 & 44.81 & 69.85 & 58.26 & 65.34 \\
\hline Lane Group LOS & F & C & A & F & D & B & F & D & D & E & E & E \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 7.69 & 24.22 & 0.04 & 0.10 & 23.25 & 3.33 & 10.59 & 0.02 & 2.74 & 0.23 & 0.07 & 0.39 \\
\hline 50th-Percentile Queue Length [ft] & 192.31 & 605.48 & 1.10 & 2.52 & 581.27 & 83.24 & 264.75 & 0.62 & 68.56 & 5.87 & 1.65 & 9.78 \\
\hline 95th-Percentile Queue Length [veh] & 12.24 & 32.29 & 0.08 & 0.18 & 31.16 & 5.99 & 15.93 & 0.04 & 4.94 & 0.42 & 0.12 & 0.70 \\
\hline 95th-Percentile Queue Length [ft] & 306.03 & 807.25 & 1.99 & 4.53 & 778.97 & 149.83 & 398.17 & 1.12 & 123.40 & 10.57 & 2.97 & 17.60 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 101.64 & 31.18 & 6.39 & 81.96 & 38.86 & 14.87 & 90.17 & 40.71 & 44.81 & 69.85 & 58.26 & 65.34 \\
\hline Movement LOS & F & C & A & F & D & B & F & D & D & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{36.71} & \multicolumn{3}{|c|}{35.93} & \multicolumn{3}{|c|}{77.24} & \multicolumn{3}{|c|}{66.02} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{39.64} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.948} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
258.7

F
1.592

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 45 & 210 & 0 & 167 & 268 & 188 & 156 & 8 & 72 & 0 & 8 & 133 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 499 & 1612 & 208 & 196 & 1133 & 251 & 233 & 189 & 634 & 176 & 146 & 154 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 138 & 447 & 58 & 54 & 314 & 70 & 65 & 52 & 176 & 49 & 41 & 43 \\
\hline Total Analysis Volume [veh/h] & 554 & 1789 & 231 & 218 & 1257 & 279 & 259 & 210 & 704 & 195 & 162 & 171 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 30 & 51 & 0 & 15 & 36 & 0 & 23 & 41 & 41 & 13 & 31 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 26 & 47 & 47 & 11 & 32 & 32 & 19 & 37 & 37 & 9 & 27 \\
\hline g / C, Green / Cycle & 0.22 & 0.39 & 0.39 & 0.09 & 0.27 & 0.27 & 0.16 & 0.31 & 0.31 & 0.08 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.60 & 0.63 & 0.14 & 0.39 & 0.20 & 0.16 & 0.13 & 0.49 & 0.12 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1611 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1537 \\
\hline c, Capacity [veh/h] & 346 & 659 & 633 & 147 & 856 & 382 & 253 & 514 & 437 & 120 & 343 \\
\hline d1, Uniform Delay [s] & 47.01 & 36.43 & 36.43 & 54.50 & 43.92 & 39.96 & 50.50 & 33.00 & 41.62 & 55.50 & 46.21 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.44 & 0.11 & 0.50 & 0.50 & 0.42 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 283.83 & 247.53 & 275.18 & 250.85 & 217.06 & 11.62 & 59.46 & 0.52 & 285.86 & 314.39 & 37.62 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.60 & 1.53 & 1.60 & 1.48 & 1.47 & 0.73 & 1.02 & 0.41 & 1.61 & 1.62 & 0.97 \\
\hline d, Delay for Lane Group [s/veh] & 330.84 & 283.97 & 311.61 & 305.35 & 260.98 & 51.58 & 109.96 & 33.52 & 327.48 & 369.89 & 83.83 \\
\hline Lane Group LOS & F & F & F & F & F & D & F & C & F & F & F \\
\hline Critical Lane Group & No & No & Yes & Yes & No & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 37.03 & 62.92 & 65.34 & 14.48 & 37.74 & 8.31 & 11.75 & 4.93 & 47.40 & 14.14 & 13.36 \\
\hline 50th-Percentile Queue Length [ft] & 925.82 & 1572.89 & 1633.43 & 361.88 & 943.62 & 207.75 & 293.69 & 123.15 & 1185.09 & 353.44 & 333.93 \\
\hline 95th-Percentile Queue Length [veh] & 57.58 & 96.39 & 101.15 & 23.48 & 57.85 & 13.04 & 17.57 & 8.57 & 74.01 & 23.20 & 19.35 \\
\hline 95th-Percentile Queue Length [ft] & 1439.53 & 2409.85 & 2528.78 & 586.89 & 1446.34 & 325.94 & 439.20 & 214.15 & 1850.32 & 579.92 & 483.78 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 330.84 & 296.00 & 311.61 & 305.35 & 260.98 & 51.58 & 109.96 & 33.52 & 327.48 & 369.89 & 83.83 & 83.83 \\
\hline Movement LOS & F & F & F & F & F & D & F & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{304.90} & \multicolumn{3}{|c|}{233.18} & \multicolumn{3}{|c|}{226.82} & \multicolumn{3}{|c|}{189.48} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{258.74} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.592} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 175.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.530
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 116 & 0 & 174 & 166 & 0 & 139 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1724 & 408 & 501 & 1431 & 316 & 608 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 463 & 110 & 135 & 385 & 85 & 163 \\
\hline Total Analysis Volume [veh/h] & 1854 & 439 & 539 & 1539 & 340 & 654 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 49 & 0 & 31 & 80 & 40 & 40 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 45 & 45 & 27 & 76 & 36 & 36 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.37 & 0.37 & 0.23 & 0.63 & 0.30 & 0.30 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.58 & 0.31 & 0.34 & 0.48 & 0.11 & 0.46 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1196 & 534 & 360 & 2022 & 930 & 427 \\
\hline d1, Uniform Delay [s] & 37.49 & 33.88 & 46.46 & 15.57 & 33.01 & 41.98 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 251.58 & 13.34 & 238.63 & 2.77 & 0.24 & 250.16 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.55 & 0.82 & 1.50 & 0.76 & 0.37 & 1.53 \\
\hline d, Delay for Lane Group [s/veh] & 289.07 & 47.22 & 285.09 & 18.33 & 33.25 & 292.14 \\
\hline Lane Group LOS & F & D & F & B & F & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 57.88 & 12.64 & 33.96 & 12.96 & 3.93 & 42.18 \\
\hline 50th-Percentile Queue Length [ft] & 1447.05 & 316.12 & 848.90 & 323.95 & 98.36 & 1054.54 \\
\hline 95th-Percentile Queue Length [veh] & 89.23 & 18.48 & 52.37 & 18.86 & 7.08 & 65.35 \\
\hline 95th-Percentile Queue Length [ft] & 2230.72 & 461.91 & 1309.16 & 471.54 & 177.05 & 1633.84 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 289.07 & 47.22 & 285.09 & 18.33 & 33.25 & 292.14 \\
\hline Movement LOS & F & D & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{242.77} & \multicolumn{2}{|c|}{87.52} & \multicolumn{2}{|c|}{203.59} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{175.38} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.530} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 61.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.041
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 654 & 0 & 0 & 672 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 85 & 658 & 1 & 28 & 677 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 29 & 224 & 0 & 10 & 231 \\
\hline Total Analysis Volume [veh/h] & 3 & 116 & 896 & 1 & 38 & 922 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.04 & 0.34 & 0.01 & 0.00 & 0.05 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 61.54 & 22.67 & 0.00 & 0.00 & 10.01 & 0.00 \\
\hline Movement LOS & F & C & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 1.74 & 1.74 & 0.00 & 0.00 & 0.16 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 43.52 & 43.52 & 0.00 & 0.00 & 3.96 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{23.65} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.40} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{1.62} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 24.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.181
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 171 & 0 & 0 & 137 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 334 & 34 & 42 & 251 & 38 & 127 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 113 & 11 & 14 & 85 & 13 & 43 \\
\hline Total Analysis Volume [veh/h] & 451 & 46 & 57 & 339 & 51 & 172 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.05 & 0.00 & 0.18 & 0.29 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.56 & 0.00 & 24.40 & 17.73 \\
\hline Movement LOS & A & A & A & A & C & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.17 & 0.00 & 2.49 & 2.49 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 4.23 & 0.00 & 62.14 & 62.14 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.23} & \multicolumn{2}{|c|}{19.26} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.29} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{C} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): & 63.3 \\
Analysis Method: & HCM 2010 & Level Of Service: &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 265 & 333 & 83 & 66 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 454 & 466 & 169 & 172 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 169 & 174 & 63 & 64 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 677 & 694 & 252 & 256 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.81 & 7.23 & 7.23 & 16.85 & 15.38 & 5.32 & 1.32 \\
\hline 95th-Percentile Queue Length [ft] & 20.26 & 180.65 & 180.65 & 421.29 & 384.44 & 133.05 & 32.96 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{35.39} & \multicolumn{2}{|c|}{100.02} & \multicolumn{2}{|c|}{28.17} \\
\hline Approach LOS & \multicolumn{3}{|c|}{E} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{63.29} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
81.5

F

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\ddagger
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 133 & 0 & 0 & 167 & 87 & 70 & 0 & 2 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 141 & 389 & 7 & 3 & 351 & 145 & 150 & 4 & 103 & 5 & 3 & 1 & 0.8 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 117 & 2 & 1 & 105 & 44 & 45 & 1 & 31 & 2 & 1 & 0 & 1 \\
\hline Total Analysis Volume [veh/h] & 169 & 468 & 8 & 4 & 422 & 174 & 180 & 5 & 124 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03


Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Vistro File: Q:\... \({ }^{\text {ttvcs1.vistro }}\)

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Left & 0.704 & 20.7 & C \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 1.075 & 71.5 & E \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Left & 0.863 & 32.3 & C \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & WB Left & 0.934 & 29.0 & C \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & NB Left & 1.602 & 214.6 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.959 & 40.5 & D \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.018 & 27.7 & D \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.000 & 10.6 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & EB Left & & 17.0 & C \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 22.9 & C \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 20.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.704
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
4
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 323 & 51 & 0 & 0 & 49 & 8 & 2 & 11 & 98 & 0 & 38 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 324 & 755 & 3 & 0 & 1149 & 11 & 3 & 12 & 102 & 8 & 38 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 90 & 211 & 1 & 0 & 321 & 3 & 1 & 3 & 28 & 2 & 11 & 1 \\
\hline Total Analysis Volume [veh/h] & 362 & 843 & 3 & 0 & 1282 & 12 & 3 & 13 & 114 & 9 & 42 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 80 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 38 & 28 & 0 & 33 & 23 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 12 & 53 & 0 & 41 & 41 & 15 & 15 & 15 & 15 \\
\hline g / C, Green / Cycle & 0.15 & 0.66 & 0.00 & 0.51 & 0.51 & 0.19 & 0.19 & 0.19 & 0.19 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.12 & 0.50 & 0.00 & 0.40 & 0.01 & 0.02 & 0.08 & 0.06 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 766 & 1425 & 801 & 1425 \\
\hline c, Capacity [veh/h] & 463 & 1111 & 0 & 1640 & 732 & 197 & 266 & 203 & 266 \\
\hline d1, Uniform Delay [s] & 32.77 & 9.18 & 0.00 & 15.81 & 9.54 & 27.11 & 28.74 & 27.65 & 26.50 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 2.92 & 4.95 & 0.00 & 3.79 & 0.04 & 0.18 & 1.09 & 0.64 & 0.02 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.78 & 0.76 & 0.00 & 0.78 & 0.02 & 0.08 & 0.43 & 0.25 & 0.01 \\
\hline d, Delay for Lane Group [s/veh] & 35.68 & 14.12 & 0.00 & 19.60 & 9.58 & 27.28 & 29.83 & 28.29 & 26.51 \\
\hline Lane Group LOS & D & B & A & B & A & C & C & C & C \\
\hline Critical Lane Group & Yes & No & No & Yes & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 3.14 & 6.68 & 0.00 & 7.65 & 0.09 & 0.25 & 1.96 & 0.83 & 0.05 \\
\hline 50th-Percentile Queue Length [ft] & 78.59 & 167.06 & 0.00 & 191.27 & 2.13 & 6.37 & 49.03 & 20.86 & 1.17 \\
\hline 95th-Percentile Queue Length [veh] & 5.66 & 10.92 & 0.00 & 12.19 & 0.15 & 0.46 & 3.53 & 1.50 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 141.47 & 273.04 & 0.00 & 304.68 & 3.83 & 11.46 & 88.25 & 37.56 & 2.11 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 35.68 & 14.12 & 14.12 & 0.00 & 19.60 & 9.58 & 27.28 & 27.28 & 29.83 & 28.29 & 28.29 & 26.51 \\
\hline Movement LOS & D & B & B & A & B & A & C & C & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{20.58} & \multicolumn{3}{|c|}{19.51} & \multicolumn{3}{|c|}{29.51} & \multicolumn{3}{|c|}{28.20} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{20.65} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.704} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes
\(\begin{array}{cc}\text { Delay (sec / veh): } & 71.5 \\ \text { Level Of Service: } & \text { E } \\ \text { Volume to Capacity }(\mathrm{v} / \mathrm{c}): & 1.075\end{array}\)

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 294 & 283 & 2 & 19 & 86 & 42 & 34 & 53 & 238 & 2 & 62 & 57 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 319 & 908 & 170 & 91 & 1081 & 99 & 74 & 68 & 270 & 185 & 74 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 88 & 251 & 47 & 25 & 299 & 27 & 20 & 19 & 75 & 51 & 20 & 32 \\
\hline Total Analysis Volume [veh/h] & 352 & 1003 & 188 & 101 & 1194 & 109 & 82 & 75 & 298 & 204 & 82 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 29 & 56 & 0 & 18 & 45 & 0 & 27 & 28 & 0 & 18 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 25 & 57 & 57 & 9 & 41 & 41 & 8 & 24 & 24 & 14 & 30 & 30 \\
\hline g / C, Green / Cycle & 0.21 & 0.47 & 0.47 & 0.08 & 0.34 & 0.34 & 0.06 & 0.20 & 0.20 & 0.12 & 0.25 & 0.25 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.22 & 0.31 & 0.13 & 0.06 & 0.37 & 0.08 & 0.05 & 0.04 & 0.21 & 0.13 & 0.05 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 333 & 1515 & 676 & 123 & 1096 & 489 & 102 & 332 & 283 & 186 & 421 & 358 \\
\hline d1, Uniform Delay [s] & 47.51 & 24.15 & 19.08 & 54.58 & 39.41 & 28.02 & 55.42 & 40.38 & 48.11 & 53.00 & 35.39 & 37.01 \\
\hline k, delay calibration & 0.48 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.47 & 0.47 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 64.73 & 2.29 & 1.02 & 12.66 & 55.01 & 1.05 & 13.42 & 0.34 & 67.21 & 91.10 & 0.22 & 0.61 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.06 & 0.66 & 0.28 & 0.82 & 1.09 & 0.22 & 0.80 & 0.23 & 1.05 & 1.09 & 0.19 & 0.36 \\
\hline d, Delay for Lane Group [s/veh] & 112.23 & 26.44 & 20.10 & 67.24 & 94.42 & 29.08 & 68.84 & 40.72 & 115.32 & 144.10 & 35.61 & 37.62 \\
\hline Lane Group LOS & F & C & C & E & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 15.19 & 10.03 & 3.02 & 3.27 & 22.92 & 2.20 & 2.83 & 1.90 & 13.67 & 10.18 & 1.87 & 3.09 \\
\hline 50th-Percentile Queue Length [ft] & 379.72 & 250.75 & 75.49 & 81.68 & 572.99 & 55.03 & 70.72 & 47.53 & 341.72 & 254.55 & 46.72 & 77.31 \\
\hline 95th-Percentile Queue Length [veh] & 22.25 & 15.22 & 5.43 & 5.88 & 32.56 & 3.96 & 5.09 & 3.42 & 20.29 & 16.00 & 3.36 & 5.57 \\
\hline 95th-Percentile Queue Length [ft] & 556.30 & 380.60 & 135.87 & 147.02 & 813.92 & 99.06 & 127.30 & 85.55 & 507.33 & 399.90 & 84.10 & 139.16 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 112.23 & 26.44 & 20.10 & 67.24 & 94.42 & 29.08 & 68.84 & 40.72 & 115.32 & 144.10 & 35.61 & 37.62 \\
\hline Movement LOS & F & C & C & E & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{45.24} & \multicolumn{3}{|c|}{87.39} & \multicolumn{3}{|c|}{94.65} & \multicolumn{3}{|c|}{89.57} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{71.45} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{E} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.075} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
32.3

C
0.863

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7711 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 379 & 2 & 114 & 212 & 0 & 0 & 0 & 0 & 2 & 0 & 200 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1108 & 79 & 162 & 1376 & 12 & 18 & 10 & 12 & 152 & 21 & 279 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 308 & 22 & 45 & 382 & 3 & 5 & 3 & 3 & 42 & 6 & 78 \\
\hline Total Analysis Volume [veh/h] & 26 & 1231 & 88 & 180 & 1529 & 13 & 20 & 11 & 13 & 169 & 23 & 310 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 100 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 41 & 0 & 11 & 41 & 0 & 11 & 32 & 0 & 16 & 37 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 50 & 50 & 7 & 53 & 53 & 3 & 15 & 15 & 12 & 24 & 24 \\
\hline g / C, Green / Cycle & 0.04 & 0.50 & 0.50 & 0.07 & 0.53 & 0.53 & 0.03 & 0.15 & 0.15 & 0.12 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.39 & 0.06 & 0.06 & 0.48 & 0.01 & 0.01 & 0.01 & 0.01 & 0.11 & 0.01 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 59 & 1591 & 710 & 220 & 1698 & 758 & 50 & 252 & 214 & 192 & 402 & 342 \\
\hline d1, Uniform Delay [s] & 47.18 & 20.50 & 13.43 & 45.90 & 21.05 & 11.07 & 47.60 & 36.38 & 36.47 & 43.31 & 29.33 & 36.97 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.31 & 0.11 & 0.16 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 4.99 & 3.73 & 0.36 & 7.39 & 8.11 & 0.04 & 5.20 & 0.07 & 0.12 & 27.72 & 0.06 & 12.37 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.44 & 0.77 & 0.12 & 0.82 & 0.90 & 0.02 & 0.40 & 0.04 & 0.06 & 0.88 & 0.06 & 0.91 \\
\hline d, Delay for Lane Group [s/veh] & 52.17 & 24.24 & 13.78 & 53.29 & 29.16 & 11.11 & 52.80 & 36.45 & 36.59 & 71.03 & 29.39 & 49.34 \\
\hline Lane Group LOS & D & C & B & D & C & B & D & D & D & E & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.68 & 10.73 & 1.00 & 2.31 & 15.05 & 0.13 & 0.56 & 0.24 & 0.28 & 5.56 & 0.43 & 8.41 \\
\hline 50th-Percentile Queue Length [ft] & 17.10 & 268.30 & 24.95 & 57.76 & 376.16 & 3.15 & 14.09 & 5.93 & 7.05 & 138.97 & 10.80 & 210.16 \\
\hline 95th-Percentile Queue Length [veh] & 1.23 & 16.10 & 1.80 & 4.16 & 21.41 & 0.23 & 1.01 & 0.43 & 0.51 & 9.43 & 0.78 & 13.16 \\
\hline 95th-Percentile Queue Length [ft] & 30.78 & 402.61 & 44.92 & 103.96 & 535.20 & 5.68 & 25.36 & 10.67 & 12.70 & 235.64 & 19.45 & 329.03 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 52.17 & 24.24 & 13.78 & 53.29 & 29.16 & 11.11 & 52.80 & 36.45 & 36.59 & 71.03 & 29.39 & 49.34 \\
\hline Movement LOS & D & C & B & D & C & B & D & D & D & E & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{24.09} & \multicolumn{3}{|c|}{31.55} & \multicolumn{3}{|c|}{43.92} & \multicolumn{3}{|c|}{55.73} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{32.28} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.863} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
29.0

Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 301 & 0 & 0 & 169 & 45 & 80 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 90 & 988 & 4 & 6 & 1457 & 139 & 139 & 4 & 126 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 26 & 281 & 1 & 2 & 415 & 40 & 40 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 103 & 1125 & 5 & 7 & 1659 & 158 & 158 & 5 & 144 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 90 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 33 & 0 & 26 & 48 & 0 & 12 & 20 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 35 & 35 & 1 & 30 & 30 & 8 & 9 & 9 & 0 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.10 & 0.58 & 0.58 & 0.01 & 0.49 & 0.49 & 0.13 & 0.14 & 0.14 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.35 & 0.00 & 0.00 & 0.52 & 0.11 & 0.10 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 153 & 1836 & 820 & 22 & 1573 & 702 & 202 & 238 & 203 & 10 & 37 & 31 \\
\hline d1, Uniform Delay [s] & 26.59 & 8.48 & 5.51 & 29.74 & 15.43 & 8.80 & 25.77 & 22.46 & 24.91 & 30.11 & 29.20 & 29.26 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.07 & 0.33 & 0.00 & 8.43 & 28.58 & 0.16 & 6.49 & 0.03 & 4.57 & 15.91 & 1.66 & 3.57 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.67 & 0.61 & 0.01 & 0.32 & 1.05 & 0.22 & 0.78 & 0.02 & 0.71 & 0.30 & 0.14 & 0.22 \\
\hline d, Delay for Lane Group [s/veh] & 31.66 & 8.81 & 5.51 & 38.18 & 44.01 & 8.96 & 32.26 & 22.50 & 29.48 & 46.02 & 30.86 & 32.83 \\
\hline Lane Group LOS & C & A & A & D & F & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 1.45 & 2.81 & 0.02 & 0.14 & 13.26 & 0.84 & 2.45 & 0.06 & 2.12 & 0.09 & 0.09 & 0.13 \\
\hline 50th-Percentile Queue Length [ft] & 36.33 & 70.18 & 0.41 & 3.48 & 331.57 & 20.88 & 61.14 & 1.51 & 52.90 & 2.15 & 2.13 & 3.17 \\
\hline 95th-Percentile Queue Length [veh] & 2.62 & 5.05 & 0.03 & 0.25 & 19.97 & 1.50 & 4.40 & 0.11 & 3.81 & 0.15 & 0.15 & 0.23 \\
\hline 95th-Percentile Queue Length [ft] & 65.40 & 126.33 & 0.74 & 6.27 & 499.18 & 37.58 & 110.05 & 2.72 & 95.22 & 3.87 & 3.84 & 5.71 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 31.66 & 8.81 & 5.51 & 38.18 & 44.01 & 8.96 & 32.26 & 22.50 & 29.48 & 46.02 & 30.86 & 32.83 \\
\hline Movement LOS & C & A & A & D & F & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{10.71} & \multicolumn{3}{|c|}{40.95} & \multicolumn{3}{|c|}{30.80} & \multicolumn{3}{|c|}{34.81} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{28.97} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.934} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
214.6

F
1.602

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 59 & 136 & 0 & 45 & 74 & 51 & 86 & 3 & 22 & 0 & 3 & 80 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 432 & 816 & 99 & 67 & 1400 & 141 & 155 & 126 & 578 & 217 & 245 & 98 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 120 & 226 & 27 & 19 & 388 & 39 & 43 & 35 & 160 & 60 & 68 & 27 \\
\hline Total Analysis Volume [veh/h] & 479 & 906 & 110 & 74 & 1554 & 156 & 172 & 140 & 642 & 241 & 272 & 109 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 34 & 0 & 32 & 40 & 0 & 28 & 38 & 38 & 16 & 26 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 51 & 51 & 7 & 36 & 36 & 15 & 34 & 34 & 12 & 31 \\
\hline g / C, Green / Cycle & 0.18 & 0.43 & 0.43 & 0.06 & 0.30 & 0.30 & 0.12 & 0.28 & 0.28 & 0.10 & 0.26 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.31 & 0.31 & 0.05 & 0.49 & 0.11 & 0.11 & 0.08 & 0.45 & 0.15 & 0.24 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1614 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1596 \\
\hline c, Capacity [veh/h] & 293 & 715 & 688 & 93 & 961 & 429 & 198 & 473 & 402 & 160 & 4412 \\
\hline d1, Uniform Delay [s] & 49.00 & 28.49 & 28.63 & 55.82 & 41.93 & 32.91 & 51.60 & 33.74 & 43.08 & 54.00 & 43.39 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.39 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 301.32 & 6.18 & 6.64 & 14.31 & 282.28 & 2.38 & 10.93 & 0.35 & 280.16 & 258.38 & 24.60 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.64 & 0.72 & 0.73 & 0.80 & 1.62 & 0.36 & 0.87 & 0.30 & 1.60 & 1.51 & 0.92 \\
\hline d, Delay for Lane Group [s/veh] & 350.32 & 34.67 & 35.27 & 70.13 & 324.22 & 35.28 & 62.52 & 34.09 & 323.24 & 312.38 & 67.98 \\
\hline Lane Group LOS & F & C & D & E & F & D & E & C & F & F & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 32.82 & 12.46 & 12.25 & 2.49 & 50.96 & 3.66 & 5.67 & 3.26 & 43.06 & 16.28 & 13.74 \\
\hline 50th-Percentile Queue Length [ft] & 820.51 & 311.52 & 306.37 & 62.33 & 1273.94 & 91.57 & 141.85 & 81.44 & 1076.46 & 407.03 & 343.47 \\
\hline 95th-Percentile Queue Length [veh] & 51.34 & 18.25 & 18.00 & 4.49 & 79.07 & 6.59 & 9.58 & 5.86 & 67.18 & 26.18 & 19.82 \\
\hline 95th-Percentile Queue Length [ft] & 1283.39 & 456.25 & 449.90 & 112.19 & 1976.84 & 164.83 & 239.51 & 146.58 & 1679.60 & 654.57 & 495.44 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 350.32 & 34.93 & 35.27 & 70.13 & 324.22 & 35.28 & 62.52 & 34.09 & 323.24 & 312.38 & 67.98 & 67.98 \\
\hline Movement LOS & F & C & D & E & F & D & E & C & F & F & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{136.01} & \multicolumn{3}{|c|}{288.41} & \multicolumn{3}{|c|}{233.80} & \multicolumn{3}{|c|}{162.68} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{214.64} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.602} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 40.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.959
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 113 & 0 & 47 & 49 & 0 & 82 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1028 & 225 & 370 & 1813 & 389 & 335 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 276 & 60 & 99 & 487 & 105 & 90 \\
\hline Total Analysis Volume [veh/h] & 1105 & 242 & 398 & 1949 & 418 & 360 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 38 & 0 & 41 & 79 & 41 & 41 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 44 & 44 & 32 & 80 & 32 & 32 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.26 & 0.67 & 0.27 & 0.27 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.35 & 0.17 & 0.25 & 0.61 & 0.13 & 0.25 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1172 & 523 & 423 & 2124 & 831 & 382 \\
\hline d1, Uniform Delay [s] & 36.71 & 28.91 & 43.19 & 17.25 & 37.14 & 43.00 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.32 & 0.50 & 0.11 & 0.33 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 15.67 & 2.92 & 23.18 & 7.81 & 0.47 & 25.42 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.94 & 0.46 & 0.94 & 0.92 & 0.50 & 0.94 \\
\hline d, Delay for Lane Group [s/veh] & 52.38 & 31.84 & 66.37 & 25.05 & 37.62 & 68.42 \\
\hline Lane Group LOS & D & C & E & C & D & E \\
\hline Critical Lane Group & No & No & No & Yes & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 16.98 & 5.40 & 13.58 & 20.16 & 5.25 & 13.05 \\
\hline 50th-Percentile Queue Length [ft] & 424.49 & 135.05 & 339.41 & 504.07 & 131.23 & 326.37 \\
\hline 95th-Percentile Queue Length [veh] & 23.74 & 9.21 & 19.62 & 27.53 & 9.01 & 18.98 \\
\hline 95th-Percentile Queue Length [ft] & 593.44 & 230.35 & 490.48 & 688.17 & 225.16 & 474.51 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 52.38 & 31.84 & 66.37 & 25.05 & 37.62 & 68.42 \\
\hline Movement LOS & D & C & E & C & D & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{48.69} & \multicolumn{2}{|c|}{32.06} & \multicolumn{2}{|c|}{51.87} \\
\hline Approach LOS & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{40.51} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.959} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 27.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.018
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 325 & 0 & 0 & 398 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 82 & 329 & 3 & 92 & 401 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 28 & 112 & 1 & 31 & 137 \\
\hline Total Analysis Volume [veh/h] & 3 & 112 & 448 & 4 & 125 & 546 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.02 & 0.18 & 0.00 & 0.00 & 0.11 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 27.74 & 12.49 & 0.00 & 0.00 & 8.66 & 0.00 \\
\hline Movement LOS & D & B & A & A & A & A \\
\hline 95th-Percentile Queue Length [veh] & 0.75 & 0.75 & 0.00 & 0.00 & 0.38 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 18.68 & 18.68 & 0.00 & 0.00 & 9.50 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{12.89} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.61} \\
\hline Approach LOS & \multicolumn{2}{|c|}{B} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.07} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 10.6 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.000
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 46 & 0 & 0 & 81 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 46 & 0 & 51 & 81 & 0 & 14 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 16 & 0 & 17 & 27 & 0 & 5 \\
\hline Total Analysis Volume [veh/h] & 62 & 0 & 69 & 109 & 0 & 19 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.00 & 0.02 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.45 & 0.00 & 10.58 & 8.66 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.14 & 0.00 & 0.06 & 0.06 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.51 & 0.00 & 1.45 & 1.45 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.89} & \multicolumn{2}{|c|}{8.66} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.62} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
4 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
T
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 160 & 91 & 23 & 40 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 279 & 244 & 123 & 158 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 104 & 91 & 46 & 59 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 416 & 364 & 183 & 235 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 1.05 & 2.16 & 2.16 & 3.47 & 3.08 & 3.09 & 1.17 \\
\hline 95th-Percentile Queue Length [ft] & 26.33 & 53.91 & 53.91 & 86.83 & 77.11 & 77.37 & 29.17 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{15.31} & \multicolumn{2}{|c|}{18.43} & \multicolumn{2}{|c|}{17.15} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{16.96} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 22.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & C \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{2}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 114 & 16 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 80 & 0 & 0 & 45 & 24 & 41 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 120 & 253 & 0 & 1 & 299 & 90 & 87 & 3 & 116 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 76 & 0 & 0 & 90 & 27 & 26 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 144 & 304 & 0 & 1 & 359 & 108 & 105 & 4 & 139 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 6.91 & 7.13 & 0.85 & 0.02 & 0.98 & 0.10 \\
\hline 95th-Percentile Queue Length [ft] & 172.80 & 178.13 & 21.32 & 0.60 & 24.51 & 2.62 \\
\hline Approach Delay [s/veh] & 26.15 & 25.92 & \multicolumn{3}{|c|}{11.84} & 11.39 \\
\hline Approach LOS & D & D & \multicolumn{3}{|c|}{22.86} \\
\hline Intersection Delay [s/veh] & C \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

Vistro File: Q:I....tvcs1.vistro

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & EB Right & 1.663 & 219.2 & F \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 1.539 & 208.1 & F \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Left & 1.316 & 152.0 & F \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Thru & 1.060 & 103.9 & F \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.592 & 258.7 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.530 & 175.4 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.041 & 61.5 & F \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.000 & 12.5 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & SB Thru & & 63.3 & F \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 81.5 & F \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
219.2

F
15 minutes Volume to Capacity (v/c): 1.663

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 526 & 82 & 0 & 0 & 91 & 12 & 20 & 98 & 828 & 0 & 62 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 530 & 1268 & 3 & 2 & 937 & 13 & 22 & 100 & 829 & 3 & 62 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 354 & 1 & 1 & 261 & 4 & 6 & 28 & 231 & 1 & 17 & 0 \\
\hline Total Analysis Volume [veh/h] & 592 & 1415 & 3 & 2 & 1046 & 15 & 25 & 112 & 925 & 3 & 69 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 58 & 0 & 11 & 43 & 0 & 0 & 51 & 0 & 0 & 51 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 61 & 0 & 39 & 39 & 47 & 47 & 47 & 47 \\
\hline g / C, Green / Cycle & 0.18 & 0.50 & 0.00 & 0.33 & 0.33 & 0.39 & 0.39 & 0.39 & 0.39 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.19 & 0.85 & 0.00 & 0.33 & 0.01 & 0.15 & 0.65 & 0.04 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1676 & 1597 & 3192 & 1425 & 929 & 1425 & 1654 & 1425 \\
\hline c, Capacity [veh/h] & 569 & 846 & 7 & 1039 & 464 & 399 & 557 & 678 & 557 \\
\hline d1, Uniform Delay [s] & 48.97 & 29.70 & 59.55 & 40.46 & 27.58 & 26.00 & 36.54 & 23.25 & 22.27 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 29.15 & 309.42 & 22.54 & 29.53 & 0.13 & 0.51 & 305.17 & 0.07 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.04 & 1.68 & 0.30 & 1.01 & 0.03 & 0.34 & 1.66 & 0.11 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 78.12 & 339.12 & 82.09 & 69.99 & 27.70 & 26.51 & 341.71 & 23.32 & 22.27 \\
\hline Lane Group LOS & F & F & F & F & C & C & F & C & C \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 10.23 & 93.27 & 0.10 & 18.14 & 0.29 & 2.65 & 63.14 & 1.32 & 0.02 \\
\hline 50th-Percentile Queue Length [ft] & 255.67 & 2331.75 & 2.50 & 453.42 & 7.24 & 66.32 & 1578.39 & 33.05 & 0.44 \\
\hline 95th-Percentile Queue Length [veh] & 15.78 & 146.39 & 0.18 & 25.23 & 0.52 & 4.78 & 99.11 & 2.38 & 0.03 \\
\hline 95th-Percentile Queue Length [ft] & 394.44 & 3659.69 & 4.49 & 630.79 & 13.04 & 119.38 & 2477.83 & 59.49 & 0.79 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.12 & 339.12 & 339.12 & 82.09 & 69.99 & 27.70 & 26.51 & 26.51 & 341.71 & 23.32 & 23.32 & 22.27 \\
\hline Movement LOS & F & F & F & F & F & C & C & C & F & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{262.25} & \multicolumn{3}{|c|}{69.41} & \multicolumn{3}{|c|}{301.05} & \multicolumn{3}{|c|}{23.31} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{219.18} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.663} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
208.1

F 1.539

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 495 & 447 & 7 & 142 & 706 & 71 & 69 & 104 & 481 & 6 & 106 & 92 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 511 & 1608 & 146 & 177 & 1515 & 87 & 84 & 109 & 499 & 100 & 113 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 141 & 444 & 40 & 49 & 419 & 24 & 23 & 30 & 138 & 28 & 31 & 32 \\
\hline Total Analysis Volume [veh/h] & 565 & 1777 & 161 & 196 & 1674 & 96 & 93 & 120 & 551 & 110 & 125 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 31 & 61 & 0 & 14 & 44 & 0 & 26 & 34 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 57 & 57 & 10 & 40 & 40 & 9 & 30 & 30 & 7 & 28 & 28 \\
\hline g / C, Green / Cycle & 0.22 & 0.48 & 0.48 & 0.08 & 0.33 & 0.33 & 0.07 & 0.25 & 0.25 & 0.06 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.56 & 0.11 & 0.12 & 0.52 & 0.07 & 0.06 & 0.07 & 0.39 & 0.07 & 0.07 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 359 & 1519 & 678 & 133 & 1067 & 476 & 115 & 417 & 355 & 93 & 395 & 336 \\
\hline d1, Uniform Delay [s] & 46.50 & 31.44 & 18.58 & 55.00 & 39.94 & 28.51 & 54.90 & 36.45 & 45.06 & 56.50 & 37.88 & 38.55 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.44 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 270.83 & 83.82 & 0.82 & 248.77 & 260.55 & 0.95 & 12.73 & 0.38 & 262.22 & 143.62 & 0.46 & 0.72 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.57 & 1.17 & 0.24 & 1.47 & 1.57 & 0.20 & 0.81 & 0.29 & 1.55 & 1.18 & 0.32 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 317.33 & 115.26 & 19.40 & 303.77 & 300.50 & 29.46 & 67.62 & 36.82 & 307.28 & 200.11 & 38.34 & 39.27 \\
\hline Lane Group LOS & F & F & B & F & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 36.93 & 36.54 & 2.52 & 12.98 & 52.82 & 1.95 & 3.18 & 2.90 & 36.31 & 6.47 & 3.01 & 3.17 \\
\hline 50th-Percentile Queue Length [ft] & 923.14 & 913.42 & 62.90 & 324.57 & 1320.53 & 48.77 & 79.39 & 72.60 & 907.68 & 161.75 & 75.19 & 79.33 \\
\hline 95th-Percentile Queue Length [veh] & 57.29 & 52.01 & 4.53 & 21.25 & 81.62 & 3.51 & 5.72 & 5.23 & 56.57 & 11.16 & 5.41 & 5.71 \\
\hline 95th-Percentile Queue Length [ft] & 1432.27 & 1300.23 & 113.22 & 531.36 & 2040.57 & 87.78 & 142.91 & 130.69 & 1414.17 & 279.01 & 135.35 & 142.80 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 317.33 & 115.26 & 19.40 & 303.77 & 300.50 & 29.46 & 67.62 & 36.82 & 307.28 & 200.11 & 38.34 & 39.27 \\
\hline Movement LOS & F & F & B & F & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{154.71} & \multicolumn{3}{|c|}{287.59} & \multicolumn{3}{|c|}{235.63} & \multicolumn{3}{|c|}{87.55} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{208.06} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.539} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
152.0

F
1.316

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{77浐} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{7 | \({ }^{\text {F }}\)} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 618 & 10 & 416 & 777 & 0 & 0 & 0 & 0 & 9 & 0 & 331 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1873 & 188 & 502 & 1710 & 8 & 6 & 15 & 25 & 131 & 27 & 391 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 520 & 52 & 139 & 475 & 2 & 2 & 4 & 7 & 36 & 8 & 109 \\
\hline Total Analysis Volume [veh/h] & 27 & 2081 & 209 & 558 & 1900 & 9 & 7 & 17 & 28 & 146 & 30 & 434 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 59 & 0 & 20 & 68 & 0 & 11 & 29 & 0 & 12 & 30 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 55 & 55 & 16 & 67 & 67 & 1 & 25 & 25 & 8 & 31 & 31 \\
\hline g / C, Green / Cycle & 0.03 & 0.46 & 0.46 & 0.13 & 0.56 & 0.56 & 0.01 & 0.21 & 0.21 & 0.07 & 0.26 & 0.26 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.65 & 0.15 & 0.18 & 0.60 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.30 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 55 & 1468 & 655 & 413 & 1783 & 796 & 19 & 347 & 295 & 106 & 438 & 372 \\
\hline d1, Uniform Delay [s] & 56.88 & 32.40 & 20.51 & 52.00 & 26.48 & 11.76 & 58.81 & 38.14 & 38.51 & 56.00 & 33.34 & 44.33 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.19 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.53 & 191.95 & 1.28 & 163.37 & 41.23 & 0.03 & 10.89 & 0.06 & 0.14 & 215.55 & 0.07 & 99.98 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.49 & 1.42 & 0.32 & 1.35 & 1.07 & 0.01 & 0.36 & 0.05 & 0.10 & 1.37 & 0.07 & 1.17 \\
\hline d, Delay for Lane Group [s/veh] & 63.41 & 224.35 & 21.79 & 215.37 & 67.71 & 11.79 & 69.70 & 38.20 & 38.65 & 271.54 & 33.41 & 144.30 \\
\hline Lane Group LOS & E & F & C & F & F & B & E & D & D & F & C & F \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.87 & 58.18 & 3.66 & 15.31 & 31.86 & 0.10 & 0.27 & 0.41 & 0.69 & 9.59 & 0.67 & 21.28 \\
\hline 50th-Percentile Queue Length [ft] & 21.84 & 1454.43 & 91.60 & 382.82 & 796.51 & 2.57 & 6.79 & 10.34 & 17.25 & 239.85 & 16.78 & 532.03 \\
\hline 95th-Percentile Queue Length [veh] & 1.57 & 87.90 & 6.60 & 24.41 & 43.30 & 0.19 & 0.49 & 0.74 & 1.24 & 16.06 & 1.21 & 31.46 \\
\hline 95th-Percentile Queue Length [ft] & 39.31 & 2197.45 & 164.88 & 610.18 & 1082.46 & 4.63 & 12.22 & 18.61 & 31.05 & 401.60 & 30.21 & 786.38 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 63.41 & 224.35 & 21.79 & 215.37 & 67.71 & 11.79 & 69.70 & 38.20 & 38.65 & 271.54 & 33.41 & 144.30 \\
\hline Movement LOS & E & F & C & F & F & B & E & D & D & F & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{204.21} & \multicolumn{3}{|c|}{100.91} & \multicolumn{3}{|c|}{42.68} & \multicolumn{3}{|c|}{169.30} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{151.96} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.316} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 103.9 \\
Level Of Service: & F \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.060
\end{tabular}
1.060

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 4 & 495 & 0 & 0 & 619 & 167 & 133 & 0 & 4 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 158 & 1827 & 5 & 2 & 1514 & 214 & 225 & 1 & 89 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 45 & 520 & 1 & 1 & 431 & 61 & 64 & 0 & 25 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 180 & 2081 & 6 & 2 & 1724 & 244 & 256 & 1 & 101 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 10 & 40 & 40 & 0 & 30 & 30 & 14 & 14 & 14 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.14 & 0.56 & 0.56 & 0.00 & 0.42 & 0.42 & 0.19 & 0.20 & 0.20 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.65 & 0.00 & 0.00 & 0.54 & 0.17 & 0.16 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 223 & 1778 & 794 & 7 & 1346 & 601 & 304 & 339 & 288 & 18 & 38 & 33 \\
\hline d1, Uniform Delay [s] & 29.67 & 15.75 & 7.00 & 35.31 & 20.57 & 14.35 & 27.74 & 22.66 & 24.37 & 34.88 & 33.99 & 34.22 \\
\hline k, delay calibration & 0.11 & 0.28 & 0.11 & 0.11 & 0.19 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.75 & 80.32 & 0.00 & 22.12 & 128.59 & 0.44 & 6.21 & 0.00 & 0.73 & 9.86 & 0.55 & 5.91 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.81 & 1.17 & 0.01 & 0.29 & 1.28 & 0.41 & 0.84 & 0.00 & 0.35 & 0.33 & 0.05 & 0.34 \\
\hline d, Delay for Lane Group [s/veh] & 36.42 & 96.07 & 7.01 & 57.42 & 149.16 & 14.79 & 33.95 & 22.66 & 25.10 & 44.75 & 34.55 & 40.13 \\
\hline Lane Group LOS & D & F & A & E & F & B & C & C & C & D & C & D \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 3.05 & 29.28 & 0.03 & 0.07 & 32.61 & 2.24 & 4.51 & 0.01 & 1.46 & 0.15 & 0.04 & 0.24 \\
\hline 50th-Percentile Queue Length [ft] & 76.16 & 731.98 & 0.73 & 1.83 & 815.34 & 56.06 & 112.87 & 0.33 & 36.41 & 3.76 & 0.97 & 5.88 \\
\hline 95th-Percentile Queue Length [veh] & 5.48 & 42.86 & 0.05 & 0.13 & 49.11 & 4.04 & 8.00 & 0.02 & 2.62 & 0.27 & 0.07 & 0.42 \\
\hline 95th-Percentile Queue Length [ft] & 137.09 & 1071.46 & 1.31 & 3.29 & 1227.63 & 100.92 & 199.99 & 0.59 & 65.54 & 6.78 & 1.74 & 10.59 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.42 & 96.07 & 7.01 & 57.42 & 149.16 & 14.79 & 33.95 & 22.66 & 25.10 & 44.75 & 34.55 & 40.13 \\
\hline Movement LOS & D & F & A & E & F & B & C & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{91.10} & \multicolumn{3}{|c|}{132.43} & \multicolumn{3}{|c|}{31.42} & \multicolumn{3}{|c|}{41.00} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{103.91} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.060} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
258.7

F
1.592

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 45 & 210 & 0 & 167 & 268 & 188 & 156 & 8 & 72 & 0 & 8 & 133 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 499 & 1612 & 208 & 196 & 1133 & 251 & 233 & 189 & 634 & 176 & 146 & 154 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 138 & 447 & 58 & 54 & 314 & 70 & 65 & 52 & 176 & 49 & 41 & 43 \\
\hline Total Analysis Volume [veh/h] & 554 & 1789 & 231 & 218 & 1257 & 279 & 259 & 210 & 704 & 195 & 162 & 171 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 30 & 51 & 0 & 15 & 36 & 0 & 23 & 41 & 41 & 13 & 31 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 26 & 47 & 47 & 11 & 32 & 32 & 19 & 37 & 37 & 9 & 27 \\
\hline g / C, Green / Cycle & 0.22 & 0.39 & 0.39 & 0.09 & 0.27 & 0.27 & 0.16 & 0.31 & 0.31 & 0.08 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.60 & 0.63 & 0.14 & 0.39 & 0.20 & 0.16 & 0.13 & 0.49 & 0.12 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1611 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1537 \\
\hline c, Capacity [veh/h] & 346 & 659 & 633 & 147 & 856 & 382 & 253 & 514 & 437 & 120 & 343 \\
\hline d1, Uniform Delay [s] & 47.01 & 36.43 & 36.43 & 54.50 & 43.92 & 39.96 & 50.50 & 33.00 & 41.62 & 55.50 & 46.21 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.44 & 0.11 & 0.50 & 0.50 & 0.42 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 283.83 & 247.53 & 275.18 & 250.85 & 217.06 & 11.62 & 59.46 & 0.52 & 285.86 & 314.39 & 37.62 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.60 & 1.53 & 1.60 & 1.48 & 1.47 & 0.73 & 1.02 & 0.41 & 1.61 & 1.62 & 0.97 \\
\hline d, Delay for Lane Group [s/veh] & 330.84 & 283.97 & 311.61 & 305.35 & 260.98 & 51.58 & 109.96 & 33.52 & 327.48 & 369.89 & 83.83 \\
\hline Lane Group LOS & F & F & F & F & F & D & F & C & F & F & F \\
\hline Critical Lane Group & No & No & Yes & Yes & No & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 37.03 & 62.92 & 65.34 & 14.48 & 37.74 & 8.31 & 11.75 & 4.93 & 47.40 & 14.14 & 13.36 \\
\hline 50th-Percentile Queue Length [ft] & 925.82 & 1572.89 & 1633.43 & 361.88 & 943.62 & 207.75 & 293.69 & 123.15 & 1185.09 & 353.44 & 333.93 \\
\hline 95th-Percentile Queue Length [veh] & 57.58 & 96.39 & 101.15 & 23.48 & 57.85 & 13.04 & 17.57 & 8.57 & 74.01 & 23.20 & 19.35 \\
\hline 95th-Percentile Queue Length [ft] & 1439.53 & 2409.85 & 2528.78 & 586.89 & 1446.34 & 325.94 & 439.20 & 214.15 & 1850.32 & 579.92 & 483.78 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 330.84 & 296.00 & 311.61 & 305.35 & 260.98 & 51.58 & 109.96 & 33.52 & 327.48 & 369.89 & 83.83 & 83.83 \\
\hline Movement LOS & F & F & F & F & F & D & F & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{304.90} & \multicolumn{3}{|c|}{233.18} & \multicolumn{3}{|c|}{226.82} & \multicolumn{3}{|c|}{189.48} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{258.74} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.592} \\
\hline
\end{tabular}

\section*{Sequence}
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 175.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.530
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 116 & 0 & 174 & 166 & 0 & 139 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1724 & 408 & 501 & 1431 & 316 & 608 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 463 & 110 & 135 & 385 & 85 & 163 \\
\hline Total Analysis Volume [veh/h] & 1854 & 439 & 539 & 1539 & 340 & 654 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 49 & 0 & 31 & 80 & 40 & 40 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 45 & 45 & 27 & 76 & 36 & 36 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.23 & 0.63 & 0.30 & 0.30 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.58 & 0.31 & 0.34 & 0.48 & 0.11 & 0.46 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1196 & 534 & 360 & 2022 & 930 & 427 \\
\hline d1, Uniform Delay [s] & 37.49 & 33.88 & 46.46 & 15.57 & 33.01 & 41.98 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 251.58 & 13.34 & 238.63 & 2.77 & 0.24 & 250.16 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.55 & 0.82 & 1.50 & 0.76 & 0.37 & 1.53 \\
\hline d, Delay for Lane Group [s/veh] & 289.07 & 47.22 & 285.09 & 18.33 & 33.25 & 292.14 \\
\hline Lane Group LOS & F & D & F & B & C & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 57.88 & 12.64 & 33.96 & 12.96 & 3.93 & 42.18 \\
\hline 50th-Percentile Queue Length [ft] & 1447.05 & 316.12 & 848.90 & 323.95 & 98.36 & 1054.54 \\
\hline 95th-Percentile Queue Length [veh] & 89.23 & 18.48 & 52.37 & 18.86 & 7.08 & 65.35 \\
\hline 95th-Percentile Queue Length [ft] & 2230.72 & 461.91 & 1309.16 & 471.54 & 177.05 & 1633.84 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 289.07 & 47.22 & 285.09 & 18.33 & 33.25 & 292.14 \\
\hline Movement LOS & F & D & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{242.77} & \multicolumn{2}{|c|}{87.52} & \multicolumn{2}{|c|}{203.59} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{175.38} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.530} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 61.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.041
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 0 & 654 & 0 & 0 & 672 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 2 & 85 & 658 & 1 & 28 & 677 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 1 & 29 & 224 & 0 & 10 & 231 \\
\hline Total Analysis Volume [veh/h] & 3 & 116 & 896 & 1 & 38 & 922 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.04 & 0.34 & 0.01 & 0.00 & 0.05 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 61.54 & 22.67 & 0.00 & 0.00 & 10.01 & 0.00 \\
\hline Movement LOS & F & C & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 1.74 & 1.74 & 0.00 & 0.00 & 0.16 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 43.52 & 43.52 & 0.00 & 0.00 & 3.96 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{23.65} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.40} \\
\hline Approach LOS & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{1.62} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 12.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.000
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 171 & 0 & 0 & 137 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 171 & 0 & 38 & 137 & 0 & 34 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 58 & 0 & 13 & 46 & 0 & 11 \\
\hline Total Analysis Volume [veh/h] & 231 & 0 & 51 & 185 & 0 & 46 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.00 & 0.06 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.80 & 0.00 & 12.50 & 9.72 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.12 & 0.00 & 0.18 & 0.18 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 2.97 & 0.00 & 4.52 & 4.52 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.69} & \multicolumn{2}{|c|}{9.72} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{1.65} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): & 63.3 \\
Analysis Method: & HCM 2010 & Level Of Service: &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 265 & 333 & 83 & 66 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 454 & 466 & 169 & 172 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 169 & 174 & 63 & 64 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 677 & 694 & 252 & 256 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.81 & 7.23 & 7.23 & 16.85 & 15.38 & 5.32 & 1.32 \\
\hline 95th-Percentile Queue Length [ft] & 20.26 & 180.65 & 180.65 & 421.29 & 384.44 & 133.05 & 32.96 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{35.39} & \multicolumn{2}{|c|}{100.02} & \multicolumn{2}{|c|}{28.17} \\
\hline Approach LOS & \multicolumn{3}{|c|}{E} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{63.29} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 81.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 133 & 0 & 0 & 167 & 87 & 70 & 0 & 2 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 141 & 389 & 7 & 3 & 351 & 145 & 150 & 4 & 103 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 117 & 2 & 1 & 105 & 44 & 45 & 1 & 31 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 169 & 468 & 8 & 4 & 422 & 174 & 180 & 5 & 124 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 22.54 & 17.04 & 1.96 & 0.03 & 0.93 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 563.55 & 426.01 & 48.88 & 0.81 & 23.27 & 2.05 \\
\hline Approach Delay [s/veh] & 118.44 & 77.54 & \multicolumn{3}{|c|}{14.48} & 11.96 \\
\hline Approach LOS & F & F & B & F \\
\hline Intersection Delay [s/veh] & Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline ( &
\end{tabular}

\section*{Appendix H. Intersection Volumes, Delay, and LOS Calculation Outputs, 2018 Cumulative Plus Project Conditions}

Vistro File: Q:\... \({ }^{\text {ttvcs1.vistro }}\)
Report File: Q:\...lintersections.pdf

Scenario 7: \(E+A+P+C A M\)
11/11/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Left & 0.850 & 21.4 & C \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 1.329 & 132.5 & F \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Left & 0.934 & 49.5 & D \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Thru & 0.971 & 40.3 & D \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.617 & 218.7 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.993 & 47.3 & D \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 1.250 & 357.4 & F \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.015 & 11.5 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & SB Thru & & 21.6 & C \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 28.9 & D \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
21.4

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
C
0.850

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 323 & 75 & 12 & 0 & 79 & 8 & 2 & 11 & 98 & 15 & 38 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & O & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 324 & 779 & 15 & 0 & 1179 & 11 & 3 & 12 & 102 & 23 & 38 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 90 & 217 & 4 & 0 & 329 & 3 & 1 & 3 & 28 & 6 & 11 & 1 \\
\hline Total Analysis Volume [veh/h] & 362 & 869 & 17 & 0 & 1316 & 12 & 3 & 13 & 114 & 26 & 42 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 80 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 24 & 47 & 0 & 14 & 37 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 12 & 53 & 0 & 41 & 41 & 15 & 15 & 15 & 15 \\
\hline g / C, Green / Cycle & 0.15 & 0.66 & 0.00 & 0.52 & 0.52 & 0.19 & 0.19 & 0.19 & 0.19 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.12 & 0.53 & 0.00 & 0.41 & 0.01 & 0.02 & 0.08 & 0.19 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1671 & 1597 & 3192 & 1425 & 768 & 1425 & 354 & 1425 \\
\hline c, Capacity [veh/h] & 454 & 1109 & 0 & 1652 & 737 & 196 & 265 & 128 & 265 \\
\hline d1, Uniform Delay [s] & 32.99 & 9.62 & 0.00 & 15.85 & 9.39 & 27.16 & 28.81 & 28.48 & 26.56 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.25 & 6.03 & 0.00 & 4.09 & 0.04 & 0.18 & 1.10 & 3.39 & 0.02 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.80 & 0.80 & 0.00 & 0.80 & 0.02 & 0.08 & 0.43 & 0.53 & 0.01 \\
\hline d, Delay for Lane Group [s/veh] & 36.24 & 15.65 & 0.00 & 19.94 & 9.43 & 27.34 & 29.91 & 31.87 & 26.57 \\
\hline Lane Group LOS & D & B & A & B & A & C & C & C & C \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline \hline 50th-Percentile Queue Length [veh] & 3.17 & 7.53 & 0.00 & 7.95 & 0.08 & 0.25 & 1.96 & 1.20 & 0.05 \\
\hline 50th-Percentile Queue Length [ft] & 79.35 & 188.26 & 0.00 & 198.71 & 2.10 & 6.37 & 49.08 & 29.92 & 1.17 \\
\hline 95th-Percentile Queue Length [veh] & 5.71 & 12.03 & 0.00 & 12.57 & 0.15 & 0.46 & 3.53 & 2.15 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 142.83 & 300.76 & 0.00 & 314.30 & 3.78 & 11.47 & 88.34 & 53.86 & 2.11 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.24 & 15.65 & 15.65 & 0.00 & 19.94 & 9.43 & 27.34 & 27.34 & 29.91 & 31.87 & 31.87 & 26.57 \\
\hline Movement LOS & D & B & B & A & B & A & C & C & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{21.62} & \multicolumn{3}{|c|}{19.84} & \multicolumn{3}{|c|}{29.59} & \multicolumn{3}{|c|}{31.65} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{21.40} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.850} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 132.5 \\
Level Of Service: & F \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.329
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 459 & 283 & 2 & 19 & 86 & 87 & 70 & 77 & 374 & 2 & 92 & 57 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 484 & 908 & 170 & 91 & 1081 & 144 & 110 & 92 & 406 & 185 & 104 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 134 & 251 & 47 & 25 & 299 & 40 & 30 & 25 & 112 & 51 & 29 & 32 \\
\hline Total Analysis Volume [veh/h] & 535 & 1003 & 188 & 101 & 1194 & 159 & 122 & 102 & 449 & 204 & 115 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 34 & 53 & 0 & 18 & 37 & 0 & 30 & 33 & 0 & 16 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 30 & 54 & 54 & 9 & 33 & 33 & 11 & 29 & 29 & 12 & 30 & 30 \\
\hline g / C, Green / Cycle & 0.25 & 0.45 & 0.45 & 0.08 & 0.28 & 0.28 & 0.09 & 0.24 & 0.24 & 0.10 & 0.25 & 0.25 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.34 & 0.31 & 0.13 & 0.06 & 0.37 & 0.11 & 0.08 & 0.06 & 0.32 & 0.13 & 0.07 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 399 & 1434 & 640 & 123 & 881 & 393 & 147 & 404 & 343 & 160 & 417 & 355 \\
\hline d1, Uniform Delay [s] & 45.00 & 26.55 & 20.98 & 54.59 & 43.45 & 35.41 & 53.58 & 36.83 & 45.56 & 54.00 & 36.34 & 37.22 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 169.23 & 2.86 & 1.17 & 12.76 & 167.50 & 3.07 & 11.40 & 0.33 & 158.51 & 164.21 & 0.35 & 0.63 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.34 & 0.70 & 0.29 & 0.82 & 1.36 & 0.40 & 0.83 & 0.25 & 1.31 & 1.28 & 0.28 & 0.36 \\
\hline d, Delay for Lane Group [s/veh] & 214.24 & 29.42 & 22.14 & 67.35 & 210.95 & 38.48 & 64.97 & 37.16 & 204.06 & 218.21 & 36.70 & 37.85 \\
\hline Lane Group LOS & F & C & C & E & F & D & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 29.69 & 10.74 & 3.22 & 3.27 & 32.45 & 3.86 & 4.08 & 2.47 & 25.23 & 11.98 & 2.69 & 3.11 \\
\hline 50th-Percentile Queue Length [ft] & 742.15 & 268.38 & 80.44 & 81.75 & 811.36 & 96.42 & 102.05 & 61.76 & 630.71 & 299.42 & 67.26 & 77.63 \\
\hline 95th-Percentile Queue Length [veh] & 44.89 & 16.11 & 5.79 & 5.89 & 49.09 & 6.94 & 7.35 & 4.45 & 38.38 & 19.26 & 4.84 & 5.59 \\
\hline 95th-Percentile Queue Length [ft] & 1122.22 & 402.71 & 144.79 & 147.15 & 1227.29 & 173.55 & 183.69 & 111.17 & 959.48 & 481.59 & 121.07 & 139.73 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 214.24 & 29.42 & 22.14 & 67.35 & 210.95 & 38.48 & 64.97 & 37.16 & 204.06 & 218.21 & 36.70 & 37.85 \\
\hline Movement LOS & F & C & C & E & F & D & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{85.91} & \multicolumn{3}{|c|}{182.11} & \multicolumn{3}{|c|}{153.55} & \multicolumn{3}{|c|}{119.68} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{132.54} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.329} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
49.5

D
0.934

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 469 & 2 & 175 & 287 & 0 & 0 & 0 & 0 & 2 & 0 & 275 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1198 & 79 & 223 & 1451 & 12 & 18 & 10 & 12 & 152 & 21 & 354 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 333 & 22 & 62 & 403 & 3 & 5 & 3 & 3 & 42 & 6 & 98 \\
\hline Total Analysis Volume [veh/h] & 26 & 1331 & 88 & 248 & 1612 & 13 & 20 & 11 & 13 & 169 & 23 & 393 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 59 & 0 & 14 & 62 & 0 & 11 & 30 & 0 & 17 & 36 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 56 & 56 & 10 & 62 & 62 & 3 & 25 & 25 & 13 & 35 & 35 \\
\hline g / C, Green / Cycle & 0.03 & 0.47 & 0.47 & 0.08 & 0.52 & 0.52 & 0.03 & 0.21 & 0.21 & 0.11 & 0.29 & 0.29 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.42 & 0.06 & 0.08 & 0.51 & 0.01 & 0.01 & 0.01 & 0.01 & 0.11 & 0.01 & 0.28 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 54 & 1491 & 666 & 258 & 1649 & 736 & 45 & 348 & 296 & 173 & 482 & 410 \\
\hline d1, Uniform Delay [s] & 56.94 & 29.22 & 18.16 & 54.80 & 28.32 & 14.15 & 57.36 & 37.90 & 38.00 & 53.35 & 30.86 & 42.03 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.38 & 0.11 & 0.41 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.49 & 8.53 & 0.41 & 17.97 & 17.42 & 0.04 & 6.59 & 0.04 & 0.06 & 53.99 & 0.04 & 30.96 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.48 & 0.89 & 0.13 & 0.96 & 0.98 & 0.02 & 0.44 & 0.03 & 0.04 & 0.98 & 0.05 & 0.96 \\
\hline d, Delay for Lane Group [s/veh] & 63.43 & 37.75 & 18.57 & 72.77 & 45.74 & 14.19 & 63.94 & 37.94 & 38.06 & 107.34 & 30.90 & 72.99 \\
\hline Lane Group LOS & E & D & B & E & D & B & E & D & D & F & C & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.84 & 17.48 & 1.37 & 4.22 & 23.72 & 0.17 & 0.69 & 0.27 & 0.32 & 7.67 & 0.49 & 14.83 \\
\hline 50th-Percentile Queue Length [ft] & 21.06 & 436.97 & 34.18 & 105.53 & 592.92 & 4.20 & 17.13 & 6.66 & 7.91 & 191.67 & 12.28 & 370.80 \\
\hline 95th-Percentile Queue Length [veh] & 1.52 & 24.34 & 2.46 & 7.59 & 31.70 & 0.30 & 1.23 & 0.48 & 0.57 & 12.21 & 0.88 & 21.15 \\
\hline 95th-Percentile Queue Length [ft] & 37.91 & 608.38 & 61.52 & 189.77 & 792.59 & 7.56 & 30.83 & 11.98 & 14.23 & 305.19 & 22.11 & 528.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 63.43 & 37.75 & 18.57 & 72.77 & 45.74 & 14.19 & 63.94 & 37.94 & 38.06 & 107.34 & 30.90 & 72.99 \\
\hline Movement LOS & E & D & B & E & D & B & E & D & D & F & C & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{37.04} & \multicolumn{3}{|c|}{49.10} & \multicolumn{3}{|c|}{49.80} & \multicolumn{3}{|c|}{81.26} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{49.46} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.934} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
40.3

D
0.971

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 391 & 0 & 0 & 244 & 45 & 80 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 90 & 1078 & 4 & 6 & 1532 & 139 & 139 & 4 & 126 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 26 & 307 & 1 & 2 & 436 & 40 & 40 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 103 & 1228 & 5 & 7 & 1745 & 158 & 158 & 5 & 144 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 90 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 13 & 48 & 0 & 11 & 46 & 0 & 12 & 20 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 35 & 35 & 1 & 30 & 30 & 8 & 9 & 9 & 0 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.10 & 0.58 & 0.58 & 0.01 & 0.49 & 0.49 & 0.13 & 0.14 & 0.14 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.38 & 0.00 & 0.00 & 0.55 & 0.11 & 0.10 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 153 & 1836 & 820 & 22 & 1573 & 702 & 202 & 238 & 203 & 10 & 37 & 31 \\
\hline d1, Uniform Delay [s] & 26.59 & 8.92 & 5.51 & 29.74 & 15.43 & 8.80 & 25.77 & 22.46 & 24.91 & 30.11 & 29.20 & 29.26 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.12 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.07 & 0.43 & 0.00 & 8.44 & 51.80 & 0.16 & 6.49 & 0.03 & 4.57 & 15.91 & 1.66 & 3.57 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.67 & 0.67 & 0.01 & 0.32 & 1.11 & 0.22 & 0.78 & 0.02 & 0.71 & 0.30 & 0.14 & 0.22 \\
\hline d, Delay for Lane Group [s/veh] & 31.66 & 9.35 & 5.51 & 38.18 & 67.23 & 8.96 & 32.26 & 22.50 & 29.48 & 46.02 & 30.86 & 32.83 \\
\hline Lane Group LOS & C & A & A & D & F & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 1.45 & 3.24 & 0.02 & 0.14 & 18.34 & 0.84 & 2.45 & 0.06 & 2.12 & 0.09 & 0.09 & 0.13 \\
\hline 50th-Percentile Queue Length [ft] & 36.33 & 80.90 & 0.41 & 3.48 & 458.40 & 20.88 & 61.14 & 1.51 & 52.90 & 2.15 & 2.13 & 3.17 \\
\hline 95th-Percentile Queue Length [veh] & 2.62 & 5.82 & 0.03 & 0.25 & 27.28 & 1.50 & 4.40 & 0.11 & 3.81 & 0.15 & 0.15 & 0.23 \\
\hline 95th-Percentile Queue Length [ft] & 65.40 & 145.61 & 0.74 & 6.27 & 682.04 & 37.58 & 110.05 & 2.72 & 95.22 & 3.87 & 3.84 & 5.71 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 31.66 & 9.35 & 5.51 & 38.18 & 67.23 & 8.96 & 32.26 & 22.50 & 29.48 & 46.02 & 30.86 & 32.83 \\
\hline Movement LOS & C & A & A & D & F & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.06} & \multicolumn{3}{|c|}{62.30} & \multicolumn{3}{|c|}{30.80} & \multicolumn{3}{|c|}{34.81} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{40.29} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.971} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
218.7

F
1.617

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 59 & 181 & 0 & 69 & 113 & 63 & 101 & 3 & 22 & 0 & 3 & 110 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 432 & 861 & 99 & 91 & 1439 & 153 & 170 & 126 & 578 & 217 & 245 & 128 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 120 & 239 & 27 & 25 & 399 & 42 & 47 & 35 & 160 & 60 & 68 & 36 \\
\hline Total Analysis Volume [veh/h] & 479 & 956 & 110 & 101 & 1597 & 170 & 189 & 140 & 642 & 241 & 272 & 142 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 49 & 0 & 18 & 41 & 0 & 30 & 38 & 38 & 15 & 23 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 22, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 50 & 50 & 9 & 37 & 37 & 16 & 34 & 34 & 11 & 29 \\
\hline g / C, Green / Cycle & 0.18 & 0.42 & 0.42 & 0.08 & 0.31 & 0.31 & 0.13 & 0.28 & 0.28 & 0.09 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.32 & 0.33 & 0.06 & 0.50 & 0.12 & 0.12 & 0.08 & 0.45 & 0.15 & 0.26 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1617 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1581 \\
\hline c, Capacity [veh/h] & 293 & 698 & 673 & 123 & 989 & 441 & 216 & 472 & 402 & 147 & 377 \\
\hline d1, Uniform Delay [s] & 49.00 & 30.15 & 30.33 & 54.58 & 41.42 & 32.46 & 50.92 & 33.78 & 43.10 & 54.50 & 45.69 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 301.24 & 8.14 & 8.83 & 12.65 & 281.56 & 2.53 & 11.23 & 0.35 & 281.03 & 318.37 & 75.38 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.64 & 0.77 & 0.78 & 0.82 & 1.62 & 0.39 & 0.88 & 0.30 & 1.60 & 1.64 & 1.10 \\
\hline d, Delay for Lane Group [s/veh] & 350.24 & 38.29 & 39.16 & 67.24 & 322.98 & 35.00 & 62.15 & 34.12 & 324.13 & 372.87 & 121.08 \\
\hline Lane Group LOS & F & D & D & E & F & C & E & C & F & F & F \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 32.82 & 13.87 & 13.73 & 3.32 & 52.28 & 3.98 & 6.24 & 3.26 & 43.10 & 17.39 & 19.02 \\
\hline 50th-Percentile Queue Length [ft] & 820.45 & 346.77 & 343.16 & 82.91 & 1306.98 & 99.50 & 155.89 & 81.47 & 1077.52 & 434.63 & 475.62 \\
\hline 95th-Percentile Queue Length [veh] & 51.33 & 19.98 & 19.80 & 5.97 & 81.11 & 7.16 & 10.33 & 5.87 & 67.26 & 28.09 & 27.60 \\
\hline 95th-Percentile Queue Length [ft] & 1283.27 & 499.46 & 495.06 & 149.23 & 2027.71 & 179.10 & 258.28 & 146.64 & 1681.62 & 702.26 & 690.12 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 350.24 & 38.67 & 39.16 & 67.24 & 322.98 & 35.00 & 62.15 & 34.12 & 324.13 & 372.87 & 121.08 & 121.08 \\
\hline Movement LOS & F & D & D & E & F & C & E & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{135.30} & \multicolumn{3}{|c|}{282.94} & \multicolumn{3}{|c|}{231.32} & \multicolumn{3}{|c|}{213.72} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{218.73} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.617} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 47.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.993
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 128 & 0 & 74 & 61 & 0 & 112 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1043 & 225 & 397 & 1825 & 389 & 365 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 280 & 60 & 107 & 491 & 105 & 98 \\
\hline Total Analysis Volume [veh/h] & 1122 & 242 & 427 & 1962 & 418 & 392 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 47 & 0 & 36 & 83 & 37 & 37 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 43 & 43 & 32 & 79 & 33 & 33 \\
\hline g / C, Green / Cycle & 0.36 & 0.36 & 0.27 & 0.66 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.35 & 0.17 & 0.27 & 0.61 & 0.13 & 0.28 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1143 & 510 & 426 & 2101 & 853 & 392 \\
\hline d1, Uniform Delay [s] & 38.09 & 29.75 & 43.97 & 18.17 & 36.43 & 43.47 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.46 & 0.50 & 0.11 & 0.46 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 22.49 & 3.14 & 42.30 & 9.22 & 0.44 & 43.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.98 & 0.47 & 1.00 & 0.93 & 0.49 & 1.00 \\
\hline d, Delay for Lane Group [s/veh] & 60.57 & 32.89 & 86.27 & 27.39 & 36.87 & 86.91 \\
\hline Lane Group LOS & E & C & F & C & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 18.59 & 5.51 & 16.86 & 21.44 & 5.19 & Yes \\
\hline 50th-Percentile Queue Length [ft] & 464.81 & 137.66 & 421.50 & 536.07 & 129.78 & 40.23 \\
\hline 95th-Percentile Queue Length [veh] & 25.66 & 9.35 & 23.63 & 29.04 & 8.93 & 2 \\
\hline 95th-Percentile Queue Length [ft] & 641.59 & 233.87 & 590.85 & 725.92 & 223.19 & 570.98 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 60.57 & 32.89 & 86.27 & 27.39 & 36.87 & 86.91 \\
\hline Movement LOS & E & C & F & C & D & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{55.66} & \multicolumn{2}{|c|}{37.92} & \multicolumn{2}{|c|}{61.08} \\
\hline Approach LOS & \multicolumn{2}{|c|}{E} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{47.33} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.993} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec / veh): & 357.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.250
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 521 & 47 & 0 & 638 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 82 & 525 & 50 & 92 & 641 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 28 & 179 & 17 & 31 & 218 \\
\hline Total Analysis Volume [veh/h] & 84 & 112 & 715 & 68 & 125 & 873 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 1.25 & 0.27 & 0.01 & 0.00 & 0.15 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 357.38 & 312.56 & 0.00 & 0.00 & 10.07 & 0.00 \\
\hline Movement LOS & F & F & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 13.75 & 13.75 & 0.00 & 0.00 & 0.53 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 343.66 & 343.66 & 0.00 & 0.00 & 13.13 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{331.77} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.26} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{33.53} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 11.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.015
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 46 & 9 & 24 & 81 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 46 & 9 & 75 & 81 & 7 & 33 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 16 & 3 & 25 & 27 & 2 & 11 \\
\hline Total Analysis Volume [veh/h] & 62 & 12 & 101 & 109 & 9 & 45 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.07 & 0.00 & 0.02 & 0.05 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.53 & 0.00 & 11.45 & 8.88 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.21 & 0.00 & 0.19 & 0.19 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 5.31 & 0.00 & 4.84 & 4.84 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.62} & \multicolumn{2}{|c|}{9.31} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{3.74} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 214 & 135 & 35 & 55 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 333 & 288 & 135 & 173 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 124 & 107 & 50 & 64 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 496 & 429 & 201 & 258 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 1.13 & 3.21 & 3.21 & 5.19 & 4.61 & 4.17 & 1.29 \\
\hline 95th-Percentile Queue Length [ft] & 28.21 & 80.31 & 80.31 & 129.82 & 115.13 & 104.18 & 32.28 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{18.73} & \multicolumn{2}{|c|}{24.77} & \multicolumn{2}{|c|}{21.01} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{21.60} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 28.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{2}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 114 & 16 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 104 & 0 & 0 & 64 & 34 & 53 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 120 & 277 & 0 & 1 & 318 & 100 & 99 & 3 & 116 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 83 & 0 & 0 & 96 & 30 & 30 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 144 & 333 & 0 & 1 & 382 & 120 & 119 & 4 & 139 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 8.68 & 9.21 & 1.04 & 0.02 & 1.02 & 0.11 \\
\hline 95th-Percentile Queue Length [ft] & 217.03 & 230.29 & 25.94 & 0.62 & 25.56 & 2.73 \\
\hline Approach Delay [s/veh] & 33.15 & 33.92 & \multicolumn{3}{|c|}{12.44} & 11.76 \\
\hline Approach LOS & D & D & B \\
\hline Intersection Delay [s/veh] & \multicolumn{5}{|c|}{D} \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

Vistro File: Q:\...Itvcs1.vistro
Scenario 8: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM
Report File: Q:I...lintersections.pdf
Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Thru & 1.671 & 221.5 & F \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 1.585 & 236.2 & F \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Right & 1.357 & 143.1 & F \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Thru & 1.067 & 108.0 & F \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.598 & 261.2 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.537 & 176.8 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.229 & 86.7 & F \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.006 & 12.7 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & SB Thru & & 68.5 & F \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 85.1 & F \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
221.5

F
1.671

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 526 & 88 & 3 & 0 & 95 & 12 & 20 & 98 & 828 & 2 & 62 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 530 & 1274 & 6 & 2 & 941 & 13 & 22 & 100 & 829 & 5 & 62 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 355 & 2 & 1 & 263 & 4 & 6 & 28 & 231 & 1 & 17 & 0 \\
\hline Total Analysis Volume [veh/h] & 592 & 1422 & 7 & 2 & 1050 & 15 & 25 & 112 & 925 & 6 & 69 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 58 & 0 & 11 & 43 & 0 & 0 & 51 & 0 & 0 & 51 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 61 & 0 & 39 & 39 & 47 & 47 & 47 & 47 \\
\hline g / C, Green / Cycle & 0.18 & 0.50 & 0.00 & 0.33 & 0.33 & 0.39 & 0.39 & 0.39 & 0.39 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.19 & 0.85 & 0.00 & 0.33 & 0.01 & 0.13 & 0.65 & 0.05 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 1081 & 1425 & 1477 & 1425 \\
\hline c, Capacity [veh/h] & 569 & 846 & 7 & 1039 & 464 & 458 & 557 & 610 & 557 \\
\hline d1, Uniform Delay [s] & 48.97 & 29.70 & 59.55 & 40.46 & 27.58 & 25.27 & 36.54 & 23.40 & 22.27 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 29.15 & 315.59 & 22.54 & 30.51 & 0.13 & 0.36 & 305.17 & 0.09 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.04 & 1.69 & 0.30 & 1.01 & 0.03 & 0.30 & 1.66 & 0.12 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 78.12 & 345.29 & 82.09 & 70.96 & 27.70 & 25.63 & 341.71 & 23.49 & 22.27 \\
\hline Lane Group LOS & F & F & F & F & C & C & F & C & C \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 10.23 & 94.67 & 0.10 & 18.28 & 0.29 & 2.64 & 63.14 & 1.38 & 0.02 \\
\hline 50th-Percentile Queue Length [ft] & 255.67 & 2366.82 & 2.50 & 456.95 & 7.24 & 66.06 & 1578.39 & 34.54 & 0.44 \\
\hline 95th-Percentile Queue Length [veh] & 15.78 & 148.83 & 0.18 & 25.47 & 0.52 & 4.76 & 99.11 & 2.49 & 0.03 \\
\hline 95th-Percentile Queue Length [ft] & 394.44 & 3720.75 & 4.49 & 636.63 & 13.04 & 118.91 & 2477.83 & 62.17 & 0.79 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.12 & 345.29 & 345.29 & 82.09 & 70.96 & 27.70 & 25.63 & 25.63 & 341.71 & 23.49 & 23.49 & 22.27 \\
\hline Movement LOS & F & F & F & F & F & C & C & C & F & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{267.03} & \multicolumn{3}{|c|}{70.38} & \multicolumn{3}{|c|}{300.93} & \multicolumn{3}{|c|}{23.47} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{221.52} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.671} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
236.2

F 1.585

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 519 & 447 & 7 & 142 & 706 & 77 & 78 & 110 & 511 & 6 & 110 & 92 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 535 & 1608 & 146 & 177 & 1515 & 93 & 93 & 115 & 529 & 100 & 117 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 444 & 40 & 49 & 419 & 26 & 26 & 32 & 146 & 28 & 32 & 32 \\
\hline Total Analysis Volume [veh/h] & 591 & 1777 & 161 & 196 & 1674 & 103 & 103 & 127 & 585 & 110 & 129 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 31 & 45 & 0 & 29 & 43 & 0 & 18 & 35 & 0 & 11 & 28 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 49 & 49 & 17 & 39 & 39 & 9 & 31 & 31 & 7 & 29 & 29 \\
\hline g / C, Green / Cycle & 0.22 & 0.41 & 0.41 & 0.14 & 0.33 & 0.33 & 0.08 & 0.26 & 0.26 & 0.06 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.37 & 0.56 & 0.11 & 0.12 & 0.52 & 0.07 & 0.06 & 0.08 & 0.41 & 0.07 & 0.08 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 359 & 1317 & 588 & 222 & 1043 & 466 & 125 & 430 & 366 & 93 & 397 & 337 \\
\hline d1, Uniform Delay [s] & 46.50 & 35.25 & 23.34 & 50.69 & 40.40 & 29.32 & 54.50 & 35.88 & 44.60 & 56.50 & 37.86 & 38.43 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.14 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.44 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 302.57 & 162.30 & 1.15 & 13.87 & 276.91 & 1.10 & 12.65 & 0.38 & 282.45 & 143.44 & 0.47 & 0.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.65 & 1.35 & 0.27 & 0.88 & 1.61 & 0.22 & 0.82 & 0.30 & 1.60 & 1.18 & 0.32 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 349.07 & 197.54 & 24.49 & 64.57 & 317.31 & 30.42 & 67.15 & 36.25 & 327.06 & 199.94 & 38.33 & 39.14 \\
\hline Lane Group LOS & F & F & C & E & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 40.09 & 46.65 & 2.93 & 6.27 & 54.04 & 2.14 & 3.50 & 3.05 & 39.45 & 6.47 & 3.11 & 3.17 \\
\hline 50th-Percentile Queue Length [ft] & 1002.32 & 1166.18 & 73.35 & 156.69 & 1350.95 & 53.49 & 87.61 & 76.25 & 986.18 & 161.70 & 77.63 & 79.14 \\
\hline 95th-Percentile Queue Length [veh] & 62.48 & 69.67 & 5.28 & 10.37 & 83.80 & 3.85 & 6.31 & 5.49 & 61.65 & 11.16 & 5.59 & 5.70 \\
\hline 95th-Percentile Queue Length [ft] & 1561.95 & 1741.76 & 132.03 & 259.33 & 2094.93 & 96.27 & 157.70 & 137.25 & 1541.18 & 278.92 & 139.74 & 142.45 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 349.07 & 197.54 & 24.49 & 64.57 & 317.31 & 30.42 & 67.15 & 36.25 & 327.06 & 199.94 & 38.33 & 39.14 \\
\hline Movement LOS & F & F & C & E & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{221.94} & \multicolumn{3}{|c|}{277.22} & \multicolumn{3}{|c|}{248.89} & \multicolumn{3}{|c|}{86.92} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{236.25} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.585} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
143.1

F
1.357

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{77浐} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{7 | \({ }^{\text {F }}\)} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 630 & 10 & 430 & 793 & 0 & 0 & 0 & 0 & 9 & 0 & 343 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1885 & 188 & 516 & 1726 & 8 & 6 & 15 & 25 & 131 & 27 & 403 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 524 & 52 & 143 & 479 & 2 & 2 & 4 & 7 & 36 & 8 & 112 \\
\hline Total Analysis Volume [veh/h] & 27 & 2094 & 209 & 573 & 1918 & 9 & 7 & 17 & 28 & 146 & 30 & 448 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 110 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 56 & 0 & 19 & 64 & 0 & 11 & 21 & 0 & 14 & 24 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 52 & 52 & 15 & 63 & 63 & 1 & 17 & 17 & 10 & 26 & 26 \\
\hline g / C, Green / Cycle & 0.04 & 0.47 & 0.47 & 0.14 & 0.57 & 0.57 & 0.01 & 0.15 & 0.15 & 0.09 & 0.23 & 0.23 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.66 & 0.15 & 0.18 & 0.60 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.31 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 57 & 1514 & 676 & 423 & 1835 & 819 & 20 & 257 & 218 & 145 & 388 & 330 \\
\hline d1, Uniform Delay [s] & 52.01 & 28.92 & 17.82 & 47.50 & 23.39 & 10.01 & 53.89 & 39.86 & 40.25 & 50.00 & 33.06 & 42.26 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.18 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.37 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.93 & 176.75 & 1.19 & 165.52 & 34.02 & 0.02 & 10.53 & 0.11 & 0.26 & 65.93 & 0.08 & 179.27 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.47 & 1.38 & 0.31 & 1.35 & 1.05 & 0.01 & 0.36 & 0.07 & 0.13 & 1.01 & 0.08 & 1.36 \\
\hline d, Delay for Lane Group [s/veh] & 57.95 & 205.67 & 19.01 & 213.02 & 57.41 & 10.03 & 64.42 & 39.97 & 40.51 & 115.94 & 33.15 & 221.53 \\
\hline Lane Group LOS & E & F & B & F & F & B & E & D & D & F & C & F \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.79 & 54.52 & 3.18 & 15.20 & 28.07 & 0.09 & 0.25 & 0.41 & 0.68 & 6.64 & 0.64 & 25.28 \\
\hline 50th-Percentile Queue Length [ft] & 19.83 & 1363.12 & 79.47 & 379.96 & 701.74 & 2.18 & 6.28 & 10.15 & 16.96 & 165.90 & 15.94 & 631.93 \\
\hline 95th-Percentile Queue Length [veh] & 1.43 & 82.05 & 5.72 & 24.30 & 38.13 & 0.16 & 0.45 & 0.73 & 1.22 & 10.88 & 1.15 & 38.91 \\
\hline 95th-Percentile Queue Length [ft] & 35.69 & 2051.27 & 143.04 & 607.42 & 953.27 & 3.92 & 11.30 & 18.27 & 30.53 & 272.07 & 28.68 & 972.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 57.95 & 205.67 & 19.01 & 213.02 & 57.41 & 10.03 & 64.42 & 39.97 & 40.51 & 115.94 & 33.15 & 221.53 \\
\hline Movement LOS & E & F & B & F & F & B & E & D & D & F & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{187.22} & \multicolumn{3}{|c|}{92.91} & \multicolumn{3}{|c|}{43.55} & \multicolumn{3}{|c|}{187.77} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{143.10} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.357} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 108.0 \\
Level Of Service: & F \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.067
\end{tabular}

Volume to Capacity (v/c):

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 4 & 507 & 0 & 0 & 635 & 167 & 133 & 0 & 4 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 158 & 1839 & 5 & 2 & 1530 & 214 & 225 & 1 & 89 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 45 & 524 & 1 & 1 & 436 & 61 & 64 & 0 & 25 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 180 & 2095 & 6 & 2 & 1743 & 244 & 256 & 1 & 101 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 10 & 40 & 40 & 0 & 30 & 30 & 14 & 14 & 14 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.14 & 0.56 & 0.56 & 0.00 & 0.42 & 0.42 & 0.19 & 0.20 & 0.20 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.66 & 0.00 & 0.00 & 0.55 & 0.17 & 0.16 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 223 & 1778 & 794 & 7 & 1346 & 601 & 304 & 339 & 288 & 18 & 38 & 33 \\
\hline d1, Uniform Delay [s] & 29.67 & 15.75 & 7.00 & 35.31 & 20.57 & 14.35 & 27.74 & 22.66 & 24.37 & 34.88 & 33.99 & 34.22 \\
\hline k, delay calibration & 0.11 & 0.29 & 0.11 & 0.11 & 0.19 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.75 & 83.79 & 0.00 & 22.11 & 134.93 & 0.44 & 6.21 & 0.00 & 0.73 & 9.86 & 0.55 & 5.91 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.81 & 1.18 & 0.01 & 0.29 & 1.29 & 0.41 & 0.84 & 0.00 & 0.35 & 0.33 & 0.05 & 0.34 \\
\hline d, Delay for Lane Group [s/veh] & 36.42 & 99.54 & 7.01 & 57.42 & 155.50 & 14.79 & 33.95 & 22.66 & 25.10 & 44.75 & 34.55 & 40.13 \\
\hline Lane Group LOS & D & F & A & E & F & B & C & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 3.05 & 30.13 & 0.03 & 0.07 & 33.80 & 2.24 & 4.51 & 0.01 & 1.46 & 0.15 & 0.04 & 0.24 \\
\hline 50th-Percentile Queue Length [ft] & 76.16 & 753.36 & 0.73 & 1.83 & 844.97 & 56.07 & 112.87 & 0.33 & 36.41 & 3.76 & 0.97 & 5.88 \\
\hline 95th-Percentile Queue Length [veh] & 5.48 & 44.17 & 0.05 & 0.13 & 50.99 & 4.04 & 8.00 & 0.02 & 2.62 & 0.27 & 0.07 & 0.42 \\
\hline 95th-Percentile Queue Length [ft] & 137.09 & 1104.17 & 1.31 & 3.29 & 1274.77 & 100.92 & 199.99 & 0.59 & 65.54 & 6.78 & 1.74 & 10.59 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.42 & 99.54 & 7.01 & 57.42 & 155.50 & 14.79 & 33.95 & 22.66 & 25.10 & 44.75 & 34.55 & 40.13 \\
\hline Movement LOS & D & F & A & E & F & B & C & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{94.31} & \multicolumn{3}{|c|}{138.14} & \multicolumn{3}{|c|}{31.42} & \multicolumn{3}{|c|}{41.00} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{108.01} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.067} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
261.2

F
1.598

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 45 & 216 & 0 & 173 & 275 & 191 & 158 & 8 & 72 & 0 & 8 & 137 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 499 & 1618 & 208 & 202 & 1140 & 254 & 235 & 189 & 634 & 176 & 146 & 158 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 138 & 449 & 58 & 56 & 316 & 70 & 65 & 52 & 176 & 49 & 41 & 44 \\
\hline Total Analysis Volume [veh/h] & 554 & 1796 & 231 & 224 & 1265 & 282 & 261 & 210 & 704 & 195 & 162 & 175 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 30 & 51 & 0 & 15 & 36 & 0 & 23 & 41 & 41 & 13 & 31 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 22, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 26 & 47 & 47 & 11 & 32 & 32 & 19 & 37 & 37 & 9 & 27 \\
\hline g / C, Green / Cycle & 0.22 & 0.39 & 0.39 & 0.09 & 0.27 & 0.27 & 0.16 & 0.31 & 0.31 & 0.08 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.60 & 0.63 & 0.14 & 0.40 & 0.20 & 0.16 & 0.13 & 0.49 & 0.12 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1612 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1536 \\
\hline c, Capacity [veh/h] & 346 & 659 & 633 & 147 & 856 & 382 & 253 & 514 & 437 & 120 & 343 \\
\hline d1, Uniform Delay [s] & 47.01 & 36.43 & 36.43 & 54.50 & 43.92 & 40.07 & 50.50 & 33.00 & 41.62 & 55.50 & 46.38 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.45 & 0.11 & 0.50 & 0.50 & 0.43 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 283.83 & 249.88 & 277.53 & 267.99 & 221.19 & 12.02 & 61.98 & 0.52 & 285.86 & 314.39 & 40.88 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.60 & 1.54 & 1.60 & 1.53 & 1.48 & 0.74 & 1.03 & 0.41 & 1.61 & 1.62 & 0.98 \\
\hline d, Delay for Lane Group [s/veh] & 330.84 & 286.31 & 313.96 & 322.49 & 265.10 & 52.09 & 112.49 & 33.52 & 327.48 & 369.89 & 87.26 \\
\hline Lane Group LOS & F & F & F & F & F & D & F & C & F & F & F \\
\hline Critical Lane Group & No & No & Yes & Yes & No & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 37.03 & 63.34 & 65.76 & 15.17 & 38.24 & 8.45 & 11.93 & 4.93 & 47.40 & 14.14 & 13.82 \\
\hline 50th-Percentile Queue Length [ft] & 925.82 & 1583.62 & 1643.99 & 379.36 & 955.88 & 211.20 & 298.13 & 123.15 & 1185.09 & 353.44 & 345.45 \\
\hline 95th-Percentile Queue Length [veh] & 57.58 & 97.12 & 101.87 & 24.60 & 58.66 & 13.21 & 17.86 & 8.57 & 74.01 & 23.20 & 19.91 \\
\hline 95th-Percentile Queue Length [ft] & 1439.53 & 2428.04 & 2546.68 & 614.90 & 1466.53 & 330.37 & 446.41 & 214.15 & 1850.32 & 579.92 & 497.85 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 330.84 & 298.36 & 313.96 & 322.49 & 265.10 & 52.09 & 112.49 & 33.52 & 327.48 & 369.89 & 87.26 & 87.26 \\
\hline Movement LOS & F & F & F & F & F & D & F & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{306.73} & \multicolumn{3}{|c|}{238.44} & \multicolumn{3}{|c|}{227.19} & \multicolumn{3}{|c|}{190.86} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{261.17} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.598} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 176.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.537
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 118 & 0 & 178 & 169 & 0 & 143 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1726 & 408 & 505 & 1434 & 316 & 612 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 464 & 110 & 136 & 385 & 85 & 165 \\
\hline Total Analysis Volume [veh/h] & 1856 & 439 & 543 & 1542 & 340 & 658 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 49 & 0 & 31 & 80 & 40 & 40 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 45 & 45 & 27 & 76 & 36 & 36 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.23 & 0.63 & 0.30 & 0.30 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.58 & 0.31 & 0.34 & 0.48 & 0.11 & 0.46 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1196 & 534 & 360 & 2022 & 930 & 427 \\
\hline d1, Uniform Delay [s] & 37.49 & 33.88 & 46.46 & 15.59 & 33.01 & 41.98 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 252.32 & 13.34 & 243.46 & 2.79 & 0.24 & 254.26 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.55 & 0.82 & 1.51 & 0.76 & 0.37 & 1.54 \\
\hline d, Delay for Lane Group [s/veh] & 289.81 & 47.22 & 289.91 & 18.38 & 33.25 & 296.24 \\
\hline Lane Group LOS & F & D & F & C & F & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 58.01 & 12.64 & 34.44 & 13.01 & 3.93 & 42.67 \\
\hline 50th-Percentile Queue Length [ft] & 1450.14 & 316.12 & 860.96 & 325.25 & 98.36 & 1066.69 \\
\hline 95th-Percentile Queue Length [veh] & 89.44 & 18.48 & 53.16 & 18.93 & 7.08 & 66.17 \\
\hline 95th-Percentile Queue Length [ft] & 2235.94 & 461.91 & 1328.94 & 473.13 & 177.05 & 1654.24 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 289.81 & 47.22 & 289.91 & 18.38 & 33.25 & 296.24 \\
\hline Movement LOS & F & D & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{243.41} & \multicolumn{2}{|c|}{89.10} & \multicolumn{2}{|c|}{206.64} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{176.76} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.537} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 86.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.229
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 699 & 13 & 0 & 706 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 85 & 703 & 14 & 28 & 711 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 29 & 239 & 5 & 10 & 242 \\
\hline Total Analysis Volume [veh/h] & 14 & 116 & 958 & 19 & 38 & 969 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.23 & 0.38 & 0.01 & 0.00 & 0.05 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 86.71 & 39.49 & 0.00 & 0.00 & 10.39 & 0.00 \\
\hline Movement LOS & F & E & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 3.47 & 3.47 & 0.00 & 0.00 & 0.17 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 86.71 & 86.71 & 0.00 & 0.00 & 4.26 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{44.57} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.39} \\
\hline Approach LOS & \multicolumn{2}{|c|}{E} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.93} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 12.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.006
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 171 & 1 & 4 & 137 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 171 & 1 & 42 & 137 & 2 & 39 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 58 & 0 & 14 & 46 & 1 & 13 \\
\hline Total Analysis Volume [veh/h] & 231 & 1 & 57 & 185 & 3 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.01 & 0.07 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.82 & 0.00 & 12.74 & 9.81 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.13 & 0.00 & 0.23 & 0.23 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.34 & 0.00 & 5.78 & 5.78 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.84} & \multicolumn{2}{|c|}{9.97} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{1.89} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): & 68.5 \\
Analysis Method: & HCM 2010 & Level Of Service: &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 274 & 343 & 86 & 68 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 463 & 476 & 172 & 174 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 173 & 177 & 64 & 65 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 690 & 709 & 256 & 259 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03
Intersection Settings
Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.81 & 7.59 & 7.59 & 17.90 & 16.39 & 5.50 & 1.33 \\
\hline 95th-Percentile Queue Length [ft] & 20.29 & 189.87 & 189.87 & 447.56 & 409.72 & 137.43 & 33.16 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{37.22} & \multicolumn{2}{|c|}{109.58} & \multicolumn{2}{|c|}{28.96} \\
\hline Approach LOS & \multicolumn{3}{|c|}{E} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{68.55} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
85.1

F

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 137 & 0 & 0 & 172 & 89 & 72 & 0 & 2 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 141 & 39 & 7 & 3 & 356 & 147 & 152 & 4 & 103 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 118 & 2 & 1 & 107 & 44 & 46 & 1 & 31 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 169 & 472 & 8 & 4 & 428 & 177 & 183 & 5 & 124 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 23.02 & 17.88 & 2.01 & 0.03 & 0.93 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 575.50 & 446.97 & 50.16 & 0.81 & 23.27 & 2.05 \\
\hline Approach Delay [s/veh] & 122.07 & 83.11 & & 14.59 & & 11.97 \\
\hline Approach LOS & F & F & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{85.09} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\E+A+P+C AM_new.pdf

Scenario 7: \(E+A+P+C A M\)
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & EB Right & 0.736 & 15.9 & B \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 1.329 & 132.5 & F \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Left & 0.934 & 49.5 & D \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & NB Left & 0.825 & 21.0 & C \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.617 & 218.7 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.993 & 47.3 & D \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 1.250 & 357.4 & F \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.325 & 31.9 & D \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & SB Thru & & 21.6 & C \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 28.9 & D \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03
Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
15.9

HCM 2010
15 minutes
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):

B
0.736

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
771
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 323 & 75 & 12 & 0 & 79 & 8 & 2 & 11 & 98 & 15 & 38 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 324 & 779 & 15 & 0 & 1179 & 11 & 3 & 12 & 102 & 23 & 38 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 90 & 217 & 4 & 0 & 329 & 3 & 1 & 3 & 28 & 6 & 11 & 1 \\
\hline Total Analysis Volume [veh/h] & 362 & 869 & 17 & 0 & 1316 & 12 & 3 & 13 & 114 & 26 & 42 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 14 & 40 & 0 & 11 & 37 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 10 & 51 & 0 & 41 & 41 & 7 & 7 & 7 & 7 \\
\hline g / C, Green / Cycle & 0.14 & 0.73 & 0.00 & 0.59 & 0.59 & 0.10 & 0.10 & 0.10 & 0.10 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.12 & 0.53 & 0.00 & 0.41 & 0.01 & 0.01 & 0.08 & 0.06 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1671 & 1597 & 3192 & 1425 & 1554 & 1425 & 1090 & 1425 \\
\hline c, Capacity [veh/h] & 444 & 1212 & 3 & 1864 & 832 & 219 & 145 & 182 & 145 \\
\hline d1, Uniform Delay [s] & 29.15 & 5.63 & 0.00 & 10.33 & 6.12 & 28.55 & 30.74 & 29.96 & 28.34 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.71 & 3.91 & 0.00 & 2.28 & 0.03 & 0.14 & 8.94 & 1.27 & 0.06 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.82 & 0.73 & 0.00 & 0.71 & 0.01 & 0.07 & 0.78 & 0.37 & 0.02 \\
\hline d, Delay for Lane Group [s/veh] & 32.86 & 9.55 & 0.00 & 12.62 & 6.16 & 28.69 & 39.68 & 31.23 & 28.39 \\
\hline Lane Group LOS & C & A & A & B & A & C & D & C & C \\
\hline Critical Lane Group & No & Yes & No & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 2.73 & 2.90 & 0.00 & 4.62 & 0.05 & 0.24 & 2.17 & 1.14 & 0.05 \\
\hline 50th-Percentile Queue Length [ft] & 68.27 & 72.58 & 0.00 & 115.51 & 1.27 & 6.11 & 54.27 & 28.57 & 1.15 \\
\hline 95th-Percentile Queue Length [veh] & 4.92 & 5.23 & 0.00 & 8.15 & 0.09 & 0.44 & 3.91 & 2.06 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 122.89 & 130.64 & 0.00 & 203.63 & 2.29 & 11.00 & 97.69 & 51.43 & 2.08 \\
\hline
\end{tabular}
\(\qquad\)

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 32.86 & 9.55 & 9.55 & 0.00 & 12.62 & 6.16 & 28.69 & 28.69 & 39.68 & 31.23 & 31.23 & 28.39 \\
\hline Movement LOS & C & A & A & A & B & A & C & C & D & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{16.31} & \multicolumn{3}{|c|}{12.56} & \multicolumn{3}{|c|}{38.32} & \multicolumn{3}{|c|}{31.11} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.92} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.736} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 132.5 \\
Level Of Service: & F \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.329
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 459 & 283 & 2 & 19 & 86 & 87 & 70 & 77 & 374 & 2 & 92 & 57 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 484 & 908 & 170 & 91 & 1081 & 144 & 110 & 92 & 406 & 185 & 104 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 134 & 251 & 47 & 25 & 299 & 40 & 30 & 25 & 112 & 51 & 29 & 32 \\
\hline Total Analysis Volume [veh/h] & 535 & 1003 & 188 & 101 & 1194 & 159 & 122 & 102 & 449 & 204 & 115 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 34 & 53 & 0 & 18 & 37 & 0 & 30 & 33 & 0 & 16 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 30 & 54 & 54 & 9 & 33 & 33 & 11 & 29 & 29 & 12 & 30 & 30 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.25 & 0.45 & 0.45 & 0.08 & 0.28 & 0.28 & 0.09 & 0.24 & 0.24 & 0.10 & 0.25 & 0.25 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.34 & 0.31 & 0.13 & 0.06 & 0.37 & 0.11 & 0.08 & 0.06 & 0.32 & 0.13 & 0.07 & 0.09 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 399 & 1434 & 640 & 123 & 881 & 393 & 147 & 404 & 343 & 160 & 417 & 355 \\
\hline d1, Uniform Delay [s] & 45.00 & 26.55 & 20.98 & 54.59 & 43.45 & 35.41 & 53.58 & 36.83 & 45.56 & 54.00 & 36.34 & 37.22 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 169.23 & 2.86 & 1.17 & 12.76 & 167.50 & 3.07 & 11.40 & 0.33 & 158.51 & 164.21 & 0.35 & 0.63 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.34 & 0.70 & 0.29 & 0.82 & 1.36 & 0.40 & 0.83 & 0.25 & 1.31 & 1.28 & 0.28 & 0.36 \\
\hline d, Delay for Lane Group [s/veh] & 214.24 & 29.42 & 22.14 & 67.35 & 210.95 & 38.48 & 64.97 & 37.16 & 204.06 & 218.21 & 36.70 & 37.85 \\
\hline Lane Group LOS & F & C & C & E & F & D & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 29.69 & 10.74 & 3.22 & 3.27 & 32.45 & 3.86 & 4.08 & 2.47 & 25.23 & 11.98 & 2.69 & 3.11 \\
\hline 50th-Percentile Queue Length [ft] & 742.15 & 268.38 & 80.44 & 81.75 & 811.36 & 96.42 & 102.05 & 61.76 & 630.71 & 299.42 & 67.26 & 77.63 \\
\hline 95th-Percentile Queue Length [veh] & 44.89 & 16.11 & 5.79 & 5.89 & 49.09 & 6.94 & 7.35 & 4.45 & 38.38 & 19.26 & 4.84 & 5.59 \\
\hline 95th-Percentile Queue Length [ft] & 1122.22 & 402.71 & 144.79 & 147.15 & 1227.29 & 173.55 & 183.69 & 111.17 & 959.48 & 481.59 & 121.07 & 139.73 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 214.24 & 29.42 & 22.14 & 67.35 & 210.95 & 38.48 & 64.97 & 37.16 & 204.06 & 218.21 & 36.70 & 37.85 \\
\hline Movement LOS & F & C & C & E & F & D & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{85.91} & \multicolumn{3}{|c|}{182.11} & \multicolumn{3}{|c|}{153.55} & \multicolumn{3}{|c|}{119.68} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{132.54} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.329} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
49.5

D
0.934

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7!
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 469 & 2 & 175 & 287 & 0 & 0 & 0 & 0 & 2 & 0 & 275 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1198 & 79 & 223 & 1451 & 12 & 18 & 10 & 12 & 152 & 21 & 354 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 333 & 22 & 62 & 403 & 3 & 5 & 3 & 3 & 42 & 6 & 98 \\
\hline Total Analysis Volume [veh/h] & 26 & 1331 & 88 & 248 & 1612 & 13 & 20 & 11 & 13 & 169 & 23 & 393 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 59 & 0 & 14 & 62 & 0 & 11 & 30 & 0 & 17 & 36 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 56 & 56 & 10 & 62 & 62 & 3 & 25 & 25 & 13 & 35 & 35 \\
\hline g / C, Green / Cycle & 0.03 & 0.47 & 0.47 & 0.08 & 0.52 & 0.52 & 0.03 & 0.21 & 0.21 & 0.11 & 0.29 & 0.29 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.42 & 0.06 & 0.08 & 0.51 & 0.01 & 0.01 & 0.01 & 0.01 & 0.11 & 0.01 & 0.28 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 54 & 1491 & 666 & 258 & 1649 & 736 & 45 & 348 & 296 & 173 & 482 & 410 \\
\hline d1, Uniform Delay [s] & 56.94 & 29.22 & 18.16 & 54.80 & 28.32 & 14.15 & 57.36 & 37.90 & 38.00 & 53.35 & 30.86 & 42.03 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.38 & 0.11 & 0.41 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.49 & 8.53 & 0.41 & 17.97 & 17.42 & 0.04 & 6.59 & 0.04 & 0.06 & 53.99 & 0.04 & 30.96 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.48 & 0.89 & 0.13 & 0.96 & 0.98 & 0.02 & 0.44 & 0.03 & 0.04 & 0.98 & 0.05 & 0.96 \\
\hline d, Delay for Lane Group [s/veh] & 63.43 & 37.75 & 18.57 & 72.77 & 45.74 & 14.19 & 63.94 & 37.94 & 38.06 & 107.34 & 30.90 & 72.99 \\
\hline Lane Group LOS & E & D & B & E & D & B & E & D & D & F & C & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.84 & 17.48 & 1.37 & 4.22 & 23.72 & 0.17 & 0.69 & 0.27 & 0.32 & 7.67 & 0.49 & 14.83 \\
\hline 50th-Percentile Queue Length [ft] & 21.06 & 436.97 & 34.18 & 105.53 & 592.92 & 4.20 & 17.13 & 6.66 & 7.91 & 191.67 & 12.28 & 370.80 \\
\hline 95th-Percentile Queue Length [veh] & 1.52 & 24.34 & 2.46 & 7.59 & 31.70 & 0.30 & 1.23 & 0.48 & 0.57 & 12.21 & 0.88 & 21.15 \\
\hline 95th-Percentile Queue Length [ft] & 37.91 & 608.38 & 61.52 & 189.77 & 792.59 & 7.56 & 30.83 & 11.98 & 14.23 & 305.19 & 22.11 & 528.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 63.43 & 37.75 & 18.57 & 72.77 & 45.74 & 14.19 & 63.94 & 37.94 & 38.06 & 107.34 & 30.90 & 72.99 \\
\hline Movement LOS & E & D & B & E & D & B & E & D & D & F & C & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{37.04} & \multicolumn{3}{|c|}{49.10} & \multicolumn{3}{|c|}{49.80} & \multicolumn{3}{|c|}{81.26} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{49.46} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.934} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
21.0

Level Of Service:
Volume to Capacity (v/c):

C
0.825

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 391 & 0 & 0 & 244 & 45 & 80 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 90 & 1078 & 4 & 6 & 1532 & 139 & 139 & 4 & 126 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 26 & 307 & 1 & 2 & 436 & 40 & 40 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 103 & 1228 & 5 & 7 & 1745 & 158 & 158 & 5 & 144 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 14 & 22 & 0 & 11 & 19 & 0 & 68 & 76 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 9 & 86 & 86 & 1 & 78 & 78 & 14 & 16 & 16 & 1 & 2 \\
\hline g / C, Green / Cycle & 0.08 & 0.72 & 0.72 & 0.01 & 0.65 & 0.65 & 0.12 & 0.13 & 0.13 & 0.01 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.38 & 0.00 & 0.00 & 0.55 & 0.11 & 0.10 & 0.00 & 0.10 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 \\
\hline c, Capacity [veh/h] & 125 & 2292 & 1023 & 20 & 2083 & 930 & 186 & 218 & 185 & 10 & 33 \\
\hline d1, Uniform Delay [s] & 54.53 & 7.76 & 4.79 & 58.77 & 15.98 & 8.15 & 52.01 & 45.56 & 50.53 & 59.40 & 57.85 \\
\hline k, delay calibration & 0.22 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 23.52 & 0.90 & 0.01 & 9.93 & 4.22 & 0.40 & 10.33 & 0.04 & 6.85 & 17.26 & 2.09 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.83 & 0.54 & 0.00 & 0.35 & 0.84 & 0.17 & 0.85 & 0.02 & 0.78 & 0.31 & 0.15 & 0.25 \\
\hline d, Delay for Lane Group [s/veh] & 78.06 & 8.66 & 4.80 & 68.70 & 20.19 & 8.54 & 62.34 & 45.60 & 57.38 & 76.67 & 59.93 & 62.49 \\
\hline Lane Group LOS & E & A & A & E & C & A & E & D & E & E & E & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 3.76 & 5.64 & 0.03 & 0.26 & 15.74 & 1.44 & 5.19 & 0.13 & 4.54 & 0.14 & 0.17 & 0.25 \\
\hline 50th-Percentile Queue Length [ft] & 93.90 & 140.93 & 0.73 & 6.47 & 393.51 & 36.07 & 129.84 & 3.34 & 113.43 & 3.43 & 4.22 & 6.13 \\
\hline 95th-Percentile Queue Length [veh] & 6.76 & 9.53 & 0.05 & 0.47 & 22.25 & 2.60 & 8.93 & 0.24 & 8.03 & 0.25 & 0.30 & 0.44 \\
\hline 95th-Percentile Queue Length [ft] & 169.02 & 238.28 & 1.32 & 11.65 & 556.17 & 64.93 & 223.27 & 6.01 & 200.76 & 6.17 & 7.59 & 11.03 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.06 & 8.66 & 4.80 & 68.70 & 20.19 & 8.54 & 62.34 & 45.60 & 57.38 & 76.67 & 59.93 & 62.49 \\
\hline Movement LOS & E & A & A & E & C & A & E & D & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.99} & \multicolumn{3}{|c|}{19.41} & \multicolumn{3}{|c|}{59.74} & \multicolumn{3}{|c|}{64.48} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{21.04} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.825} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
218.7

F
1.617

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 59 & 181 & 0 & 69 & 113 & 63 & 101 & 3 & 22 & 0 & 3 & 110 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 432 & 861 & 99 & 91 & 1439 & 153 & 170 & 126 & 578 & 217 & 245 & 128 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 120 & 239 & 27 & 25 & 399 & 42 & 47 & 35 & 160 & 60 & 68 & 36 \\
\hline Total Analysis Volume [veh/h] & 479 & 956 & 110 & 101 & 1597 & 170 & 189 & 140 & 642 & 241 & 272 & 142 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 49 & 0 & 18 & 41 & 0 & 30 & 38 & 38 & 15 & 23 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 50 & 50 & 9 & 37 & 37 & 16 & 34 & 34 & 11 & 29 \\
\hline g / C, Green / Cycle & 0.18 & 0.42 & 0.42 & 0.08 & 0.31 & 0.31 & 0.13 & 0.28 & 0.28 & 0.09 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.32 & 0.33 & 0.06 & 0.50 & 0.12 & 0.12 & 0.08 & 0.45 & 0.15 & 0.26 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1617 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1581 \\
\hline c, Capacity [veh/h] & 293 & 698 & 673 & 123 & 989 & 441 & 216 & 472 & 402 & 147 & 377 \\
\hline d1, Uniform Delay [s] & 49.00 & 30.15 & 30.33 & 54.58 & 41.42 & 32.46 & 50.92 & 33.78 & 43.10 & 54.50 & 45.69 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 301.24 & 8.14 & 8.83 & 12.65 & 281.56 & 2.53 & 11.23 & 0.35 & 281.03 & 318.37 & 75.38 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.64 & 0.77 & 0.78 & 0.82 & 1.62 & 0.39 & 0.88 & 0.30 & 1.60 & 1.64 & 1.10 \\
\hline d, Delay for Lane Group [s/veh] & 350.24 & 38.29 & 39.16 & 67.24 & 322.98 & 35.00 & 62.15 & 34.12 & 324.13 & 372.87 & 121.08 \\
\hline Lane Group LOS & F & D & D & E & F & C & E & C & F & F & F \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 32.82 & 13.87 & 13.73 & 3.32 & 52.28 & 3.98 & 6.24 & 3.26 & 43.10 & 17.39 & 19.02 \\
\hline 50th-Percentile Queue Length [ft] & 820.45 & 346.77 & 343.16 & 82.91 & 1306.98 & 99.50 & 155.89 & 81.47 & 1077.52 & 434.63 & 475.62 \\
\hline 95th-Percentile Queue Length [veh] & 51.33 & 19.98 & 19.80 & 5.97 & 81.11 & 7.16 & 10.33 & 5.87 & 67.26 & 28.09 & 27.60 \\
\hline 95th-Percentile Queue Length [ft] & 1283.27 & 499.46 & 495.06 & 149.23 & 2027.71 & 179.10 & 258.28 & 146.64 & 1681.62 & 702.26 & 690.12 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 350.24 & 38.67 & 39.16 & 67.24 & 322.98 & 35.00 & 62.15 & 34.12 & 324.13 & 372.87 & 121.08 & 121.08 \\
\hline Movement LOS & F & D & D & E & F & C & E & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{135.30} & \multicolumn{3}{|c|}{282.94} & \multicolumn{3}{|c|}{231.32} & \multicolumn{3}{|c|}{213.72} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{218.73} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.617} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 47.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.993
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 128 & 0 & 74 & 61 & 0 & 112 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1043 & 225 & 397 & 1825 & 389 & 365 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 280 & 60 & 107 & 491 & 105 & 98 \\
\hline Total Analysis Volume [veh/h] & 1122 & 242 & 427 & 1962 & 418 & 392 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 47 & 0 & 36 & 83 & 37 & 37 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 43 & 43 & 32 & 79 & 33 & 33 \\
\hline g / C, Green / Cycle & 0.36 & 0.36 & 0.27 & 0.66 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.35 & 0.17 & 0.27 & 0.61 & 0.13 & 0.28 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1143 & 510 & 426 & 2101 & 853 & 392 \\
\hline d1, Uniform Delay [s] & 38.09 & 29.75 & 43.97 & 18.17 & 36.43 & 43.47 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.46 & 0.50 & 0.11 & 0.46 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 22.49 & 3.14 & 42.30 & 9.22 & 0.44 & 43.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.98 & 0.47 & 1.00 & 0.93 & 0.49 & 1.00 \\
\hline d, Delay for Lane Group [s/veh] & 60.57 & 32.89 & 86.27 & 27.39 & 36.87 & 86.91 \\
\hline Lane Group LOS & E & C & F & C & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 18.59 & 5.51 & 16.86 & 21.44 & 5.19 & 16.23 \\
\hline 50th-Percentile Queue Length [ft] & 464.81 & 137.66 & 421.50 & 536.07 & 129.78 & 405.72 \\
\hline 95th-Percentile Queue Length [veh] & 25.66 & 9.35 & 23.63 & 29.04 & 8.93 & 22.84 \\
\hline 95th-Percentile Queue Length [ft] & 641.59 & 233.87 & 590.85 & 725.92 & 223.19 & 570.98 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 60.57 & 32.89 & 86.27 & 27.39 & 36.87 & 86.91 \\
\hline Movement LOS & E & C & F & C & D & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{55.66} & \multicolumn{2}{|c|}{37.92} & \multicolumn{2}{|c|}{61.08} \\
\hline Approach LOS & \multicolumn{2}{|c|}{E} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{47.33} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.993} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
357.4

F
1.250

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\xi
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 521 & 47 & 0 & 638 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 82 & 525 & 50 & 92 & 641 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 28 & 179 & 17 & 31 & 218 \\
\hline Total Analysis Volume [veh/h] & 84 & 112 & 715 & 68 & 125 & 873 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 1.25 & 0.27 & 0.01 & 0.00 & 0.15 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 357.38 & 312.56 & 0.00 & 0.00 & 10.07 & 0.00 \\
\hline Movement LOS & F & F & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 13.75 & 13.75 & 0.00 & 0.00 & 0.53 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 343.66 & 343.66 & 0.00 & 0.00 & 13.13 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{331.77} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.26} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{33.53} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 31.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.325
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\hat{F}
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 46 & 9 & 24 & 81 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 243 & 23 & 122 & 225 & 58 & 151 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 82 & 8 & 41 & 76 & 20 & 51 \\
\hline Total Analysis Volume [veh/h] & 328 & 31 & 165 & 304 & 78 & 204 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Prority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.14 & 0.00 & 0.33 & 0.29 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.48 & 0.00 & 31.90 & 22.03 \\
\hline Movement LOS & A & A & A & A & D & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.48 & 0.00 & 4.08 & 4.08 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 11.92 & 0.00 & 101.90 & 101.90 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.98} & \multicolumn{2}{|c|}{24.76} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.55} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
\leftrightarrows \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 214 & 135 & 35 & 55 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 333 & 288 & 135 & 173 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 124 & 107 & 50 & 64 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 496 & 429 & 201 & 258 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{l} 
Intersection Settings \\
Lanes \\
\hline
\end{tabular}

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 1.13 & 3.21 & 3.21 & 5.19 & 4.61 & 4.17 & 1.29 \\
\hline 95th-Percentile Queue Length [ft] & 28.21 & 80.31 & 80.31 & 129.82 & 115.13 & 104.18 & 32.28 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{18.73} & \multicolumn{2}{|c|}{24.77} & \multicolumn{2}{|c|}{21.01} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{21.60} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 28.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 104 & 0 & 0 & 64 & 34 & 53 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 120 & 277 & 0 & 1 & 318 & 100 & 99 & 3 & 116 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 83 & 0 & 0 & 96 & 30 & 30 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 144 & 333 & 0 & 1 & 382 & 120 & 119 & 4 & 139 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 8.68 & 9.21 & 1.04 & 0.02 & 1.02 & 0.11 \\
\hline 95th-Percentile Queue Length [ft] & 217.03 & 230.29 & 25.94 & 0.62 & 25.56 & 2.73 \\
\hline Approach Delay [s/veh] & 33.15 & 33.92 & & 12.44 & & 11.76 \\
\hline Approach LOS & D & D & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{28.88} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\E+A+P+C PM_new.pdf

Scenario 8: \(E+A+P+C\) PM 12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Thru & 1.671 & 221.5 & F \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 1.585 & 236.2 & F \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Right & 1.357 & 143.1 & F \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & NB Left & 0.968 & 43.0 & D \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.598 & 261.2 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.537 & 176.8 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.229 & 86.7 & F \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.195 & 25.4 & D \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & SB Thru & & 68.5 & F \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 85.1 & F \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
221.5
F
1.671

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 526 & 88 & 3 & 0 & 95 & 12 & 20 & 98 & 828 & 2 & 62 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 530 & 1274 & 6 & 2 & 941 & 13 & 22 & 100 & 829 & 5 & 62 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 355 & 2 & 1 & 263 & 4 & 6 & 28 & 231 & 1 & 17 & 0 \\
\hline Total Analysis Volume [veh/h] & 592 & 1422 & 7 & 2 & 1050 & 15 & 25 & 112 & 925 & 6 & 69 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 58 & 0 & 11 & 43 & 0 & 0 & 51 & 0 & 0 & 51 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 61 & 0 & 39 & 39 & 47 & 47 & 47 & 47 \\
\hline g / C, Green / Cycle & 0.18 & 0.50 & 0.00 & 0.33 & 0.33 & 0.39 & 0.39 & 0.39 & 0.39 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.19 & 0.85 & 0.00 & 0.33 & 0.01 & 0.13 & 0.65 & 0.05 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 1081 & 1425 & 1477 & 1425 \\
\hline c, Capacity [veh/h] & 569 & 846 & 7 & 1039 & 464 & 458 & 557 & 610 & 557 \\
\hline d1, Uniform Delay [s] & 48.97 & 29.70 & 59.55 & 40.46 & 27.58 & 25.27 & 36.54 & 23.40 & 22.27 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 29.15 & 315.59 & 22.54 & 30.51 & 0.13 & 0.36 & 305.17 & 0.09 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.04 & 1.69 & 0.30 & 1.01 & 0.03 & 0.30 & 1.66 & 0.12 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 78.12 & 345.29 & 82.09 & 70.96 & 27.70 & 25.63 & 341.71 & 23.49 & 22.27 \\
\hline Lane Group LOS & F & F & F & F & C & C & F & C & C \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 10.23 & 94.67 & 0.10 & 18.28 & 0.29 & 2.64 & 63.14 & 1.38 & 0.02 \\
\hline 50th-Percentile Queue Length [ft] & 255.67 & 2366.82 & 2.50 & 456.95 & 7.24 & 66.06 & 1578.39 & 34.54 & 0.44 \\
\hline 95th-Percentile Queue Length [veh] & 15.78 & 148.83 & 0.18 & 25.47 & 0.52 & 4.76 & 99.11 & 2.49 & 0.03 \\
\hline 95th-Percentile Queue Length [ft] & 394.44 & 3720.75 & 4.49 & 636.63 & 13.04 & 118.91 & 2477.83 & 62.17 & 0.79 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.12 & 345.29 & 345.29 & 82.09 & 70.96 & 27.70 & 25.63 & 25.63 & 341.71 & 23.49 & 23.49 & 22.27 \\
\hline Movement LOS & F & F & F & F & F & C & C & C & F & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{267.03} & \multicolumn{3}{|c|}{70.38} & \multicolumn{3}{|c|}{300.93} & \multicolumn{3}{|c|}{23.47} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{221.52} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.671} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
236.2

F
1.585

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{7直} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 519 & 447 & 7 & 142 & 706 & 77 & 78 & 110 & 511 & 6 & 110 & 92 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 535 & 1608 & 146 & 177 & 1515 & 93 & 93 & 115 & 529 & 100 & 117 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 444 & 40 & 49 & 419 & 26 & 26 & 32 & 146 & 28 & 32 & 32 \\
\hline Total Analysis Volume [veh/h] & 591 & 1777 & 161 & 196 & 1674 & 103 & 103 & 127 & 585 & 110 & 129 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 31 & 45 & 0 & 29 & 43 & 0 & 18 & 35 & 0 & 11 & 28 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 49 & 49 & 17 & 39 & 39 & 9 & 31 & 31 & 7 & 29 & 29 \\
\hline g/ C, Green / Cycle & 0.22 & 0.41 & 0.41 & 0.14 & 0.33 & 0.33 & 0.08 & 0.26 & 0.26 & 0.06 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.37 & 0.56 & 0.11 & 0.12 & 0.52 & 0.07 & 0.06 & 0.08 & 0.41 & 0.07 & 0.08 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 359 & 1317 & 588 & 222 & 1043 & 466 & 125 & 430 & 366 & 93 & 397 & 337 \\
\hline d1, Uniform Delay [s] & 46.50 & 35.25 & 23.34 & 50.69 & 40.40 & 29.32 & 54.50 & 35.88 & 44.60 & 56.50 & 37.86 & 38.43 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.14 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.44 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 302.57 & 162.30 & 1.15 & 13.87 & 276.91 & 1.10 & 12.65 & 0.38 & 282.45 & 143.44 & 0.47 & 0.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.65 & 1.35 & 0.27 & 0.88 & 1.61 & 0.22 & 0.82 & 0.30 & 1.60 & 1.18 & 0.32 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 349.07 & 197.54 & 24.49 & 64.57 & 317.31 & 30.42 & 67.15 & 36.25 & 327.06 & 199.94 & 38.33 & 39.14 \\
\hline Lane Group LOS & F & F & C & E & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 40.09 & 46.65 & 2.93 & 6.27 & 54.04 & 2.14 & 3.50 & 3.05 & 39.45 & 6.47 & 3.11 & 3.17 \\
\hline 50th-Percentile Queue Length [ft] & 1002.32 & 1166.18 & 73.35 & 156.69 & 1350.95 & 53.49 & 87.61 & 76.25 & 986.18 & 161.70 & 77.63 & 79.14 \\
\hline 95th-Percentile Queue Length [veh] & 62.48 & 69.67 & 5.28 & 10.37 & 83.80 & 3.85 & 6.31 & 5.49 & 61.65 & 11.16 & 5.59 & 5.70 \\
\hline 95th-Percentile Queue Length [ft] & 1561.95 & 1741.76 & 132.03 & 259.33 & 2094.93 & 96.27 & 157.70 & 137.25 & 1541.18 & 278.92 & 139.74 & 142.45 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 349.07 & 197.54 & 24.49 & 64.57 & 317.31 & 30.42 & 67.15 & 36.25 & 327.06 & 199.94 & 38.33 & 39.14 \\
\hline Movement LOS & F & F & C & E & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{221.94} & \multicolumn{3}{|c|}{277.22} & \multicolumn{3}{|c|}{248.89} & \multicolumn{3}{|c|}{86.92} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{236.25} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.585} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay ( \(\mathrm{sec} / \mathrm{veh}\) ):
Level Of Service:
Volume to Capacity (v/c):
143.1

F
1.357

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| F
\]} & \multicolumn{3}{|c|}{\[
71
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 630 & 10 & 430 & 793 & 0 & 0 & 0 & 0 & 9 & 0 & 343 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1885 & 188 & 516 & 1726 & 8 & 6 & 15 & 25 & 131 & 27 & 403 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 524 & 52 & 143 & 479 & 2 & 2 & 4 & 7 & 36 & 8 & 112 \\
\hline Total Analysis Volume [veh/h] & 27 & 2094 & 209 & 573 & 1918 & 9 & 7 & 17 & 28 & 146 & 30 & 448 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 56 & 0 & 19 & 64 & 0 & 11 & 21 & 0 & 14 & 24 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 52 & 52 & 15 & 63 & 63 & 1 & 17 & 17 & 10 & 26 & 26 \\
\hline g / C, Green / Cycle & 0.04 & 0.47 & 0.47 & 0.14 & 0.57 & 0.57 & 0.01 & 0.15 & 0.15 & 0.09 & 0.23 & 0.23 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.66 & 0.15 & 0.18 & 0.60 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.31 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 57 & 1514 & 676 & 423 & 1835 & 819 & 20 & 257 & 218 & 145 & 388 & 330 \\
\hline d1, Uniform Delay [s] & 52.01 & 28.92 & 17.82 & 47.50 & 23.39 & 10.01 & 53.89 & 39.86 & 40.25 & 50.00 & 33.06 & 42.26 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.18 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.37 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.93 & 176.75 & 1.19 & 165.52 & 34.02 & 0.02 & 10.53 & 0.11 & 0.26 & 65.93 & 0.08 & 179.27 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.47 & 1.38 & 0.31 & 1.35 & 1.05 & 0.01 & 0.36 & 0.07 & 0.13 & 1.01 & 0.08 & 1.36 \\
\hline d, Delay for Lane Group [s/veh] & 57.95 & 205.67 & 19.01 & 213.02 & 57.41 & 10.03 & 64.42 & 39.97 & 40.51 & 115.94 & 33.15 & 221.53 \\
\hline Lane Group LOS & E & F & B & F & F & B & E & D & D & F & C & F \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.79 & 54.52 & 3.18 & 15.20 & 28.07 & 0.09 & 0.25 & 0.41 & 0.68 & 6.64 & 0.64 & 25.28 \\
\hline 50th-Percentile Queue Length [ft] & 19.83 & 1363.12 & 79.47 & 379.96 & 701.74 & 2.18 & 6.28 & 10.15 & 16.96 & 165.90 & 15.94 & 631.93 \\
\hline 95th-Percentile Queue Length [veh] & 1.43 & 82.05 & 5.72 & 24.30 & 38.13 & 0.16 & 0.45 & 0.73 & 1.22 & 10.88 & 1.15 & 38.91 \\
\hline 95th-Percentile Queue Length [ft] & 35.69 & 2051.27 & 143.04 & 607.42 & 953.27 & 3.92 & 11.30 & 18.27 & 30.53 & 272.07 & 28.68 & 972.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 57.95 & 205.67 & 19.01 & 213.02 & 57.41 & 10.03 & 64.42 & 39.97 & 40.51 & 115.94 & 33.15 & 221.53 \\
\hline Movement LOS & E & F & B & F & F & B & E & D & D & F & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{187.22} & \multicolumn{3}{|c|}{92.91} & \multicolumn{3}{|c|}{43.55} & \multicolumn{3}{|c|}{187.77} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{143.10} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.357} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
43.0

Level Of Service:
Volume to Capacity (v/c):

D
0.968

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{T|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 4 & 507 & 0 & 0 & 635 & 167 & 133 & 0 & 4 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 158 & 1839 & 5 & 2 & 1530 & 214 & 225 & 1 & 89 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 45 & 524 & 1 & 1 & 436 & 61 & 64 & 0 & 25 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 180 & 2095 & 6 & 2 & 1743 & 244 & 256 & 1 & 101 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 17 & 58 & 0 & 11 & 52 & 0 & 22 & 30 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 13 & 73 & 73 & 0 & 61 & 61 & 18 & 19 & 19 & 1 & 2 \\
\hline g/C, Green / Cycle & 0.12 & 0.67 & 0.67 & 0.00 & 0.55 & 0.55 & 0.16 & 0.17 & 0.17 & 0.01 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.66 & 0.00 & 0.00 & 0.55 & 0.17 & 0.16 & 0.00 & 0.07 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 \\
\hline c, Capacity [veh/h] & 189 & 2119 & 946 & 8 & 1756 & 784 & 262 & 292 & 248 & 19 & 37 \\
\hline d1, Uniform Delay [s] & 48.19 & 18.08 & 6.24 & 54.59 & 24.54 & 13.44 & 45.83 & 37.57 & 40.41 & 53.97 & 52.73 \\
\hline k, delay calibration & 0.36 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.41 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 44.32 & 17.01 & 0.01 & 16.72 & 19.78 & 1.03 & 45.04 & 0.00 & 1.07 & 9.48 & 0.61 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.95 & 0.99 & 0.01 & 0.26 & 0.99 & 0.31 & 0.98 & 0.00 & 0.41 & 0.32 & 0.05 & 0.35 \\
\hline d, Delay for Lane Group [s/veh] & 92.51 & 35.10 & 6.25 & 71.30 & 44.32 & 14.48 & 90.87 & 37.58 & 41.49 & 63.45 & 53.33 & 59.68 \\
\hline Lane Group LOS & F & D & A & E & D & B & F & D & D & E & D & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 6.98 & 23.95 & 0.04 & 0.09 & 23.46 & 3.08 & 10.19 & 0.02 & 2.51 & 0.21 & 0.06 & 0.36 \\
\hline 50th-Percentile Queue Length [ft] & 174.61 & 598.87 & 1.02 & 2.22 & 586.42 & 77.06 & 254.72 & 0.57 & 62.63 & 5.35 & 1.51 & 8.93 \\
\hline 95th-Percentile Queue Length [veh] & 11.32 & 31.98 & 0.07 & 0.16 & 31.40 & 5.55 & 15.42 & 0.04 & 4.51 & 0.39 & 0.11 & 0.64 \\
\hline 95th-Percentile Queue Length [ft] & 282.96 & 799.54 & 1.83 & 4.00 & 784.99 & 138.71 & 385.59 & 1.02 & 112.74 & 9.63 & 2.71 & 16.07 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 92.51 & 35.10 & 6.25 & 71.30 & 44.32 & 14.48 & 90.87 & 37.58 & 41.49 & 63.45 & 53.33 & 59.68 \\
\hline Movement LOS & F & D & A & E & D & B & F & D & D & E & D & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{39.55} & \multicolumn{3}{|c|}{40.69} & \multicolumn{3}{|c|}{76.79} & \multicolumn{3}{|c|}{60.20} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{42.99} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.968} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
261.2

F
1.598

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 45 & 216 & 0 & 173 & 275 & 191 & 158 & 8 & 72 & 0 & 8 & 137 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 499 & 1618 & 208 & 202 & 1140 & 254 & 235 & 189 & 634 & 176 & 146 & 158 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 138 & 449 & 58 & 56 & 316 & 70 & 65 & 52 & 176 & 49 & 41 & 44 \\
\hline Total Analysis Volume [veh/h] & 554 & 1796 & 231 & 224 & 1265 & 282 & 261 & 210 & 704 & 195 & 162 & 175 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 30 & 51 & 0 & 15 & 36 & 0 & 23 & 41 & 41 & 13 & 31 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 26 & 47 & 47 & 11 & 32 & 32 & 19 & 37 & 37 & 9 & 27 \\
\hline g / C, Green / Cycle & 0.22 & 0.39 & 0.39 & 0.09 & 0.27 & 0.27 & 0.16 & 0.31 & 0.31 & 0.08 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.60 & 0.63 & 0.14 & 0.40 & 0.20 & 0.16 & 0.13 & 0.49 & 0.12 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1612 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1536 \\
\hline c, Capacity [veh/h] & 346 & 659 & 633 & 147 & 856 & 382 & 253 & 514 & 437 & 120 & 343 \\
\hline d1, Uniform Delay [s] & 47.01 & 36.43 & 36.43 & 54.50 & 43.92 & 40.07 & 50.50 & 33.00 & 41.62 & 55.50 & 46.38 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.45 & 0.11 & 0.50 & 0.50 & 0.43 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 283.83 & 249.88 & 277.53 & 267.99 & 221.19 & 12.02 & 61.98 & 0.52 & 285.86 & 314.39 & 40.88 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.60 & 1.54 & 1.60 & 1.53 & 1.48 & 0.74 & 1.03 & 0.41 & 1.61 & 1.62 & 0.98 \\
\hline d, Delay for Lane Group [s/veh] & 330.84 & 286.31 & 313.96 & 322.49 & 265.10 & 52.09 & 112.49 & 33.52 & 327.48 & 369.89 & 87.26 \\
\hline Lane Group LOS & F & F & F & F & F & D & F & C & F & F & F \\
\hline Critical Lane Group & No & No & Yes & Yes & No & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 37.03 & 63.34 & 65.76 & 15.17 & 38.24 & 8.45 & 11.93 & 4.93 & 47.40 & 14.14 & 13.82 \\
\hline 50th-Percentile Queue Length [ft] & 925.82 & 1583.62 & 1643.99 & 379.36 & 955.88 & 211.20 & 298.13 & 123.15 & 1185.09 & 353.44 & 345.45 \\
\hline 95th-Percentile Queue Length [veh] & 57.58 & 97.12 & 101.87 & 24.60 & 58.66 & 13.21 & 17.86 & 8.57 & 74.01 & 23.20 & 19.91 \\
\hline 95th-Percentile Queue Length [ft] & 1439.53 & 2428.04 & 2546.68 & 614.90 & 1466.53 & 330.37 & 446.41 & 214.15 & 1850.32 & 579.92 & 497.85 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 330.84 & 298.36 & 313.96 & 322.49 & 265.10 & 52.09 & 112.49 & 33.52 & 327.48 & 369.89 & 87.26 & 87.26 \\
\hline Movement LOS & F & F & F & F & F & D & F & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{306.73} & \multicolumn{3}{|c|}{238.44} & \multicolumn{3}{|c|}{227.19} & \multicolumn{3}{|c|}{190.86} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{261.17} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.598} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 176.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.537
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 118 & 0 & 178 & 169 & 0 & 143 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1726 & 408 & 505 & 1434 & 316 & 612 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 464 & 110 & 136 & 385 & 85 & 165 \\
\hline Total Analysis Volume [veh/h] & 1856 & 439 & 543 & 1542 & 340 & 658 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 49 & 0 & 31 & 80 & 40 & 40 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 45 & 45 & 27 & 76 & 36 & 36 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.23 & 0.63 & 0.30 & 0.30 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.58 & 0.31 & 0.34 & 0.48 & 0.11 & 0.46 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1196 & 534 & 360 & 2022 & 930 & 427 \\
\hline d1, Uniform Delay [s] & 37.49 & 33.88 & 46.46 & 15.59 & 33.01 & 41.98 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 252.32 & 13.34 & 243.46 & 2.79 & 0.24 & 254.26 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.55 & 0.82 & 1.51 & 0.76 & 0.37 & 1.54 \\
\hline d, Delay for Lane Group [s/veh] & 289.81 & 47.22 & 289.91 & 18.38 & 33.25 & 296.24 \\
\hline Lane Group LOS & F & D & F & B & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 58.01 & 12.64 & 34.44 & 13.01 & 3.93 & 42.67 \\
\hline 50th-Percentile Queue Length [ft] & 1450.14 & 316.12 & 860.96 & 325.25 & 98.36 & 1066.69 \\
\hline 95th-Percentile Queue Length [veh] & 89.44 & 18.48 & 53.16 & 18.93 & 7.08 & 66.17 \\
\hline 95th-Percentile Queue Length [ft] & 2235.94 & 461.91 & 1328.94 & 473.13 & 177.05 & 1654.24 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 289.81 & 47.22 & 289.91 & 18.38 & 33.25 & 296.24 \\
\hline Movement LOS & F & D & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{243.41} & \multicolumn{2}{|c|}{89.10} & \multicolumn{2}{|c|}{206.64} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{176.76} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.537} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes
Delay (sec / veh):
86.7
Level Of Service:
F
Volume to Capacity (v/c):
0.229

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 699 & 13 & 0 & 706 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 85 & 703 & 14 & 28 & 711 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 29 & 239 & 5 & 10 & 242 \\
\hline Total Analysis Volume [veh/h] & 14 & 116 & 958 & 19 & 38 & 969 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.23 & 0.38 & 0.01 & 0.00 & 0.05 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 86.71 & 39.49 & 0.00 & 0.00 & 10.39 & 0.00 \\
\hline Movement LOS & F & E & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 3.47 & 3.47 & 0.00 & 0.00 & 0.17 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 86.71 & 86.71 & 0.00 & 0.00 & 4.26 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{44.57} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.39} \\
\hline Approach LOS & \multicolumn{2}{|c|}{E} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.93} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 25.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.195
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 171 & 1 & 4 & 137 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 334 & 35 & 46 & 251 & 40 & 132 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 113 & 12 & 16 & 85 & 14 & 45 \\
\hline Total Analysis Volume [veh/h] & 451 & 47 & 62 & 339 & 54 & 178 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Prority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.06 & 0.00 & 0.20 & 0.30 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.59 & 0.00 & 25.40 & 18.48 \\
\hline Movement LOS & A & A & A & A & D & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.18 & 0.00 & 2.71 & 2.71 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 4.62 & 0.00 & 67.82 & 67.82 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.33} & \multicolumn{2}{|c|}{20.09} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.59} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
\leftrightarrows \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 274 & 343 & 86 & 68 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 463 & 476 & 172 & 174 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 173 & 177 & 64 & 65 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 690 & 709 & 256 & 259 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{l} 
Intersection Settings \\
Lanes \\
\hline
\end{tabular}

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.81 & 7.59 & 7.59 & 17.90 & 16.39 & 5.50 & 1.33 \\
\hline 95th-Percentile Queue Length [ft] & 20.29 & 189.87 & 189.87 & 447.56 & 409.72 & 137.43 & 33.16 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{37.22} & \multicolumn{2}{|c|}{109.58} & \multicolumn{2}{|c|}{28.96} \\
\hline Approach LOS & \multicolumn{3}{|c|}{E} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{68.55} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
85.1

F

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\ddagger
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 137 & 0 & 0 & 172 & 89 & 72 & 0 & 2 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 141 & 39 & 7 & 3 & 356 & 147 & 152 & 4 & 103 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 118 & 2 & 1 & 107 & 44 & 46 & 1 & 31 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 169 & 472 & 8 & 4 & 428 & 177 & 183 & 5 & 124 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 23.02 & 17.88 & 2.01 & 0.03 & 0.93 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 575.50 & 446.97 & 50.16 & 0.81 & 23.27 & 2.05 \\
\hline Approach Delay [s/veh] & 122.07 & 83.11 & & 14.59 & & 11.97 \\
\hline Approach LOS & F & F & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{85.09} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Vistro File: Q:\... \({ }^{\text {ttvcs1.vistro }}\)
Report File: Q:\...lintersections.pdf

Scenario 7: \(E+A+P+C A M\)
11/11/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Left & 0.850 & 21.4 & C \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & WB Left & 1.329 & 132.5 & F \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Left & 0.934 & 49.5 & D \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Thru & 0.971 & 40.3 & D \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.617 & 218.7 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 0.993 & 47.3 & D \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 1.250 & 357.4 & F \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.015 & 11.5 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & SB Thru & & 21.6 & C \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & SB Thru & & 28.9 & D \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
21.4

HCM 2010
15 minutes
Level Of Service:
Volume to Capacity (v/c):
C
0.850

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 323 & 75 & 12 & 0 & 79 & 8 & 2 & 11 & 98 & 15 & 38 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & O & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 324 & 779 & 15 & 0 & 1179 & 11 & 3 & 12 & 102 & 23 & 38 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 90 & 217 & 4 & 0 & 329 & 3 & 1 & 3 & 28 & 6 & 11 & 1 \\
\hline Total Analysis Volume [veh/h] & 362 & 869 & 17 & 0 & 1316 & 12 & 3 & 13 & 114 & 26 & 42 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 80 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 24 & 47 & 0 & 14 & 37 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 12 & 53 & 0 & 41 & 41 & 15 & 15 & 15 & 15 \\
\hline g / C, Green / Cycle & 0.15 & 0.66 & 0.00 & 0.52 & 0.52 & 0.19 & 0.19 & 0.19 & 0.19 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.12 & 0.53 & 0.00 & 0.41 & 0.01 & 0.02 & 0.08 & 0.19 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1671 & 1597 & 3192 & 1425 & 768 & 1425 & 354 & 1425 \\
\hline c, Capacity [veh/h] & 454 & 1109 & 0 & 1652 & 737 & 196 & 265 & 128 & 265 \\
\hline d1, Uniform Delay [s] & 32.99 & 9.62 & 0.00 & 15.85 & 9.39 & 27.16 & 28.81 & 28.48 & 26.56 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.25 & 6.03 & 0.00 & 4.09 & 0.04 & 0.18 & 1.10 & 3.39 & 0.02 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.80 & 0.80 & 0.00 & 0.80 & 0.02 & 0.08 & 0.43 & 0.53 & 0.01 \\
\hline d, Delay for Lane Group [s/veh] & 36.24 & 15.65 & 0.00 & 19.94 & 9.43 & 27.34 & 29.91 & 31.87 & 26.57 \\
\hline Lane Group LOS & D & B & A & B & A & C & C & C & C \\
\hline Critical Lane Group & No & Yes & No & No & No & No & No & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 3.17 & 7.53 & 0.00 & 7.95 & 0.08 & 0.25 & 1.96 & 1.20 & 0.05 \\
\hline 50th-Percentile Queue Length [ft] & 79.35 & 188.26 & 0.00 & 198.71 & 2.10 & 6.37 & 49.08 & 29.92 & 1.17 \\
\hline 95th-Percentile Queue Length [veh] & 5.71 & 12.03 & 0.00 & 12.57 & 0.15 & 0.46 & 3.53 & 2.15 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 142.83 & 300.76 & 0.00 & 314.30 & 3.78 & 11.47 & 88.34 & 53.86 & 2.11 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.24 & 15.65 & 15.65 & 0.00 & 19.94 & 9.43 & 27.34 & 27.34 & 29.91 & 31.87 & 31.87 & 26.57 \\
\hline Movement LOS & D & B & B & A & B & A & C & C & C & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{21.62} & \multicolumn{3}{|c|}{19.84} & \multicolumn{3}{|c|}{29.59} & \multicolumn{3}{|c|}{31.65} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{21.40} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.850} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street

Control Type:
Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
132.5

F
1.329

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 459 & 283 & 2 & 19 & 86 & 87 & 70 & 77 & 374 & 2 & 92 & 57 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 484 & 908 & 170 & 91 & 1081 & 144 & 110 & 92 & 406 & 185 & 104 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 134 & 251 & 47 & 25 & 299 & 40 & 30 & 25 & 112 & 51 & 29 & 32 \\
\hline Total Analysis Volume [veh/h] & 535 & 1003 & 188 & 101 & 1194 & 159 & 122 & 102 & 449 & 204 & 115 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 34 & 53 & 0 & 18 & 37 & 0 & 30 & 33 & 0 & 16 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 30 & 54 & 54 & 9 & 33 & 33 & 11 & 29 & 29 & 12 & 30 & 30 \\
\hline g / C, Green / Cycle & 0.25 & 0.45 & 0.45 & 0.08 & 0.28 & 0.28 & 0.09 & 0.24 & 0.24 & 0.10 & 0.25 & 0.25 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.34 & 0.31 & 0.13 & 0.06 & 0.37 & 0.11 & 0.08 & 0.06 & 0.32 & 0.13 & 0.07 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 399 & 1434 & 640 & 123 & 881 & 393 & 147 & 404 & 343 & 160 & 417 & 355 \\
\hline d1, Uniform Delay [s] & 45.00 & 26.55 & 20.98 & 54.59 & 43.45 & 35.41 & 53.58 & 36.83 & 45.56 & 54.00 & 36.34 & 37.22 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 169.23 & 2.86 & 1.17 & 12.76 & 167.50 & 3.07 & 11.40 & 0.33 & 158.51 & 164.21 & 0.35 & 0.63 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.34 & 0.70 & 0.29 & 0.82 & 1.36 & 0.40 & 0.83 & 0.25 & 1.31 & 1.28 & 0.28 & 0.36 \\
\hline d, Delay for Lane Group [s/veh] & 214.24 & 29.42 & 22.14 & 67.35 & 210.95 & 38.48 & 64.97 & 37.16 & 204.06 & 218.21 & 36.70 & 37.85 \\
\hline Lane Group LOS & F & C & C & E & F & D & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 29.69 & 10.74 & 3.22 & 3.27 & 32.45 & 3.86 & 4.08 & 2.47 & 25.23 & 11.98 & 2.69 & 3.11 \\
\hline 50th-Percentile Queue Length [ft] & 742.15 & 268.38 & 80.44 & 81.75 & 811.36 & 96.42 & 102.05 & 61.76 & 630.71 & 299.42 & 67.26 & 77.63 \\
\hline 95th-Percentile Queue Length [veh] & 44.89 & 16.11 & 5.79 & 5.89 & 49.09 & 6.94 & 7.35 & 4.45 & 38.38 & 19.26 & 4.84 & 5.59 \\
\hline 95th-Percentile Queue Length [ft] & 1122.22 & 402.71 & 144.79 & 147.15 & 1227.29 & 173.55 & 183.69 & 111.17 & 959.48 & 481.59 & 121.07 & 139.73 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 214.24 & 29.42 & 22.14 & 67.35 & 210.95 & 38.48 & 64.97 & 37.16 & 204.06 & 218.21 & 36.70 & 37.85 \\
\hline Movement LOS & F & C & C & E & F & D & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{85.91} & \multicolumn{3}{|c|}{182.11} & \multicolumn{3}{|c|}{153.55} & \multicolumn{3}{|c|}{119.68} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{132.54} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.329} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
49.5

D
0.934

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 469 & 2 & 175 & 287 & 0 & 0 & 0 & 0 & 2 & 0 & 275 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1198 & 79 & 223 & 1451 & 12 & 18 & 10 & 12 & 152 & 21 & 354 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 333 & 22 & 62 & 403 & 3 & 5 & 3 & 3 & 42 & 6 & 98 \\
\hline Total Analysis Volume [veh/h] & 26 & 1331 & 88 & 248 & 1612 & 13 & 20 & 11 & 13 & 169 & 23 & 393 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 59 & 0 & 14 & 62 & 0 & 11 & 30 & 0 & 17 & 36 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 56 & 56 & 10 & 62 & 62 & 3 & 25 & 25 & 13 & 35 & 35 \\
\hline g / C, Green / Cycle & 0.03 & 0.47 & 0.47 & 0.08 & 0.52 & 0.52 & 0.03 & 0.21 & 0.21 & 0.11 & 0.29 & 0.29 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.42 & 0.06 & 0.08 & 0.51 & 0.01 & 0.01 & 0.01 & 0.01 & 0.11 & 0.01 & 0.28 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 54 & 1491 & 666 & 258 & 1649 & 736 & 45 & 348 & 296 & 173 & 482 & 410 \\
\hline d1, Uniform Delay [s] & 56.94 & 29.22 & 18.16 & 54.80 & 28.32 & 14.15 & 57.36 & 37.90 & 38.00 & 53.35 & 30.86 & 42.03 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.38 & 0.11 & 0.41 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.49 & 8.53 & 0.41 & 17.97 & 17.42 & 0.04 & 6.59 & 0.04 & 0.06 & 53.99 & 0.04 & 30.96 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.48 & 0.89 & 0.13 & 0.96 & 0.98 & 0.02 & 0.44 & 0.03 & 0.04 & 0.98 & 0.05 & 0.96 \\
\hline d, Delay for Lane Group [s/veh] & 63.43 & 37.75 & 18.57 & 72.77 & 45.74 & 14.19 & 63.94 & 37.94 & 38.06 & 107.34 & 30.90 & 72.99 \\
\hline Lane Group LOS & E & D & B & E & D & B & E & D & D & F & C & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.84 & 17.48 & 1.37 & 4.22 & 23.72 & 0.17 & 0.69 & 0.27 & 0.32 & 7.67 & 0.49 & 14.83 \\
\hline 50th-Percentile Queue Length [ft] & 21.06 & 436.97 & 34.18 & 105.53 & 592.92 & 4.20 & 17.13 & 6.66 & 7.91 & 191.67 & 12.28 & 370.80 \\
\hline 95th-Percentile Queue Length [veh] & 1.52 & 24.34 & 2.46 & 7.59 & 31.70 & 0.30 & 1.23 & 0.48 & 0.57 & 12.21 & 0.88 & 21.15 \\
\hline 95th-Percentile Queue Length [ft] & 37.91 & 608.38 & 61.52 & 189.77 & 792.59 & 7.56 & 30.83 & 11.98 & 14.23 & 305.19 & 22.11 & 528.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 63.43 & 37.75 & 18.57 & 72.77 & 45.74 & 14.19 & 63.94 & 37.94 & 38.06 & 107.34 & 30.90 & 72.99 \\
\hline Movement LOS & E & D & B & E & D & B & E & D & D & F & C & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{37.04} & \multicolumn{3}{|c|}{49.10} & \multicolumn{3}{|c|}{49.80} & \multicolumn{3}{|c|}{81.26} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{49.46} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.934} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
40.3

D
0.971

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 391 & 0 & 0 & 244 & 45 & 80 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 90 & 1078 & 4 & 6 & 1532 & 139 & 139 & 4 & 126 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 26 & 307 & 1 & 2 & 436 & 40 & 40 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 103 & 1228 & 5 & 7 & 1745 & 158 & 158 & 5 & 144 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 90 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 13 & 48 & 0 & 11 & 46 & 0 & 12 & 20 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 6 & 35 & 35 & 1 & 30 & 30 & 8 & 9 & 9 & 0 & 1 & 1 \\
\hline g / C, Green / Cycle & 0.10 & 0.58 & 0.58 & 0.01 & 0.49 & 0.49 & 0.13 & 0.14 & 0.14 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.38 & 0.00 & 0.00 & 0.55 & 0.11 & 0.10 & 0.00 & 0.10 & 0.00 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 153 & 1836 & 820 & 22 & 1573 & 702 & 202 & 238 & 203 & 10 & 37 & 31 \\
\hline d1, Uniform Delay [s] & 26.59 & 8.92 & 5.51 & 29.74 & 15.43 & 8.80 & 25.77 & 22.46 & 24.91 & 30.11 & 29.20 & 29.26 \\
\hline k, delay calibration & 0.11 & 0.11 & 0.11 & 0.11 & 0.12 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.07 & 0.43 & 0.00 & 8.44 & 51.80 & 0.16 & 6.49 & 0.03 & 4.57 & 15.91 & 1.66 & 3.57 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.67 & 0.67 & 0.01 & 0.32 & 1.11 & 0.22 & 0.78 & 0.02 & 0.71 & 0.30 & 0.14 & 0.22 \\
\hline d, Delay for Lane Group [s/veh] & 31.66 & 9.35 & 5.51 & 38.18 & 67.23 & 8.96 & 32.26 & 22.50 & 29.48 & 46.02 & 30.86 & 32.83 \\
\hline Lane Group LOS & C & A & A & D & F & A & C & C & C & D & C & C \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 1.45 & 3.24 & 0.02 & 0.14 & 18.34 & 0.84 & 2.45 & 0.06 & 2.12 & 0.09 & 0.09 & 0.13 \\
\hline 50th-Percentile Queue Length [ft] & 36.33 & 80.90 & 0.41 & 3.48 & 458.40 & 20.88 & 61.14 & 1.51 & 52.90 & 2.15 & 2.13 & 3.17 \\
\hline 95th-Percentile Queue Length [veh] & 2.62 & 5.82 & 0.03 & 0.25 & 27.28 & 1.50 & 4.40 & 0.11 & 3.81 & 0.15 & 0.15 & 0.23 \\
\hline 95th-Percentile Queue Length [ft] & 65.40 & 145.61 & 0.74 & 6.27 & 682.04 & 37.58 & 110.05 & 2.72 & 95.22 & 3.87 & 3.84 & 5.71 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 31.66 & 9.35 & 5.51 & 38.18 & 67.23 & 8.96 & 32.26 & 22.50 & 29.48 & 46.02 & 30.86 & 32.83 \\
\hline Movement LOS & C & A & A & D & F & A & C & C & C & D & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{11.06} & \multicolumn{3}{|c|}{62.30} & \multicolumn{3}{|c|}{30.80} & \multicolumn{3}{|c|}{34.81} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{C} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{40.29} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.971} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
218.7

F
1.617

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 59 & 181 & 0 & 69 & 113 & 63 & 101 & 3 & 22 & 0 & 3 & 110 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 432 & 861 & 99 & 91 & 1439 & 153 & 170 & 126 & 578 & 217 & 245 & 128 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 120 & 239 & 27 & 25 & 399 & 42 & 47 & 35 & 160 & 60 & 68 & 36 \\
\hline Total Analysis Volume [veh/h] & 479 & 956 & 110 & 101 & 1597 & 170 & 189 & 140 & 642 & 241 & 272 & 142 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 49 & 0 & 18 & 41 & 0 & 30 & 38 & 38 & 15 & 23 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 50 & 50 & 9 & 37 & 37 & 16 & 34 & 34 & 11 & 29 \\
\hline g / C, Green / Cycle & 0.18 & 0.42 & 0.42 & 0.08 & 0.31 & 0.31 & 0.13 & 0.28 & 0.28 & 0.09 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.32 & 0.33 & 0.06 & 0.50 & 0.12 & 0.12 & 0.08 & 0.45 & 0.15 & 0.26 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1617 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1581 \\
\hline c, Capacity [veh/h] & 293 & 698 & 673 & 123 & 989 & 441 & 216 & 472 & 402 & 147 & 377 \\
\hline d1, Uniform Delay [s] & 49.00 & 30.15 & 30.33 & 54.58 & 41.42 & 32.46 & 50.92 & 33.78 & 43.10 & 54.50 & 45.69 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 301.24 & 8.14 & 8.83 & 12.65 & 281.56 & 2.53 & 11.23 & 0.35 & 281.03 & 318.37 & 75.38 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.64 & 0.77 & 0.78 & 0.82 & 1.62 & 0.39 & 0.88 & 0.30 & 1.60 & 1.64 & 1.10 \\
\hline d, Delay for Lane Group [s/veh] & 350.24 & 38.29 & 39.16 & 67.24 & 322.98 & 35.00 & 62.15 & 34.12 & 324.13 & 372.87 & 121.08 \\
\hline Lane Group LOS & F & D & D & E & F & C & E & C & F & F & F \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 32.82 & 13.87 & 13.73 & 3.32 & 52.28 & 3.98 & 6.24 & 3.26 & 43.10 & 17.39 & 19.02 \\
\hline 50th-Percentile Queue Length [ft] & 820.45 & 346.77 & 343.16 & 82.91 & 1306.98 & 99.50 & 155.89 & 81.47 & 1077.52 & 434.63 & 475.62 \\
\hline 95th-Percentile Queue Length [veh] & 51.33 & 19.98 & 19.80 & 5.97 & 81.11 & 7.16 & 10.33 & 5.87 & 67.26 & 28.09 & 27.60 \\
\hline 95th-Percentile Queue Length [ft] & 1283.27 & 499.46 & 495.06 & 149.23 & 2027.71 & 179.10 & 258.28 & 146.64 & 1681.62 & 702.26 & 690.12 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 350.24 & 38.67 & 39.16 & 67.24 & 322.98 & 35.00 & 62.15 & 34.12 & 324.13 & 372.87 & 121.08 & 121.08 \\
\hline Movement LOS & F & D & D & E & F & C & E & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{135.30} & \multicolumn{3}{|c|}{282.94} & \multicolumn{3}{|c|}{231.32} & \multicolumn{3}{|c|}{213.72} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{218.73} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.617} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 47.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.993
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 128 & 0 & 74 & 61 & 0 & 112 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1043 & 225 & 397 & 1825 & 389 & 365 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 280 & 60 & 107 & 491 & 105 & 98 \\
\hline Total Analysis Volume [veh/h] & 1122 & 242 & 427 & 1962 & 418 & 392 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 47 & 0 & 36 & 83 & 37 & 37 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 43 & 43 & 32 & 79 & 33 & 33 \\
\hline g / C, Green / Cycle & 0.36 & 0.36 & 0.27 & 0.66 & 0.28 & 0.28 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.35 & 0.17 & 0.27 & 0.61 & 0.13 & 0.28 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1143 & 510 & 426 & 2101 & 853 & 392 \\
\hline d1, Uniform Delay [s] & 38.09 & 29.75 & 43.97 & 18.17 & 36.43 & 43.47 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.46 & 0.50 & 0.11 & 0.46 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 22.49 & 3.14 & 42.30 & 9.22 & 0.44 & 43.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.98 & 0.47 & 1.00 & 0.93 & 0.49 & 1.00 \\
\hline d, Delay for Lane Group [s/veh] & 60.57 & 32.89 & 86.27 & 27.39 & 36.87 & 86.91 \\
\hline Lane Group LOS & E & C & F & C & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 18.59 & 5.51 & 16.86 & 21.44 & 5.19 & 16.23 \\
\hline 50th-Percentile Queue Length [ft] & 464.81 & 137.66 & 421.50 & 536.07 & 129.78 & 405.72 \\
\hline 95th-Percentile Queue Length [veh] & 25.66 & 9.35 & 23.63 & 29.04 & 8.93 & 22.84 \\
\hline 95th-Percentile Queue Length [ft] & 641.59 & 233.87 & 590.85 & 725.92 & 223.19 & 570.98 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 60.57 & 32.89 & 86.27 & 27.39 & 36.87 & 86.91 \\
\hline Movement LOS & E & C & F & C & D & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{55.66} & \multicolumn{2}{|c|}{37.92} & \multicolumn{2}{|c|}{61.08} \\
\hline Approach LOS & \multicolumn{2}{|c|}{E} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{47.33} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.993} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec / veh): & 357.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.250
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{2}
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 521 & 47 & 0 & 638 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 82 & 525 & 50 & 92 & 641 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 28 & 179 & 17 & 31 & 218 \\
\hline Total Analysis Volume [veh/h] & 84 & 112 & 715 & 68 & 125 & 873 \\
\hline Pedestrian Volume [ped/h] & & 0 & & 0 & & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 1.25 & 0.27 & 0.01 & 0.00 & 0.15 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 357.38 & 312.56 & 0.00 & 0.00 & 10.07 & 0.00 \\
\hline Movement LOS & F & F & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 13.75 & 13.75 & 0.00 & 0.00 & 0.53 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 343.66 & 343.66 & 0.00 & 0.00 & 13.13 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{331.77} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.26} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{33.53} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 11.5 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.015
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 49 & 0 & 0 & 13 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 46 & 9 & 24 & 81 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 46 & 9 & 75 & 81 & 7 & 33 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 16 & 3 & 25 & 27 & 2 & 11 \\
\hline Total Analysis Volume [veh/h] & 62 & 12 & 101 & 109 & 9 & 45 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.07 & 0.00 & 0.02 & 0.05 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.53 & 0.00 & 11.45 & 8.88 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.21 & 0.00 & 0.19 & 0.19 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 5.31 & 0.00 & 4.84 & 4.84 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{3.62} & \multicolumn{2}{|c|}{9.31} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{3.74} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 214 & 135 & 35 & 55 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 333 & 288 & 135 & 173 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 124 & 107 & 50 & 64 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 496 & 429 & 201 & 258 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 1.13 & 3.21 & 3.21 & 5.19 & 4.61 & 4.17 & 1.29 \\
\hline 95th-Percentile Queue Length [ft] & 28.21 & 80.31 & 80.31 & 129.82 & 115.13 & 104.18 & 32.28 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{18.73} & \multicolumn{2}{|c|}{24.77} & \multicolumn{2}{|c|}{21.01} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{21.60} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 28.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid \Gamma
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{2}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 114 & 16 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 104 & 0 & 0 & 64 & 34 & 53 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 120 & 277 & 0 & 1 & 318 & 100 & 99 & 3 & 116 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 83 & 0 & 0 & 96 & 30 & 30 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 144 & 333 & 0 & 1 & 382 & 120 & 119 & 4 & 139 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 8.68 & 9.21 & 1.04 & 0.02 & 1.02 & 0.11 \\
\hline 95th-Percentile Queue Length [ft] & 217.03 & 230.29 & 25.94 & 0.62 & 25.56 & 2.73 \\
\hline Approach Delay [s/veh] & 33.15 & 33.92 & \multicolumn{3}{|c|}{12.44} & 11.76 \\
\hline Approach LOS & D & D & B \\
\hline Intersection Delay [s/veh] & \multicolumn{5}{|c|}{D} \\
\hline Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline
\end{tabular}

Vistro File: Q:\...Itvcs1.vistro
Scenario 8: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM
Report File: Q:I...lintersections.pdf
Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Thru & 1.671 & 221.5 & F \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 1.585 & 236.2 & F \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Right & 1.357 & 143.1 & F \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & SB Thru & 1.067 & 108.0 & F \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.598 & 261.2 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.537 & 176.8 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.229 & 86.7 & F \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.006 & 12.7 & B \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & SB Thru & & 68.5 & F \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 85.1 & F \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

\section*{Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road}
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
221.5

F
1.671

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
771
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
t
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 526 & 88 & 3 & 0 & 95 & 12 & 20 & 98 & 828 & 2 & 62 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 530 & 1274 & 6 & 2 & 941 & 13 & 22 & 100 & 829 & 5 & 62 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 355 & 2 & 1 & 263 & 4 & 6 & 28 & 231 & 1 & 17 & 0 \\
\hline Total Analysis Volume [veh/h] & 592 & 1422 & 7 & 2 & 1050 & 15 & 25 & 112 & 925 & 6 & 69 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 58 & 0 & 11 & 43 & 0 & 0 & 51 & 0 & 0 & 51 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 61 & 0 & 39 & 39 & 47 & 47 & 47 & 47 \\
\hline g / C, Green / Cycle & 0.18 & 0.50 & 0.00 & 0.33 & 0.33 & 0.39 & 0.39 & 0.39 & 0.39 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.19 & 0.85 & 0.00 & 0.33 & 0.01 & 0.13 & 0.65 & 0.05 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 1081 & 1425 & 1477 & 1425 \\
\hline c, Capacity [veh/h] & 569 & 846 & 7 & 1039 & 464 & 458 & 557 & 610 & 557 \\
\hline d1, Uniform Delay [s] & 48.97 & 29.70 & 59.55 & 40.46 & 27.58 & 25.27 & 36.54 & 23.40 & 22.27 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 29.15 & 315.59 & 22.54 & 30.51 & 0.13 & 0.36 & 305.17 & 0.09 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.04 & 1.69 & 0.30 & 1.01 & 0.03 & 0.30 & 1.66 & 0.12 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 78.12 & 345.29 & 82.09 & 70.96 & 27.70 & 25.63 & 341.71 & 23.49 & 22.27 \\
\hline Lane Group LOS & F & F & F & F & C & C & F & C & C \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 10.23 & 94.67 & 0.10 & 18.28 & 0.29 & 2.64 & 63.14 & 1.38 & 0.02 \\
\hline 50th-Percentile Queue Length [ft] & 255.67 & 2366.82 & 2.50 & 456.95 & 7.24 & 66.06 & 1578.39 & 34.54 & 0.44 \\
\hline 95th-Percentile Queue Length [veh] & 15.78 & 148.83 & 0.18 & 25.47 & 0.52 & 4.76 & 99.11 & 2.49 & 0.03 \\
\hline 95th-Percentile Queue Length [ft] & 394.44 & 3720.75 & 4.49 & 636.63 & 13.04 & 118.91 & 2477.83 & 62.17 & 0.79 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.12 & 345.29 & 345.29 & 82.09 & 70.96 & 27.70 & 25.63 & 25.63 & 341.71 & 23.49 & 23.49 & 22.27 \\
\hline Movement LOS & F & F & F & F & F & C & C & C & F & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{267.03} & \multicolumn{3}{|c|}{70.38} & \multicolumn{3}{|c|}{300.93} & \multicolumn{3}{|c|}{23.47} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{221.52} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.671} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 2: Winchester Road at Pourroy Road/Abelia Street

Control Type:
Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
236.2

F 1.585

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 519 & 447 & 7 & 142 & 706 & 77 & 78 & 110 & 511 & 6 & 110 & 92 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 535 & 1608 & 146 & 177 & 1515 & 93 & 93 & 115 & 529 & 100 & 117 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 444 & 40 & 49 & 419 & 26 & 26 & 32 & 146 & 28 & 32 & 32 \\
\hline Total Analysis Volume [veh/h] & 591 & 1777 & 161 & 196 & 1674 & 103 & 103 & 127 & 585 & 110 & 129 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 31 & 45 & 0 & 29 & 43 & 0 & 18 & 35 & 0 & 11 & 28 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline 2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 49 & 49 & 17 & 39 & 39 & 9 & 31 & 31 & 7 & 29 & 29 \\
\hline g / C, Green / Cycle & 0.22 & 0.41 & 0.41 & 0.14 & 0.33 & 0.33 & 0.08 & 0.26 & 0.26 & 0.06 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.37 & 0.56 & 0.11 & 0.12 & 0.52 & 0.07 & 0.06 & 0.08 & 0.41 & 0.07 & 0.08 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 359 & 1317 & 588 & 222 & 1043 & 466 & 125 & 430 & 366 & 93 & 397 & 337 \\
\hline d1, Uniform Delay [s] & 46.50 & 35.25 & 23.34 & 50.69 & 40.40 & 29.32 & 54.50 & 35.88 & 44.60 & 56.50 & 37.86 & 38.43 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.14 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.44 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 302.57 & 162.30 & 1.15 & 13.87 & 276.91 & 1.10 & 12.65 & 0.38 & 282.45 & 143.44 & 0.47 & 0.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.65 & 1.35 & 0.27 & 0.88 & 1.61 & 0.22 & 0.82 & 0.30 & 1.60 & 1.18 & 0.32 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 349.07 & 197.54 & 24.49 & 64.57 & 317.31 & 30.42 & 67.15 & 36.25 & 327.06 & 199.94 & 38.33 & 39.14 \\
\hline Lane Group LOS & F & F & C & E & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 40.09 & 46.65 & 2.93 & 6.27 & 54.04 & 2.14 & 3.50 & 3.05 & 39.45 & 6.47 & 3.11 & 3.17 \\
\hline 50th-Percentile Queue Length [ft] & 1002.32 & 1166.18 & 73.35 & 156.69 & 1350.95 & 53.49 & 87.61 & 76.25 & 986.18 & 161.70 & 77.63 & 79.14 \\
\hline 95th-Percentile Queue Length [veh] & 62.48 & 69.67 & 5.28 & 10.37 & 83.80 & 3.85 & 6.31 & 5.49 & 61.65 & 11.16 & 5.59 & 5.70 \\
\hline 95th-Percentile Queue Length [ft] & 1561.95 & 1741.76 & 132.03 & 259.33 & 2094.93 & 96.27 & 157.70 & 137.25 & 1541.18 & 278.92 & 139.74 & 142.45 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 349.07 & 197.54 & 24.49 & 64.57 & 317.31 & 30.42 & 67.15 & 36.25 & 327.06 & 199.94 & 38.33 & 39.14 \\
\hline Movement LOS & F & F & C & E & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{221.94} & \multicolumn{3}{|c|}{277.22} & \multicolumn{3}{|c|}{248.89} & \multicolumn{3}{|c|}{86.92} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{236.25} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.585} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
143.1

F
1.357

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{77浐} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{7 | \({ }^{\text {F }}\)} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 630 & 10 & 430 & 793 & 0 & 0 & 0 & 0 & 9 & 0 & 343 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1885 & 188 & 516 & 1726 & 8 & 6 & 15 & 25 & 131 & 27 & 403 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 524 & 52 & 143 & 479 & 2 & 2 & 4 & 7 & 36 & 8 & 112 \\
\hline Total Analysis Volume [veh/h] & 27 & 2094 & 209 & 573 & 1918 & 9 & 7 & 17 & 28 & 146 & 30 & 448 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 110 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 56 & 0 & 19 & 64 & 0 & 11 & 21 & 0 & 14 & 24 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 52 & 52 & 15 & 63 & 63 & 1 & 17 & 17 & 10 & 26 & 26 \\
\hline g / C, Green / Cycle & 0.04 & 0.47 & 0.47 & 0.14 & 0.57 & 0.57 & 0.01 & 0.15 & 0.15 & 0.09 & 0.23 & 0.23 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.66 & 0.15 & 0.18 & 0.60 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.31 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 57 & 1514 & 676 & 423 & 1835 & 819 & 20 & 257 & 218 & 145 & 388 & 330 \\
\hline d1, Uniform Delay [s] & 52.01 & 28.92 & 17.82 & 47.50 & 23.39 & 10.01 & 53.89 & 39.86 & 40.25 & 50.00 & 33.06 & 42.26 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.18 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.37 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.93 & 176.75 & 1.19 & 165.52 & 34.02 & 0.02 & 10.53 & 0.11 & 0.26 & 65.93 & 0.08 & 179.27 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.47 & 1.38 & 0.31 & 1.35 & 1.05 & 0.01 & 0.36 & 0.07 & 0.13 & 1.01 & 0.08 & 1.36 \\
\hline d, Delay for Lane Group [s/veh] & 57.95 & 205.67 & 19.01 & 213.02 & 57.41 & 10.03 & 64.42 & 39.97 & 40.51 & 115.94 & 33.15 & 221.53 \\
\hline Lane Group LOS & E & F & B & F & F & B & E & D & D & F & C & F \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.79 & 54.52 & 3.18 & 15.20 & 28.07 & 0.09 & 0.25 & 0.41 & 0.68 & 6.64 & 0.64 & 25.28 \\
\hline 50th-Percentile Queue Length [ft] & 19.83 & 1363.12 & 79.47 & 379.96 & 701.74 & 2.18 & 6.28 & 10.15 & 16.96 & 165.90 & 15.94 & 631.93 \\
\hline 95th-Percentile Queue Length [veh] & 1.43 & 82.05 & 5.72 & 24.30 & 38.13 & 0.16 & 0.45 & 0.73 & 1.22 & 10.88 & 1.15 & 38.91 \\
\hline 95th-Percentile Queue Length [ft] & 35.69 & 2051.27 & 143.04 & 607.42 & 953.27 & 3.92 & 11.30 & 18.27 & 30.53 & 272.07 & 28.68 & 972.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 57.95 & 205.67 & 19.01 & 213.02 & 57.41 & 10.03 & 64.42 & 39.97 & 40.51 & 115.94 & 33.15 & 221.53 \\
\hline Movement LOS & E & F & B & F & F & B & E & D & D & F & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{187.22} & \multicolumn{3}{|c|}{92.91} & \multicolumn{3}{|c|}{43.55} & \multicolumn{3}{|c|}{187.77} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_l, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{143.10} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.357} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 108.0 \\
Level Of Service: & F \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.067
\end{tabular}

Volume to Capacity (v/c):

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 4 & 507 & 0 & 0 & 635 & 167 & 133 & 0 & 4 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 158 & 1839 & 5 & 2 & 1530 & 214 & 225 & 1 & 89 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 45 & 524 & 1 & 1 & 436 & 61 & 64 & 0 & 25 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 180 & 2095 & 6 & 2 & 1743 & 244 & 256 & 1 & 101 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 60 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 10 & 40 & 40 & 0 & 30 & 30 & 14 & 14 & 14 & 1 & 2 & 2 \\
\hline g / C, Green / Cycle & 0.14 & 0.56 & 0.56 & 0.00 & 0.42 & 0.42 & 0.19 & 0.20 & 0.20 & 0.01 & 0.02 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.66 & 0.00 & 0.00 & 0.55 & 0.17 & 0.16 & 0.00 & 0.07 & 0.00 & 0.00 & 0.01 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 223 & 1778 & 794 & 7 & 1346 & 601 & 304 & 339 & 288 & 18 & 38 & 33 \\
\hline d1, Uniform Delay [s] & 29.67 & 15.75 & 7.00 & 35.31 & 20.57 & 14.35 & 27.74 & 22.66 & 24.37 & 34.88 & 33.99 & 34.22 \\
\hline k, delay calibration & 0.11 & 0.29 & 0.11 & 0.11 & 0.19 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.75 & 83.79 & 0.00 & 22.11 & 134.93 & 0.44 & 6.21 & 0.00 & 0.73 & 9.86 & 0.55 & 5.91 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.81 & 1.18 & 0.01 & 0.29 & 1.29 & 0.41 & 0.84 & 0.00 & 0.35 & 0.33 & 0.05 & 0.34 \\
\hline d, Delay for Lane Group [s/veh] & 36.42 & 99.54 & 7.01 & 57.42 & 155.50 & 14.79 & 33.95 & 22.66 & 25.10 & 44.75 & 34.55 & 40.13 \\
\hline Lane Group LOS & D & F & A & E & F & B & C & C & C & D & C & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 3.05 & 30.13 & 0.03 & 0.07 & 33.80 & 2.24 & 4.51 & 0.01 & 1.46 & 0.15 & 0.04 & 0.24 \\
\hline 50th-Percentile Queue Length [ft] & 76.16 & 753.36 & 0.73 & 1.83 & 844.97 & 56.07 & 112.87 & 0.33 & 36.41 & 3.76 & 0.97 & 5.88 \\
\hline 95th-Percentile Queue Length [veh] & 5.48 & 44.17 & 0.05 & 0.13 & 50.99 & 4.04 & 8.00 & 0.02 & 2.62 & 0.27 & 0.07 & 0.42 \\
\hline 95th-Percentile Queue Length [ft] & 137.09 & 1104.17 & 1.31 & 3.29 & 1274.77 & 100.92 & 199.99 & 0.59 & 65.54 & 6.78 & 1.74 & 10.59 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 36.42 & 99.54 & 7.01 & 57.42 & 155.50 & 14.79 & 33.95 & 22.66 & 25.10 & 44.75 & 34.55 & 40.13 \\
\hline Movement LOS & D & F & A & E & F & B & C & C & C & D & C & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{94.31} & \multicolumn{3}{|c|}{138.14} & \multicolumn{3}{|c|}{31.42} & \multicolumn{3}{|c|}{41.00} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} & \multicolumn{3}{|c|}{D} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{108.01} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.067} \\
\hline
\end{tabular}

\section*{Sequence}
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
261.2

F
1.598

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 45 & 216 & 0 & 173 & 275 & 191 & 158 & 8 & 72 & 0 & 8 & 137 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 499 & 1618 & 208 & 202 & 1140 & 254 & 235 & 189 & 634 & 176 & 146 & 158 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 138 & 449 & 58 & 56 & 316 & 70 & 65 & 52 & 176 & 49 & 41 & 44 \\
\hline Total Analysis Volume [veh/h] & 554 & 1796 & 231 & 224 & 1265 & 282 & 261 & 210 & 704 & 195 & 162 & 175 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & - \\
\hline Cycle Length [s] & 120 \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 30 & 51 & 0 & 15 & 36 & 0 & 23 & 41 & 41 & 13 & 31 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

\section*{Version 4.00-03}

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 26 & 47 & 47 & 11 & 32 & 32 & 19 & 37 & 37 & 9 & 27 \\
\hline g / C, Green / Cycle & 0.22 & 0.39 & 0.39 & 0.09 & 0.27 & 0.27 & 0.16 & 0.31 & 0.31 & 0.08 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.60 & 0.63 & 0.14 & 0.40 & 0.20 & 0.16 & 0.13 & 0.49 & 0.12 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1612 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1536 \\
\hline c, Capacity [veh/h] & 346 & 659 & 633 & 147 & 856 & 382 & 253 & 514 & 437 & 120 & 343 \\
\hline d1, Uniform Delay [s] & 47.01 & 36.43 & 36.43 & 54.50 & 43.92 & 40.07 & 50.50 & 33.00 & 41.62 & 55.50 & 46.38 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.45 & 0.11 & 0.50 & 0.50 & 0.43 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 283.83 & 249.88 & 277.53 & 267.99 & 221.19 & 12.02 & 61.98 & 0.52 & 285.86 & 314.39 & 40.88 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.60 & 1.54 & 1.60 & 1.53 & 1.48 & 0.74 & 1.03 & 0.41 & 1.61 & 1.62 & 0.98 \\
\hline d, Delay for Lane Group [s/veh] & 330.84 & 286.31 & 313.96 & 322.49 & 265.10 & 52.09 & 112.49 & 33.52 & 327.48 & 369.89 & 87.26 \\
\hline Lane Group LOS & F & F & F & F & F & D & F & C & F & F & F \\
\hline Critical Lane Group & No & No & Yes & Yes & No & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 37.03 & 63.34 & 65.76 & 15.17 & 38.24 & 8.45 & 11.93 & 4.93 & 47.40 & 14.14 & 13.82 \\
\hline 50th-Percentile Queue Length [ft] & 925.82 & 1583.62 & 1643.99 & 379.36 & 955.88 & 211.20 & 298.13 & 123.15 & 1185.09 & 353.44 & 345.45 \\
\hline 95th-Percentile Queue Length [veh] & 57.58 & 97.12 & 101.87 & 24.60 & 58.66 & 13.21 & 17.86 & 8.57 & 74.01 & 23.20 & 19.91 \\
\hline 95th-Percentile Queue Length [ft] & 1439.53 & 2428.04 & 2546.68 & 614.90 & 1466.53 & 330.37 & 446.41 & 214.15 & 1850.32 & 579.92 & 497.85 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 330.84 & 298.36 & 313.96 & 322.49 & 265.10 & 52.09 & 112.49 & 33.52 & 327.48 & 369.89 & 87.26 & 87.26 \\
\hline Movement LOS & F & F & F & F & F & D & F & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{306.73} & \multicolumn{3}{|c|}{238.44} & \multicolumn{3}{|c|}{227.19} & \multicolumn{3}{|c|}{190.86} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{261.17} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.598} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 176.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.537
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{77} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 118 & 0 & 178 & 169 & 0 & 143 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1726 & 408 & 505 & 1434 & 316 & 612 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 464 & 110 & 136 & 385 & 85 & 165 \\
\hline Total Analysis Volume [veh/h] & 1856 & 439 & 543 & 1542 & 340 & 658 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 49 & 0 & 31 & 80 & 40 & 40 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 45 & 45 & 27 & 76 & 36 & 36 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.23 & 0.63 & 0.30 & 0.30 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.58 & 0.31 & 0.34 & 0.48 & 0.11 & 0.46 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1196 & 534 & 360 & 2022 & 930 & 427 \\
\hline d1, Uniform Delay [s] & 37.49 & 33.88 & 46.46 & 15.59 & 33.01 & 41.98 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 252.32 & 13.34 & 243.46 & 2.79 & 0.24 & 254.26 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.55 & 0.82 & 1.51 & 0.76 & 0.37 & 1.54 \\
\hline d, Delay for Lane Group [s/veh] & 289.81 & 47.22 & 289.91 & 18.38 & 33.25 & 296.24 \\
\hline Lane Group LOS & F & D & F & C & F & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 58.01 & 12.64 & 34.44 & 13.01 & 3.93 & 42.67 \\
\hline 50th-Percentile Queue Length [ft] & 1450.14 & 316.12 & 860.96 & 325.25 & 98.36 & 1066.69 \\
\hline 95th-Percentile Queue Length [veh] & 89.44 & 18.48 & 53.16 & 18.93 & 7.08 & 66.17 \\
\hline 95th-Percentile Queue Length [ft] & 2235.94 & 461.91 & 1328.94 & 473.13 & 177.05 & 1654.24 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 289.81 & 47.22 & 289.91 & 18.38 & 33.25 & 296.24 \\
\hline Movement LOS & F & D & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{243.41} & \multicolumn{2}{|c|}{89.10} & \multicolumn{2}{|c|}{206.64} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{176.76} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.537} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Level Of Service Report Intersection 7: Pat Road at Pourroy Road}
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 86.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.229
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
\stackrel{F}{F}
\]} & \multicolumn{2}{|c|}{\[
711
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 699 & 13 & 0 & 706 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 85 & 703 & 14 & 28 & 711 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 29 & 239 & 5 & 10 & 242 \\
\hline Total Analysis Volume [veh/h] & 14 & 116 & 958 & 19 & 38 & 969 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.23 & 0.38 & 0.01 & 0.00 & 0.05 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 86.71 & 39.49 & 0.00 & 0.00 & 10.39 & 0.00 \\
\hline Movement LOS & F & E & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 3.47 & 3.47 & 0.00 & 0.00 & 0.17 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 86.71 & 86.71 & 0.00 & 0.00 & 4.26 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{44.57} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.39} \\
\hline Approach LOS & \multicolumn{2}{|c|}{E} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.93} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 12.7 \\
Analysis Method: & HCM 2010 & Level Of Service: & B \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.006
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 0 & 0 & 37 & 0 & 0 & 33 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 171 & 1 & 4 & 137 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 171 & 1 & 42 & 137 & 2 & 39 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 58 & 0 & 14 & 46 & 1 & 13 \\
\hline Total Analysis Volume [veh/h] & 231 & 1 & 57 & 185 & 3 & 53 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.04 & 0.00 & 0.01 & 0.07 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 7.82 & 0.00 & 12.74 & 9.81 \\
\hline Movement LOS & A & A & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.13 & 0.00 & 0.23 & 0.23 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 3.34 & 0.00 & 5.78 & 5.78 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.84} & \multicolumn{2}{|c|}{9.97} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{1.89} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{B} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay (sec /veh): & 68.5 \\
Analysis Method: & HCM 2010 & Level Of Service: &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & & & & & & \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 274 & 343 & 86 & 68 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 463 & 476 & 172 & 174 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 173 & 177 & 64 & 65 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 690 & 709 & 256 & 259 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.81 & 7.59 & 7.59 & 17.90 & 16.39 & 5.50 & 1.33 \\
\hline 95th-Percentile Queue Length [ft] & 20.29 & 189.87 & 189.87 & 447.56 & 409.72 & 137.43 & 33.16 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{37.22} & \multicolumn{2}{|c|}{109.58} & \multicolumn{2}{|c|}{28.96} \\
\hline Approach LOS & \multicolumn{3}{|c|}{E} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{68.55} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
85.1

F

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 137 & 0 & 0 & 172 & 89 & 72 & 0 & 2 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 141 & 39 & 7 & 3 & 356 & 147 & 152 & 4 & 103 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 118 & 2 & 1 & 107 & 44 & 46 & 1 & 31 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 169 & 472 & 8 & 4 & 428 & 177 & 183 & 5 & 124 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Generated with PTV VISTRO

\section*{Version 4.00-03}

\section*{Intersection Settings}

Lanes
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 23.02 & 17.88 & 2.01 & 0.03 & 0.93 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 575.50 & 446.97 & 50.16 & 0.81 & 23.27 & 2.05 \\
\hline Approach Delay [s/veh] & 122.07 & 83.11 & \multicolumn{3}{|c|}{14.59} & 11.97 \\
\hline Approach LOS & F & F & B & F \\
\hline Intersection Delay [s/veh] & Intersection LOS & \multicolumn{5}{|c|}{} \\
\hline F &
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\E+A+P+C AM_new.pdf

Scenario 7: \(E+A+P+C A M\)
12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & \begin{tabular}{c} 
Winchester Road at Keller \\
Road
\end{tabular} & Signalized & HCM 2010 & EB Right & 0.736 & 15.9 & B \\
\hline 2 & \begin{tabular}{c} 
Winchester Road at Pourroy \\
Road/Abelia Street
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.329 & 132.5 & F \\
\hline 3 & \begin{tabular}{c} 
Winchester Road at Whisper \\
Heights Parkway/Pourroy \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 0.934 & 49.5 & D \\
\hline 4 & \begin{tabular}{c} 
Winchester Road at Jean \\
Nicholas Road/Skyview Road
\end{tabular} & Signalized & HCM 2010 & NB Left & 0.825 & 21.0 & C \\
\hline 5 & \begin{tabular}{c} 
Winchester Road at Max \\
Gillis Boulevard/Thompson \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Left & 1.617 & 218.7 & F \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 6 & \begin{tabular}{c} 
Winchester Road at Benton \\
Road
\end{tabular} & Signalized & HCM 2010 & WB Right & 0.993 & 47.3 & D \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 1.250 & 357.4 & F \\
\hline 8 & \begin{tabular}{c} 
Jean Nicholas Road at Elliot \\
Road
\end{tabular} & Two-way stop & HCM 2010 & WB Left & 0.325 & 31.9 & D \\
\hline 9 & \begin{tabular}{c} 
Pourroy Road at Skyview \\
Road
\end{tabular} & All-way stop & HCM 2010 & SB Thru & & 21.6 & C \\
\hline 10 & \begin{tabular}{c} 
Pourroy Road at Thompson \\
Road
\end{tabular} & All-way stop & HCM 2010 & SB Thru & & 28.9 & D \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03
Intersection Level Of Service Report Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
15.9

HCM 2010
15 minutes
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):

B
0.736

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 1 & 677 & 3 & 0 & 1058 & 3 & 1 & 1 & 4 & 8 & 0 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 323 & 75 & 12 & 0 & 79 & 8 & 2 & 11 & 98 & 15 & 38 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 324 & 779 & 15 & 0 & 1179 & 11 & 3 & 12 & 102 & 23 & 38 & 3 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 90 & 217 & 4 & 0 & 329 & 3 & 1 & 3 & 28 & 6 & 11 & 1 \\
\hline Total Analysis Volume [veh/h] & 362 & 869 & 17 & 0 & 1316 & 12 & 3 & 13 & 114 & 26 & 42 & 3 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 14 & 40 & 0 & 11 & 37 & 0 & 0 & 19 & 0 & 0 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 10 & 51 & 0 & 41 & 41 & 7 & 7 & 7 & 7 \\
\hline g / C, Green / Cycle & 0.14 & 0.73 & 0.00 & 0.59 & 0.59 & 0.10 & 0.10 & 0.10 & 0.10 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.12 & 0.53 & 0.00 & 0.41 & 0.01 & 0.01 & 0.08 & 0.06 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1671 & 1597 & 3192 & 1425 & 1554 & 1425 & 1090 & 1425 \\
\hline c, Capacity [veh/h] & 444 & 1212 & 3 & 1864 & 832 & 219 & 145 & 182 & 145 \\
\hline d1, Uniform Delay [s] & 29.15 & 5.63 & 0.00 & 10.33 & 6.12 & 28.55 & 30.74 & 29.96 & 28.34 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 3.71 & 3.91 & 0.00 & 2.28 & 0.03 & 0.14 & 8.94 & 1.27 & 0.06 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.82 & 0.73 & 0.00 & 0.71 & 0.01 & 0.07 & 0.78 & 0.37 & 0.02 \\
\hline d, Delay for Lane Group [s/veh] & 32.86 & 9.55 & 0.00 & 12.62 & 6.16 & 28.69 & 39.68 & 31.23 & 28.39 \\
\hline Lane Group LOS & C & A & A & B & A & C & D & D & C & C \\
\hline Critical Lane Group & No & Yes & No & No & No & No & Yes & No & No \\
\hline \hline 50th-Percentile Queue Length [veh] & 2.73 & 2.90 & 0.00 & 4.62 & 0.05 & 0.24 & 2.17 & 1.14 & 0.05 \\
\hline 50th-Percentile Queue Length [ft] & 68.27 & 72.58 & 0.00 & 115.51 & 1.27 & 6.11 & 54.27 & 28.57 & 1.15 \\
\hline 95th-Percentile Queue Length [veh] & 4.92 & 5.23 & 0.00 & 8.15 & 0.09 & 0.44 & 3.91 & 2.06 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 122.89 & 130.64 & 0.00 & 203.63 & 2.29 & 11.00 & 97.69 & 51.43 & 2.08 \\
\hline
\end{tabular}
\(\qquad\)

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 32.86 & 9.55 & 9.55 & 0.00 & 12.62 & 6.16 & 28.69 & 28.69 & 39.68 & 31.23 & 31.23 & 28.39 \\
\hline Movement LOS & C & A & A & A & B & A & C & C & D & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{16.31} & \multicolumn{3}{|c|}{12.56} & \multicolumn{3}{|c|}{38.32} & \multicolumn{3}{|c|}{31.11} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{15.92} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{B} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.736} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes
\begin{tabular}{cc} 
Delay (sec / veh): & 132.5 \\
Level Of Service: & F \\
Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.329
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 24 & 601 & 162 & 69 & 957 & 55 & 38 & 14 & 31 & 176 & 12 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 459 & 283 & 2 & 19 & 86 & 87 & 70 & 77 & 374 & 2 & 92 & 57 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 484 & 908 & 170 & 91 & 1081 & 144 & 110 & 92 & 406 & 185 & 104 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 134 & 251 & 47 & 25 & 299 & 40 & 30 & 25 & 112 & 51 & 29 & 32 \\
\hline Total Analysis Volume [veh/h] & 535 & 1003 & 188 & 101 & 1194 & 159 & 122 & 102 & 449 & 204 & 115 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 34 & 53 & 0 & 18 & 37 & 0 & 30 & 33 & 0 & 16 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 30 & 54 & 54 & 9 & 33 & 33 & 11 & 29 & 29 & 12 & 30 & 30 \\
\hline \(\mathrm{g} / \mathrm{C}\), Green / Cycle & 0.25 & 0.45 & 0.45 & 0.08 & 0.28 & 0.28 & 0.09 & 0.24 & 0.24 & 0.10 & 0.25 & 0.25 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.34 & 0.31 & 0.13 & 0.06 & 0.37 & 0.11 & 0.08 & 0.06 & 0.32 & 0.13 & 0.07 & 0.09 \\
\hline s , saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 399 & 1434 & 640 & 123 & 881 & 393 & 147 & 404 & 343 & 160 & 417 & 355 \\
\hline d1, Uniform Delay [s] & 45.00 & 26.55 & 20.98 & 54.59 & 43.45 & 35.41 & 53.58 & 36.83 & 45.56 & 54.00 & 36.34 & 37.22 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 169.23 & 2.86 & 1.17 & 12.76 & 167.50 & 3.07 & 11.40 & 0.33 & 158.51 & 164.21 & 0.35 & 0.63 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.34 & 0.70 & 0.29 & 0.82 & 1.36 & 0.40 & 0.83 & 0.25 & 1.31 & 1.28 & 0.28 & 0.36 \\
\hline d, Delay for Lane Group [s/veh] & 214.24 & 29.42 & 22.14 & 67.35 & 210.95 & 38.48 & 64.97 & 37.16 & 204.06 & 218.21 & 36.70 & 37.85 \\
\hline Lane Group LOS & F & C & C & E & F & D & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 29.69 & 10.74 & 3.22 & 3.27 & 32.45 & 3.86 & 4.08 & 2.47 & 25.23 & 11.98 & 2.69 & 3.11 \\
\hline 50th-Percentile Queue Length [ft] & 742.15 & 268.38 & 80.44 & 81.75 & 811.36 & 96.42 & 102.05 & 61.76 & 630.71 & 299.42 & 67.26 & 77.63 \\
\hline 95th-Percentile Queue Length [veh] & 44.89 & 16.11 & 5.79 & 5.89 & 49.09 & 6.94 & 7.35 & 4.45 & 38.38 & 19.26 & 4.84 & 5.59 \\
\hline 95th-Percentile Queue Length [ft] & 1122.22 & 402.71 & 144.79 & 147.15 & 1227.29 & 173.55 & 183.69 & 111.17 & 959.48 & 481.59 & 121.07 & 139.73 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 214.24 & 29.42 & 22.14 & 67.35 & 210.95 & 38.48 & 64.97 & 37.16 & 204.06 & 218.21 & 36.70 & 37.85 \\
\hline Movement LOS & F & C & C & E & F & D & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{85.91} & \multicolumn{3}{|c|}{182.11} & \multicolumn{3}{|c|}{153.55} & \multicolumn{3}{|c|}{119.68} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{132.54} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.329} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
49.5

D
0.934

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7711 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \boldsymbol{F}
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 22 & 701 & 74 & 46 & 1119 & 12 & 17 & 10 & 12 & 144 & 20 & 76 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 469 & 2 & 175 & 287 & 0 & 0 & 0 & 0 & 2 & 0 & 275 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 23 & 1198 & 79 & 223 & 1451 & 12 & 18 & 10 & 12 & 152 & 21 & 354 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 6 & 333 & 22 & 62 & 403 & 3 & 5 & 3 & 3 & 42 & 6 & 98 \\
\hline Total Analysis Volume [veh/h] & 26 & 1331 & 88 & 248 & 1612 & 13 & 20 & 11 & 13 & 169 & 23 & 393 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 59 & 0 & 14 & 62 & 0 & 11 & 30 & 0 & 17 & 36 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 56 & 56 & 10 & 62 & 62 & 3 & 25 & 25 & 13 & 35 & 35 \\
\hline g / C, Green / Cycle & 0.03 & 0.47 & 0.47 & 0.08 & 0.52 & 0.52 & 0.03 & 0.21 & 0.21 & 0.11 & 0.29 & 0.29 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.42 & 0.06 & 0.08 & 0.51 & 0.01 & 0.01 & 0.01 & 0.01 & 0.11 & 0.01 & 0.28 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 54 & 1491 & 666 & 258 & 1649 & 736 & 45 & 348 & 296 & 173 & 482 & 410 \\
\hline d1, Uniform Delay [s] & 56.94 & 29.22 & 18.16 & 54.80 & 28.32 & 14.15 & 57.36 & 37.90 & 38.00 & 53.35 & 30.86 & 42.03 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.38 & 0.11 & 0.41 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 6.49 & 8.53 & 0.41 & 17.97 & 17.42 & 0.04 & 6.59 & 0.04 & 0.06 & 53.99 & 0.04 & 30.96 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.48 & 0.89 & 0.13 & 0.96 & 0.98 & 0.02 & 0.44 & 0.03 & 0.04 & 0.98 & 0.05 & 0.96 \\
\hline d, Delay for Lane Group [s/veh] & 63.43 & 37.75 & 18.57 & 72.77 & 45.74 & 14.19 & 63.94 & 37.94 & 38.06 & 107.34 & 30.90 & 72.99 \\
\hline Lane Group LOS & E & D & B & E & D & B & E & D & D & F & C & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.84 & 17.48 & 1.37 & 4.22 & 23.72 & 0.17 & 0.69 & 0.27 & 0.32 & 7.67 & 0.49 & 14.83 \\
\hline 50th-Percentile Queue Length [ft] & 21.06 & 436.97 & 34.18 & 105.53 & 592.92 & 4.20 & 17.13 & 6.66 & 7.91 & 191.67 & 12.28 & 370.80 \\
\hline 95th-Percentile Queue Length [veh] & 1.52 & 24.34 & 2.46 & 7.59 & 31.70 & 0.30 & 1.23 & 0.48 & 0.57 & 12.21 & 0.88 & 21.15 \\
\hline 95th-Percentile Queue Length [ft] & 37.91 & 608.38 & 61.52 & 189.77 & 792.59 & 7.56 & 30.83 & 11.98 & 14.23 & 305.19 & 22.11 & 528.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 63.43 & 37.75 & 18.57 & 72.77 & 45.74 & 14.19 & 63.94 & 37.94 & 38.06 & 107.34 & 30.90 & 72.99 \\
\hline Movement LOS & E & D & B & E & D & B & E & D & D & F & C & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{37.04} & \multicolumn{3}{|c|}{49.10} & \multicolumn{3}{|c|}{49.80} & \multicolumn{3}{|c|}{81.26} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{49.46} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.934} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
21.0

Level Of Service:
Volume to Capacity (v/c):

C
0.825

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 86 & 661 & 4 & 6 & 1238 & 90 & 57 & 4 & 120 & 3 & 4 & 6 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 391 & 0 & 0 & 244 & 45 & 80 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 90 & 1078 & 4 & 6 & 1532 & 139 & 139 & 4 & 126 & 3 & 4 & 6 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 26 & 307 & 1 & 2 & 436 & 40 & 40 & 1 & 36 & 1 & 1 & 2 \\
\hline Total Analysis Volume [veh/h] & 103 & 1228 & 5 & 7 & 1745 & 158 & 158 & 5 & 144 & 3 & 5 & 7 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 14 & 22 & 0 & 11 & 19 & 0 & 68 & 76 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 9 & 86 & 86 & 1 & 78 & 78 & 14 & 16 & 16 & 1 & 2 \\
\hline g / C, Green / Cycle & 0.08 & 0.72 & 0.72 & 0.01 & 0.65 & 0.65 & 0.12 & 0.13 & 0.13 & 0.01 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.06 & 0.38 & 0.00 & 0.00 & 0.55 & 0.11 & 0.10 & 0.00 & 0.10 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 \\
\hline c, Capacity [veh/h] & 125 & 2292 & 1023 & 20 & 2083 & 930 & 186 & 218 & 185 & 10 & 33 \\
\hline d1, Uniform Delay [s] & 54.53 & 7.76 & 4.79 & 58.77 & 15.98 & 8.15 & 52.01 & 45.56 & 50.53 & 59.40 & 57.85 \\
\hline k, delay calibration & 0.22 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 23.52 & 0.90 & 0.01 & 9.93 & 4.22 & 0.40 & 10.33 & 0.04 & 6.85 & 17.26 & 2.09 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.83 & 0.54 & 0.00 & 0.35 & 0.84 & 0.17 & 0.85 & 0.02 & 0.78 & 0.31 & 0.15 & 0.25 \\
\hline d, Delay for Lane Group [s/veh] & 78.06 & 8.66 & 4.80 & 68.70 & 20.19 & 8.54 & 62.34 & 45.60 & 57.38 & 76.67 & 59.93 & 62.49 \\
\hline Lane Group LOS & E & A & A & E & C & A & E & D & E & E & E & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 3.76 & 5.64 & 0.03 & 0.26 & 15.74 & 1.44 & 5.19 & 0.13 & 4.54 & 0.14 & 0.17 & 0.25 \\
\hline 50th-Percentile Queue Length [ft] & 93.90 & 140.93 & 0.73 & 6.47 & 393.51 & 36.07 & 129.84 & 3.34 & 113.43 & 3.43 & 4.22 & 6.13 \\
\hline 95th-Percentile Queue Length [veh] & 6.76 & 9.53 & 0.05 & 0.47 & 22.25 & 2.60 & 8.93 & 0.24 & 8.03 & 0.25 & 0.30 & 0.44 \\
\hline 95th-Percentile Queue Length [ft] & 169.02 & 238.28 & 1.32 & 11.65 & 556.17 & 64.93 & 223.27 & 6.01 & 200.76 & 6.17 & 7.59 & 11.03 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.06 & 8.66 & 4.80 & 68.70 & 20.19 & 8.54 & 62.34 & 45.60 & 57.38 & 76.67 & 59.93 & 62.49 \\
\hline Movement LOS & E & A & A & E & C & A & E & D & E & E & E & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{13.99} & \multicolumn{3}{|c|}{19.41} & \multicolumn{3}{|c|}{59.74} & \multicolumn{3}{|c|}{64.48} \\
\hline Approach LOS & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{B} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{21.04} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{C} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.825} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
218.7

F
1.617

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 359 & 654 & 95 & 21 & 1275 & 87 & 66 & 118 & 535 & 209 & 233 & 17 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 59 & 181 & 0 & 69 & 113 & 63 & 101 & 3 & 22 & 0 & 3 & 110 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 432 & 861 & 99 & 91 & 1439 & 153 & 170 & 126 & 578 & 217 & 245 & 128 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 120 & 239 & 27 & 25 & 399 & 42 & 47 & 35 & 160 & 60 & 68 & 36 \\
\hline Total Analysis Volume [veh/h] & 479 & 956 & 110 & 101 & 1597 & 170 & 189 & 140 & 642 & 241 & 272 & 142 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 49 & 0 & 18 & 41 & 0 & 30 & 38 & 38 & 15 & 23 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 50 & 50 & 9 & 37 & 37 & 16 & 34 & 34 & 11 & 29 \\
\hline g / C, Green / Cycle & 0.18 & 0.42 & 0.42 & 0.08 & 0.31 & 0.31 & 0.13 & 0.28 & 0.28 & 0.09 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.30 & 0.32 & 0.33 & 0.06 & 0.50 & 0.12 & 0.12 & 0.08 & 0.45 & 0.15 & 0.26 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1617 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1581 \\
\hline c, Capacity [veh/h] & 293 & 698 & 673 & 123 & 989 & 441 & 216 & 472 & 402 & 147 & 377 \\
\hline d1, Uniform Delay [s] & 49.00 & 30.15 & 30.33 & 54.58 & 41.42 & 32.46 & 50.92 & 33.78 & 43.10 & 54.50 & 45.69 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.50 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 301.24 & 8.14 & 8.83 & 12.65 & 281.56 & 2.53 & 11.23 & 0.35 & 281.03 & 318.37 & 75.38 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.64 & 0.77 & 0.78 & 0.82 & 1.62 & 0.39 & 0.88 & 0.30 & 1.60 & 1.64 & 1.10 \\
\hline d, Delay for Lane Group [s/veh] & 350.24 & 38.29 & 39.16 & 67.24 & 322.98 & 35.00 & 62.15 & 34.12 & 324.13 & 372.87 & 121.08 \\
\hline Lane Group LOS & F & D & D & E & F & C & E & C & F & F & F \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 32.82 & 13.87 & 13.73 & 3.32 & 52.28 & 3.98 & 6.24 & 3.26 & 43.10 & 17.39 & 19.02 \\
\hline 50th-Percentile Queue Length [ft] & 820.45 & 346.77 & 343.16 & 82.91 & 1306.98 & 99.50 & 155.89 & 81.47 & 1077.52 & 434.63 & 475.62 \\
\hline 95th-Percentile Queue Length [veh] & 51.33 & 19.98 & 19.80 & 5.97 & 81.11 & 7.16 & 10.33 & 5.87 & 67.26 & 28.09 & 27.60 \\
\hline 95th-Percentile Queue Length [ft] & 1283.27 & 499.46 & 495.06 & 149.23 & 2027.71 & 179.10 & 258.28 & 146.64 & 1681.62 & 702.26 & 690.12 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 350.24 & 38.67 & 39.16 & 67.24 & 322.98 & 35.00 & 62.15 & 34.12 & 324.13 & 372.87 & 121.08 & 121.08 \\
\hline Movement LOS & F & D & D & E & F & C & E & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{135.30} & \multicolumn{3}{|c|}{282.94} & \multicolumn{3}{|c|}{231.32} & \multicolumn{3}{|c|}{213.72} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{218.73} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.617} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 47.3 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.993
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 880 & 216 & 311 & 1696 & 374 & 243 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 128 & 0 & 74 & 61 & 0 & 112 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1043 & 225 & 397 & 1825 & 389 & 365 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 280 & 60 & 107 & 491 & 105 & 98 \\
\hline Total Analysis Volume [veh/h] & 1122 & 242 & 427 & 1962 & 418 & 392 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 47 & 0 & 36 & 83 & 37 & 37 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline 11_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 43 & 43 & 32 & 79 & 33 & 33 \\
\hline g / C, Green / Cycle & 0.36 & 0.36 & 0.27 & 0.66 & 0.28 & 0.28 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.17 & 0.27 & 0.61 & 0.13 & 0.28 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1143 & 510 & 426 & 2101 & 853 & 392 \\
\hline d1, Uniform Delay [s] & 38.09 & 29.75 & 43.97 & 18.17 & 36.43 & 43.47 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.46 & 0.50 & 0.11 & 0.46 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 22.49 & 3.14 & 42.30 & 9.22 & 0.44 & 43.43 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.98 & 0.47 & 1.00 & 0.93 & 0.49 & 1.00 \\
\hline d, Delay for Lane Group [s/veh] & 60.57 & 32.89 & 86.27 & 27.39 & 36.87 & 86.91 \\
\hline Lane Group LOS & E & C & F & C & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 18.59 & 5.51 & 16.86 & 21.44 & 5.19 & 16.23 \\
\hline 50th-Percentile Queue Length [ft] & 464.81 & 137.66 & 421.50 & 536.07 & 129.78 & 405.72 \\
\hline 95th-Percentile Queue Length [veh] & 25.66 & 9.35 & 23.63 & 29.04 & 8.93 & 22.84 \\
\hline 95th-Percentile Queue Length [ft] & 641.59 & 233.87 & 590.85 & 725.92 & 223.19 & 570.98 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 60.57 & 32.89 & 86.27 & 27.39 & 36.87 & 86.91 \\
\hline Movement LOS & E & C & F & C & D & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{55.66} & \multicolumn{2}{|c|}{37.92} & \multicolumn{2}{|c|}{61.08} \\
\hline Approach LOS & \multicolumn{2}{|c|}{E} & \multicolumn{2}{|c|}{D} & \multicolumn{2}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{47.33} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{0.993} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
357.4

F
1.250

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 79 & 4 & 3 & 88 & 3 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 60 & 0 & 521 & 47 & 0 & 638 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 62 & 82 & 525 & 50 & 92 & 641 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 21 & 28 & 179 & 17 & 31 & 218 \\
\hline Total Analysis Volume [veh/h] & 84 & 112 & 715 & 68 & 125 & 873 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 1.25 & 0.27 & 0.01 & 0.00 & 0.15 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 357.38 & 312.56 & 0.00 & 0.00 & 10.07 & 0.00 \\
\hline Movement LOS & F & F & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 13.75 & 13.75 & 0.00 & 0.00 & 0.53 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 343.66 & 343.66 & 0.00 & 0.00 & 13.13 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{331.77} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.26} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{33.53} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 31.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.325
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\hat{F}
\]} & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 189 & 13 & 94 & 138 & 49 & 127 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 46 & 9 & 24 & 81 & 7 & 19 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 243 & 23 & 122 & 225 & 58 & 151 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 82 & 8 & 41 & 76 & 20 & 51 \\
\hline Total Analysis Volume [veh/h] & 328 & 31 & 165 & 304 & 78 & 204 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Prority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.14 & 0.00 & 0.33 & 0.29 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.48 & 0.00 & 31.90 & 22.03 \\
\hline Movement LOS & A & A & A & A & D & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.48 & 0.00 & 4.08 & 4.08 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 11.92 & 0.00 & 101.90 & 101.90 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{2.98} & \multicolumn{2}{|c|}{24.76} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{7.55} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
\leftrightarrows \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 77 & 114 & 147 & 96 & 113 & 94 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 214 & 135 & 35 & 55 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 80 & 333 & 288 & 135 & 173 & 98 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 30 & 124 & 107 & 50 & 64 & 37 \\
\hline Total Analysis Volume [veh/h] & 119 & 496 & 429 & 201 & 258 & 146 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{l} 
Intersection Settings \\
Lanes \\
\hline
\end{tabular}

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 1.13 & 3.21 & 3.21 & 5.19 & 4.61 & 4.17 & 1.29 \\
\hline 95th-Percentile Queue Length [ft] & 28.21 & 80.31 & 80.31 & 129.82 & 115.13 & 104.18 & 32.28 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{18.73} & \multicolumn{2}{|c|}{24.77} & \multicolumn{2}{|c|}{21.01} \\
\hline Approach LOS & \multicolumn{3}{|c|}{C} & \multicolumn{2}{|c|}{C} & \multicolumn{2}{|c|}{C} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{21.60} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{C} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 10: Pourroy Road at Thompson Road
\begin{tabular}{cccc} 
Control Type: & All-way stop & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 28.9 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
H \mid
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 114 & 166 & 0 & 1 & 244 & 63 & 44 & 3 & 111 & 6 & 7 & 0 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 1 & 104 & 0 & 0 & 64 & 34 & 53 & 0 & 1 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 120 & 277 & 0 & 1 & 318 & 100 & 99 & 3 & 116 & 6 & 7 & 0 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 36 & 83 & 0 & 0 & 96 & 30 & 30 & 1 & 35 & 2 & 2 & 0 \\
\hline Total Analysis Volume [veh/h] & 144 & 333 & 0 & 1 & 382 & 120 & 119 & 4 & 139 & 7 & 8 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 8.68 & 9.21 & 1.04 & 0.02 & 1.02 & 0.11 \\
\hline 95th-Percentile Queue Length [ft] & 217.03 & 230.29 & 25.94 & 0.62 & 25.56 & 2.73 \\
\hline Approach Delay [s/veh] & 33.15 & 33.92 & & 12.44 & & 11.76 \\
\hline Approach LOS & D & D & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{28.88} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton
Pat Road at Pourroy Road Jean Nicholas Road at Elliot


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


Temecula Valley Charter School
Vistro File: Q:\...Itvcs1.vistro
Report File: Q:\...\E+A+P+C PM_new.pdf

Scenario 8: \(E+A+P+C\) PM 12/13/2016

Intersection Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline ID & Intersection Name & Control Type & Method & Worst Mvmt & V/C & Delay (s/veh) & LOS \\
\hline 1 & Winchester Road at Keller Road & Signalized & HCM 2010 & NB Thru & 1.671 & 221.5 & F \\
\hline 2 & Winchester Road at Pourroy Road/Abelia Street & Signalized & HCM 2010 & NB Left & 1.585 & 236.2 & F \\
\hline 3 & Winchester Road at Whisper Heights Parkway/Pourroy Road & Signalized & HCM 2010 & WB Right & 1.357 & 143.1 & F \\
\hline 4 & Winchester Road at Jean Nicholas Road/Skyview Road & Signalized & HCM 2010 & NB Left & 0.968 & 43.0 & D \\
\hline 5 & Winchester Road at Max Gillis Boulevard/Thompson Road & Signalized & HCM 2010 & WB Left & 1.598 & 261.2 & F \\
\hline 6 & Winchester Road at Benton Road & Signalized & HCM 2010 & WB Right & 1.537 & 176.8 & F \\
\hline 7 & Pat Road at Pourroy Road & Two-way stop & HCM 2010 & NB Left & 0.229 & 86.7 & F \\
\hline 8 & Jean Nicholas Road at Elliot Road & Two-way stop & HCM 2010 & WB Left & 0.195 & 25.4 & D \\
\hline 9 & Pourroy Road at Skyview Road & All-way stop & HCM 2010 & SB Thru & & 68.5 & F \\
\hline 10 & Pourroy Road at Thompson Road & All-way stop & HCM 2010 & NB Thru & & 85.1 & F \\
\hline
\end{tabular}

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Version 4.00-03

\section*{Intersection Level Of Service Report} Intersection 1: Winchester Road at Keller Road
Control Type:
Analysis Method:
Analysis Period:

Signalized
HCM 2010
15 minutes

> Delay (sec / veh):
> Level Of Service:
> Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
221.5
F
1.671

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
77 F
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
H \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 200.00 & 100.00 & 200.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Keller Road} & \multicolumn{3}{|c|}{Keller Road} \\
\hline Base Volume Input [veh/h] & 4 & 1140 & 3 & 2 & 813 & 1 & 2 & 2 & 1 & 3 & 0 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 526 & 88 & 3 & 0 & 95 & 12 & 20 & 98 & 828 & 2 & 62 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 530 & 1274 & 6 & 2 & 941 & 13 & 22 & 100 & 829 & 5 & 62 & 1 \\
\hline Peak Hour Factor & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 & 0.8960 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 355 & 2 & 1 & 263 & 4 & 6 & 28 & 231 & 1 & 17 & 0 \\
\hline Total Analysis Volume [veh/h] & 592 & 1422 & 7 & 2 & 1050 & 15 & 25 & 112 & 925 & 6 & 69 & 1 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 0 & 8 & 0 & 0 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & - & - & - & - & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 0 & 7 & 0 & 0 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 0 & 30 & 0 & 0 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 & 0.0 & 1.0 & 0.0 \\
\hline Split [s] & 26 & 58 & 0 & 11 & 43 & 0 & 0 & 51 & 0 & 0 & 51 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 & 0.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline I1, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 & 0.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & & No & & & No & \\
\hline Maximum Recall & No & No & & No & No & & & No & & & No & \\
\hline Pedestrian Recall & No & No & & No & No & & & No & & & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & L & C & R & C & R & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 2.00 & 0.00 & 2.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 22 & 61 & 0 & 39 & 39 & 47 & 47 & 47 & 47 \\
\hline g / C, Green / Cycle & 0.18 & 0.50 & 0.00 & 0.33 & 0.33 & 0.39 & 0.39 & 0.39 & 0.39 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.19 & 0.85 & 0.00 & 0.33 & 0.01 & 0.13 & 0.65 & 0.05 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 3101 & 1675 & 1597 & 3192 & 1425 & 1081 & 1425 & 1477 & 1425 \\
\hline c, Capacity [veh/h] & 569 & 846 & 7 & 1039 & 464 & 458 & 557 & 610 & 557 \\
\hline d1, Uniform Delay [s] & 48.97 & 29.70 & 59.55 & 40.46 & 27.58 & 25.27 & 36.54 & 23.40 & 22.27 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.11 & 0.50 & 0.50 & 0.11 & 0.50 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 29.15 & 315.59 & 22.54 & 30.51 & 0.13 & 0.36 & 305.17 & 0.09 & 0.00 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.04 & 1.69 & 0.30 & 1.01 & 0.03 & 0.30 & 1.66 & 0.12 & 0.00 \\
\hline d, Delay for Lane Group [s/veh] & 78.12 & 345.29 & 82.09 & 70.96 & 27.70 & 25.63 & 341.71 & 23.49 & 22.27 \\
\hline Lane Group LOS & F & F & F & F & C & C & F & C & C \\
\hline Critical Lane Group & No & Yes & Yes & No & No & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 10.23 & 94.67 & 0.10 & 18.28 & 0.29 & 2.64 & 63.14 & 1.38 & 0.02 \\
\hline 50th-Percentile Queue Length [ft] & 255.67 & 2366.82 & 2.50 & 456.95 & 7.24 & 66.06 & 1578.39 & 34.54 & 0.44 \\
\hline 95th-Percentile Queue Length [veh] & 15.78 & 148.83 & 0.18 & 25.47 & 0.52 & 4.76 & 99.11 & 2.49 & 0.03 \\
\hline 95th-Percentile Queue Length [ft] & 394.44 & 3720.75 & 4.49 & 636.63 & 13.04 & 118.91 & 2477.83 & 62.17 & 0.79 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 78.12 & 345.29 & 345.29 & 82.09 & 70.96 & 27.70 & 25.63 & 25.63 & 341.71 & 23.49 & 23.49 & 22.27 \\
\hline Movement LOS & F & F & F & F & F & C & C & C & F & C & C & C \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{267.03} & \multicolumn{3}{|c|}{70.38} & \multicolumn{3}{|c|}{300.93} & \multicolumn{3}{|c|}{23.47} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{221.52} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.671} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 4 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 8 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 2: Winchester Road at Pourroy Road/Abelia Street
Control Type:
Analysis Method:
Analysis Period:

\section*{Signalized}

HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity ( \(\mathrm{v} / \mathrm{c}\) ):
236.2

F
1.585

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} & \multicolumn{3}{|c|}{\[
71 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{65.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Abelia Street} \\
\hline Base Volume Input [veh/h] & 15 & 1116 & 134 & 34 & 778 & 15 & 14 & 5 & 17 & 90 & 7 & 24 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 519 & 447 & 7 & 142 & 706 & 77 & 78 & 110 & 511 & 6 & 110 & 92 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 535 & 1608 & 146 & 177 & 1515 & 93 & 93 & 115 & 529 & 100 & 117 & 117 \\
\hline Peak Hour Factor & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 & 0.9050 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 148 & 444 & 40 & 49 & 419 & 26 & 26 & 32 & 146 & 28 & 32 & 32 \\
\hline Total Analysis Volume [veh/h] & 591 & 1777 & 161 & 196 & 1674 & 103 & 103 & 127 & 585 & 110 & 129 & 129 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 31 & 45 & 0 & 29 & 43 & 0 & 18 & 35 & 0 & 11 & 28 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 27 & 49 & 49 & 17 & 39 & 39 & 9 & 31 & 31 & 7 & 29 & 29 \\
\hline g/ C, Green / Cycle & 0.22 & 0.41 & 0.41 & 0.14 & 0.33 & 0.33 & 0.08 & 0.26 & 0.26 & 0.06 & 0.24 & 0.24 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.37 & 0.56 & 0.11 & 0.12 & 0.52 & 0.07 & 0.06 & 0.08 & 0.41 & 0.07 & 0.08 & 0.09 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 359 & 1317 & 588 & 222 & 1043 & 466 & 125 & 430 & 366 & 93 & 397 & 337 \\
\hline d1, Uniform Delay [s] & 46.50 & 35.25 & 23.34 & 50.69 & 40.40 & 29.32 & 54.50 & 35.88 & 44.60 & 56.50 & 37.86 & 38.43 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.14 & 0.50 & 0.50 & 0.11 & 0.11 & 0.50 & 0.44 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 302.57 & 162.30 & 1.15 & 13.87 & 276.91 & 1.10 & 12.65 & 0.38 & 282.45 & 143.44 & 0.47 & 0.71 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.65 & 1.35 & 0.27 & 0.88 & 1.61 & 0.22 & 0.82 & 0.30 & 1.60 & 1.18 & 0.32 & 0.38 \\
\hline d, Delay for Lane Group [s/veh] & 349.07 & 197.54 & 24.49 & 64.57 & 317.31 & 30.42 & 67.15 & 36.25 & 327.06 & 199.94 & 38.33 & 39.14 \\
\hline Lane Group LOS & F & F & C & E & F & C & E & D & F & F & D & D \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & No & No & Yes & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 40.09 & 46.65 & 2.93 & 6.27 & 54.04 & 2.14 & 3.50 & 3.05 & 39.45 & 6.47 & 3.11 & 3.17 \\
\hline 50th-Percentile Queue Length [ft] & 1002.32 & 1166.18 & 73.35 & 156.69 & 1350.95 & 53.49 & 87.61 & 76.25 & 986.18 & 161.70 & 77.63 & 79.14 \\
\hline 95th-Percentile Queue Length [veh] & 62.48 & 69.67 & 5.28 & 10.37 & 83.80 & 3.85 & 6.31 & 5.49 & 61.65 & 11.16 & 5.59 & 5.70 \\
\hline 95th-Percentile Queue Length [ft] & 1561.95 & 1741.76 & 132.03 & 259.33 & 2094.93 & 96.27 & 157.70 & 137.25 & 1541.18 & 278.92 & 139.74 & 142.45 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 349.07 & 197.54 & 24.49 & 64.57 & 317.31 & 30.42 & 67.15 & 36.25 & 327.06 & 199.94 & 38.33 & 39.14 \\
\hline Movement LOS & F & F & C & E & F & C & E & D & F & F & D & D \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{221.94} & \multicolumn{3}{|c|}{277.22} & \multicolumn{3}{|c|}{248.89} & \multicolumn{3}{|c|}{86.92} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{236.25} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.585} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
143.1

F
1.357

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
77 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
71
\]} & \multicolumn{3}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{25.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Whisper Heights Parkway} & \multicolumn{3}{|c|}{Pourroy Road} \\
\hline Base Volume Input [veh/h] & 23 & 1207 & 171 & 83 & 897 & 8 & 6 & 14 & 24 & 117 & 26 & 58 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 630 & 10 & 430 & 793 & 0 & 0 & 0 & 0 & 9 & 0 & 343 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 24 & 1885 & 188 & 516 & 1726 & 8 & 6 & 15 & 25 & 131 & 27 & 403 \\
\hline Peak Hour Factor & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 & 0.9000 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 7 & 524 & 52 & 143 & 479 & 2 & 2 & 4 & 7 & 36 & 8 & 112 \\
\hline Total Analysis Volume [veh/h] & 27 & 2094 & 209 & 573 & 1918 & 9 & 7 & 17 & 28 & 146 & 30 & 448 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 11 & 56 & 0 & 19 & 64 & 0 & 11 & 21 & 0 & 14 & 24 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & R & L & C & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 4 & 52 & 52 & 15 & 63 & 63 & 1 & 17 & 17 & 10 & 26 & 26 \\
\hline g / C, Green / Cycle & 0.04 & 0.47 & 0.47 & 0.14 & 0.57 & 0.57 & 0.01 & 0.15 & 0.15 & 0.09 & 0.23 & 0.23 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.02 & 0.66 & 0.15 & 0.18 & 0.60 & 0.01 & 0.00 & 0.01 & 0.02 & 0.09 & 0.02 & 0.31 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 3101 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 & 1425 \\
\hline c, Capacity [veh/h] & 57 & 1514 & 676 & 423 & 1835 & 819 & 20 & 257 & 218 & 145 & 388 & 330 \\
\hline d1, Uniform Delay [s] & 52.01 & 28.92 & 17.82 & 47.50 & 23.39 & 10.01 & 53.89 & 39.86 & 40.25 & 50.00 & 33.06 & 42.26 \\
\hline k, delay calibration & 0.11 & 0.50 & 0.50 & 0.18 & 0.50 & 0.50 & 0.11 & 0.11 & 0.11 & 0.37 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 5.93 & 176.75 & 1.19 & 165.52 & 34.02 & 0.02 & 10.53 & 0.11 & 0.26 & 65.93 & 0.08 & 179.27 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.47 & 1.38 & 0.31 & 1.35 & 1.05 & 0.01 & 0.36 & 0.07 & 0.13 & 1.01 & 0.08 & 1.36 \\
\hline d, Delay for Lane Group [s/veh] & 57.95 & 205.67 & 19.01 & 213.02 & 57.41 & 10.03 & 64.42 & 39.97 & 40.51 & 115.94 & 33.15 & 221.53 \\
\hline Lane Group LOS & E & F & B & F & F & B & E & D & D & F & C & F \\
\hline Critical Lane Group & No & Yes & No & Yes & No & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 0.79 & 54.52 & 3.18 & 15.20 & 28.07 & 0.09 & 0.25 & 0.41 & 0.68 & 6.64 & 0.64 & 25.28 \\
\hline 50th-Percentile Queue Length [ft] & 19.83 & 1363.12 & 79.47 & 379.96 & 701.74 & 2.18 & 6.28 & 10.15 & 16.96 & 165.90 & 15.94 & 631.93 \\
\hline 95th-Percentile Queue Length [veh] & 1.43 & 82.05 & 5.72 & 24.30 & 38.13 & 0.16 & 0.45 & 0.73 & 1.22 & 10.88 & 1.15 & 38.91 \\
\hline 95th-Percentile Queue Length [ft] & 35.69 & 2051.27 & 143.04 & 607.42 & 953.27 & 3.92 & 11.30 & 18.27 & 30.53 & 272.07 & 28.68 & 972.70 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 57.95 & 205.67 & 19.01 & 213.02 & 57.41 & 10.03 & 64.42 & 39.97 & 40.51 & 115.94 & 33.15 & 221.53 \\
\hline Movement LOS & E & F & B & F & F & B & E & D & D & F & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{187.22} & \multicolumn{3}{|c|}{92.91} & \multicolumn{3}{|c|}{43.55} & \multicolumn{3}{|c|}{187.77} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{143.10} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.357} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
43.0

Level Of Service:
Volume to Capacity (v/c):

D
0.968

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \| \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{T|} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Jean Nicholas Road} & \multicolumn{3}{|c|}{Skyview Road} \\
\hline Base Volume Input [veh/h] & 148 & 1281 & 5 & 2 & 861 & 45 & 88 & 1 & 82 & 5 & 2 & 10 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 4 & 507 & 0 & 0 & 635 & 167 & 133 & 0 & 4 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 158 & 1839 & 5 & 2 & 1530 & 214 & 225 & 1 & 89 & 5 & 2 & 10 \\
\hline Peak Hour Factor & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 & 0.8780 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 45 & 524 & 1 & 1 & 436 & 61 & 64 & 0 & 25 & 1 & 1 & 3 \\
\hline Total Analysis Volume [veh/h] & 180 & 2095 & 6 & 2 & 1743 & 244 & 256 & 1 & 101 & 6 & 2 & 11 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Yes \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 0 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 17 & 58 & 0 & 11 & 52 & 0 & 22 & 30 & 0 & 11 & 19 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03

\section*{Lane Group Calculations}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & R & L & C & R & L & C & C & L & C \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 13 & 73 & 73 & 0 & 61 & 61 & 18 & 19 & 19 & 1 & 2 \\
\hline g/C, Green / Cycle & 0.12 & 0.67 & 0.67 & 0.00 & 0.55 & 0.55 & 0.16 & 0.17 & 0.17 & 0.01 & 0.02 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.11 & 0.66 & 0.00 & 0.00 & 0.55 & 0.17 & 0.16 & 0.00 & 0.07 & 0.00 & 0.00 \\
\hline s, saturation flow rate [veh/h] & 1597 & 3192 & 1425 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1676 \\
\hline c, Capacity [veh/h] & 189 & 2119 & 946 & 8 & 1756 & 784 & 262 & 292 & 248 & 19 & 37 \\
\hline d1, Uniform Delay [s] & 48.19 & 18.08 & 6.24 & 54.59 & 24.54 & 13.44 & 45.83 & 37.57 & 40.41 & 53.97 & 52.73 \\
\hline k, delay calibration & 0.36 & 0.50 & 0.50 & 0.11 & 0.50 & 0.50 & 0.41 & 0.11 & 0.11 & 0.11 & 0.11 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 44.32 & 17.01 & 0.01 & 16.72 & 19.78 & 1.03 & 45.04 & 0.00 & 1.07 & 9.48 & 0.61 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 0.95 & 0.99 & 0.01 & 0.26 & 0.99 & 0.31 & 0.98 & 0.00 & 0.41 & 0.32 & 0.05 & 0.35 \\
\hline d, Delay for Lane Group [s/veh] & 92.51 & 35.10 & 6.25 & 71.30 & 44.32 & 14.48 & 90.87 & 37.58 & 41.49 & 63.45 & 53.33 & 59.68 \\
\hline Lane Group LOS & F & D & A & E & D & B & F & D & D & E & D & E \\
\hline Critical Lane Group & Yes & No & No & No & Yes & No & Yes & No & No & No & No & Yes \\
\hline 50th-Percentile Queue Length [veh] & 6.98 & 23.95 & 0.04 & 0.09 & 23.46 & 3.08 & 10.19 & 0.02 & 2.51 & 0.21 & 0.06 & 0.36 \\
\hline 50th-Percentile Queue Length [ft] & 174.61 & 598.87 & 1.02 & 2.22 & 586.42 & 77.06 & 254.72 & 0.57 & 62.63 & 5.35 & 1.51 & 8.93 \\
\hline 95th-Percentile Queue Length [veh] & 11.32 & 31.98 & 0.07 & 0.16 & 31.40 & 5.55 & 15.42 & 0.04 & 4.51 & 0.39 & 0.11 & 0.64 \\
\hline 95th-Percentile Queue Length [ft] & 282.96 & 799.54 & 1.83 & 4.00 & 784.99 & 138.71 & 385.59 & 1.02 & 112.74 & 9.63 & 2.71 & 16.07 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 92.51 & 35.10 & 6.25 & 71.30 & 44.32 & 14.48 & 90.87 & 37.58 & 41.49 & 63.45 & 53.33 & 59.68 \\
\hline Movement LOS & F & D & A & E & D & B & F & D & D & E & D & E \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{39.55} & \multicolumn{3}{|c|}{40.69} & \multicolumn{3}{|c|}{76.79} & \multicolumn{3}{|c|}{60.20} \\
\hline Approach LOS & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{D} & \multicolumn{3}{|c|}{E} & \multicolumn{3}{|c|}{E} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{42.99} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{D} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{0.968} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


Version 4.00-03

\section*{Intersection Level Of Service Report}

Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road

Control Type: Analysis Method: Analysis Period:

Signalized
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):
261.2

F
1.598

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{71} & \multicolumn{3}{|c|}{\[
7 \|
\]} & \multicolumn{3}{|c|}{\[
7 \Gamma
\]} & \multicolumn{3}{|c|}{\[
7 F
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{55.00} & \multicolumn{3}{|c|}{30.00} & \multicolumn{3}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{No} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|c|}{Winchester Road} & \multicolumn{3}{|l|}{Max Gillis Boulevard} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Base Volume Input [veh/h] & 437 & 1348 & 200 & 28 & 832 & 61 & 74 & 174 & 540 & 169 & 133 & 20 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 45 & 216 & 0 & 173 & 275 & 191 & 158 & 8 & 72 & 0 & 8 & 137 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 499 & 1618 & 208 & 202 & 1140 & 254 & 235 & 189 & 634 & 176 & 146 & 158 \\
\hline Peak Hour Factor & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 & 0.9010 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 138 & 449 & 58 & 56 & 316 & 70 & 65 & 52 & 176 & 49 & 41 & 44 \\
\hline Total Analysis Volume [veh/h] & 554 & 1796 & 231 & 224 & 1265 & 282 & 261 & 210 & 704 & 195 & 162 & 175 \\
\hline Presence of On-Street Parking & No & & No & No & & No & No & & No & No & & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|l|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline Bicycle Volume [bicycles/h] & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} & \multicolumn{3}{|c|}{0} \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & Time of Day Pattern Isolated \\
\hline Actuation Type & Fully actuated \\
\hline Offset [s] & 0.0 \\
\hline Offset Reference & LeadGreen \\
\hline Permissive Mode & SingleBand \\
\hline Lost time [s] & 16.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Control Type & Protecte & Permiss & Permiss & Protecte & Permiss & Permiss & Protecte & Permiss & Overlap & Protecte & Permiss & Permiss \\
\hline Signal group & 5 & 2 & 0 & 1 & 6 & 0 & 3 & 8 & 8 & 7 & 4 & 0 \\
\hline Auxiliary Signal Groups & & & & & & & & & 8 & & & \\
\hline Lead / Lag & Lead & - & - & Lead & - & - & Lead & - & - & Lead & - & - \\
\hline Minimum Green [s] & 7 & 7 & 0 & 7 & 7 & 0 & 7 & 7 & 7 & 7 & 7 & 0 \\
\hline Maximum Green [s] & 30 & 30 & 0 & 30 & 30 & 0 & 30 & 30 & 30 & 30 & 30 & 0 \\
\hline Amber [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline All red [s] & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 & 1.0 & 0.0 \\
\hline Split [s] & 30 & 51 & 0 & 15 & 36 & 0 & 23 & 41 & 41 & 13 & 31 & 0 \\
\hline Vehicle Extension [s] & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 & 3.0 & 0.0 \\
\hline Walk [s] & 0 & 5 & 0 & 0 & 5 & 0 & 0 & 5 & 5 & 0 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 0 & 10 & 0 & 0 & 10 & 0 & 0 & 10 & 10 & 0 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline 12, Clearance Lost Time [s] & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 & 2.0 & 0.0 \\
\hline Minimum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Maximum Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Pedestrian Recall & No & No & & No & No & & No & No & No & No & No & \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Lane Group & L & C & C & L & C & R & L & C & R & L \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 26 & 47 & 47 & 11 & 32 & 32 & 19 & 37 & 37 & 9 & 27 \\
\hline g / C, Green / Cycle & 0.22 & 0.39 & 0.39 & 0.09 & 0.27 & 0.27 & 0.16 & 0.31 & 0.31 & 0.08 & 0.22 \\
\hline (v/s)_i Volume / Saturation Flow Rate & 0.35 & 0.60 & 0.63 & 0.14 & 0.40 & 0.20 & 0.16 & 0.13 & 0.49 & 0.12 & 0.22 \\
\hline s, saturation flow rate [veh/h] & 1597 & 1676 & 1612 & 1597 & 3192 & 1425 & 1597 & 1676 & 1425 & 1597 & 1536 \\
\hline c, Capacity [veh/h] & 346 & 659 & 633 & 147 & 856 & 382 & 253 & 514 & 437 & 120 & 343 \\
\hline d1, Uniform Delay [s] & 47.01 & 36.43 & 36.43 & 54.50 & 43.92 & 40.07 & 50.50 & 33.00 & 41.62 & 55.50 & 46.38 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.50 & 0.45 & 0.11 & 0.50 & 0.50 & 0.43 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 283.83 & 249.88 & 277.53 & 267.99 & 221.19 & 12.02 & 61.98 & 0.52 & 285.86 & 314.39 & 40.88 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp, platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.60 & 1.54 & 1.60 & 1.53 & 1.48 & 0.74 & 1.03 & 0.41 & 1.61 & 1.62 & 0.98 \\
\hline d, Delay for Lane Group [s/veh] & 330.84 & 286.31 & 313.96 & 322.49 & 265.10 & 52.09 & 112.49 & 33.52 & 327.48 & 369.89 & 87.26 \\
\hline Lane Group LOS & F & F & F & F & F & D & F & C & F & F & F \\
\hline Critical Lane Group & No & No & Yes & Yes & No & No & No & No & Yes & Yes & No \\
\hline 50th-Percentile Queue Length [veh] & 37.03 & 63.34 & 65.76 & 15.17 & 38.24 & 8.45 & 11.93 & 4.93 & 47.40 & 14.14 & 13.82 \\
\hline 50th-Percentile Queue Length [ft] & 925.82 & 1583.62 & 1643.99 & 379.36 & 955.88 & 211.20 & 298.13 & 123.15 & 1185.09 & 353.44 & 345.45 \\
\hline 95th-Percentile Queue Length [veh] & 57.58 & 97.12 & 101.87 & 24.60 & 58.66 & 13.21 & 17.86 & 8.57 & 74.01 & 23.20 & 19.91 \\
\hline 95th-Percentile Queue Length [ft] & 1439.53 & 2428.04 & 2546.68 & 614.90 & 1466.53 & 330.37 & 446.41 & 214.15 & 1850.32 & 579.92 & 497.85 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 330.84 & 298.36 & 313.96 & 322.49 & 265.10 & 52.09 & 112.49 & 33.52 & 327.48 & 369.89 & 87.26 & 87.26 \\
\hline Movement LOS & F & F & F & F & F & D & F & C & F & F & F & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{3}{|c|}{306.73} & \multicolumn{3}{|c|}{238.44} & \multicolumn{3}{|c|}{227.19} & \multicolumn{3}{|c|}{190.86} \\
\hline Approach LOS & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} & \multicolumn{3}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{12}{|c|}{261.17} \\
\hline Intersection LOS & \multicolumn{12}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{12}{|c|}{1.598} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & 3 & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & 5 & 6 & 7 & 8 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


\section*{Intersection Level Of Service Report} Intersection 6: Winchester Road at Benton Road
\begin{tabular}{cccc} 
Control Type: & Signalized & Delay \((\mathrm{sec} / \mathrm{veh}):\) & 176.8 \\
Analysis Method: & HCM 2010 & Level Of Service: & F \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 1.537
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Winchester Road} & \multicolumn{2}{|c|}{Benton Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
\| \Gamma
\]} & \multicolumn{2}{|c|}{\[
711
\]} & \multicolumn{2}{|c|}{775} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 1 & 1 & 0 & 2 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{55.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{|c|}{ Winchester Road } & \multicolumn{2}{c|}{ Benton Road } \\
\hline Base Volume Input [veh/h] & 1546 & 392 & 314 & 1216 & 304 & 451 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 118 & 0 & 178 & 169 & 0 & 143 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Right-Turn on Red Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 1726 & 408 & 505 & 1434 & 316 & 612 \\
\hline Peak Hour Factor & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 & 0.9300 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 464 & 110 & 136 & 385 & 85 & 165 \\
\hline Total Analysis Volume [veh/h] & 1856 & 439 & 543 & 1542 & 340 & 658 \\
\hline Presence of On-Street Parking & No & No & No & No & No & No \\
\hline On-Street Parking Maneuver Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Local Bus Stopping Rate [/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline Bicycle Volume [bicycles/h] & & 0 & & & & 0 \\
\hline
\end{tabular}

Version 4.00-03
Intersection Settings
\begin{tabular}{|c|c|}
\hline Located in CBD & Yes \\
\hline Signal Coordination Group & \\
\hline Cycle Length [s] & \\
\hline Coordination Type & - \\
\hline Actuation Type & Time of Day Pattern Isolated \\
\hline Offset [s] & Fully actuated \\
\hline Offset Reference & 0.0 \\
\hline Permissive Mode & LeadGreen \\
\hline Lost time [s] & SingleBand \\
\hline & 12.00 \\
\hline
\end{tabular}

\section*{Phasing \& Timing}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Control Type & Permissive & Permissive & Protected & Permissive & Permissive & Overlap \\
\hline Signal group & 2 & 0 & 1 & 6 & 7 & 4 \\
\hline Auxiliary Signal Groups & & & & & & 4 \\
\hline Lead / Lag & - & - & Lead & - & Lead & - \\
\hline Minimum Green [s] & 7 & 0 & 7 & 7 & 7 & 7 \\
\hline Maximum Green [s] & 30 & 0 & 30 & 30 & 30 & 30 \\
\hline Amber [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline All red [s] & 1.0 & 0.0 & 1.0 & 1.0 & 1.0 & 1.0 \\
\hline Split [s] & 49 & 0 & 31 & 80 & 40 & 40 \\
\hline Vehicle Extension [s] & 3.0 & 0.0 & 3.0 & 3.0 & 3.0 & 3.0 \\
\hline Walk [s] & 5 & 0 & 0 & 5 & 5 & 0 \\
\hline Pedestrian Clearance [s] & 10 & 0 & 0 & 10 & 10 & 0 \\
\hline 11, Start-Up Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline I2, Clearance Lost Time [s] & 2.0 & 0.0 & 2.0 & 2.0 & 2.0 & 2.0 \\
\hline Minimum Recall & No & & No & No & No & No \\
\hline Maximum Recall & No & & No & No & No & No \\
\hline Pedestrian Recall & No & & No & No & No & No \\
\hline Detector Location [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline Detector Length [ft] & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

\section*{Exclusive Pedestrian Phase}
\begin{tabular}{|c|l|}
\hline Pedestrian Signal Group & 0 \\
\hline Pedestrian Walk [s] & 0 \\
\hline Pedestrian Clearance [s] & 0 \\
\hline
\end{tabular}

Version 4.00-03
Lane Group Calculations
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Lane Group & C & R & L & C & L & R \\
\hline L, Total Lost Time per Cycle [s] & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 & 4.00 \\
\hline I1_p, Permitted Start-Up Lost Time [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline I2, Clearance Lost Time [s] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline g_i, Effective Green Time [s] & 45 & 45 & 27 & 76 & 36 & 36 \\
\hline g / C, Green / Cycle & 0.37 & 0.37 & 0.23 & 0.63 & 0.30 & 0.30 \\
\hline (v / s)_i Volume / Saturation Flow Rate & 0.58 & 0.31 & 0.34 & 0.48 & 0.11 & 0.46 \\
\hline s , saturation flow rate [veh/h] & 3192 & 1425 & 1597 & 3192 & 3101 & 1425 \\
\hline c, Capacity [veh/h] & 1196 & 534 & 360 & 2022 & 930 & 427 \\
\hline d1, Uniform Delay [s] & 37.49 & 33.88 & 46.46 & 15.59 & 33.01 & 41.98 \\
\hline k, delay calibration & 0.50 & 0.50 & 0.50 & 0.50 & 0.11 & 0.50 \\
\hline I, Upstream Filtering Factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline d2, Incremental Delay [s] & 252.32 & 13.34 & 243.46 & 2.79 & 0.24 & 254.26 \\
\hline d3, Initial Queue Delay [s] & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 & 0.00 \\
\hline Rp , platoon ratio & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline PF, progression factor & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 & 1.00 \\
\hline
\end{tabular}

Lane Group Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline X, volume / capacity & 1.55 & 0.82 & 1.51 & 0.76 & 0.37 \\
\hline d, Delay for Lane Group [s/veh] & 289.81 & 47.22 & 289.91 & 18.38 & 33.25 & 296.24 \\
\hline Lane Group LOS & F & D & F & B & C & F \\
\hline Critical Lane Group & Yes & No & Yes & No & No \\
\hline 50th-Percentile Queue Length [veh] & 58.01 & 12.64 & 34.44 & 13.01 & 3.93 & 42.67 \\
\hline 50th-Percentile Queue Length [ft] & 1450.14 & 316.12 & 860.96 & 325.25 & 98.36 & 1066.69 \\
\hline 95th-Percentile Queue Length [veh] & 89.44 & 18.48 & 53.16 & 18.93 & 7.08 & 66.17 \\
\hline 95th-Percentile Queue Length [ft] & 2235.94 & 461.91 & 1328.94 & 473.13 & 177.05 & 1654.24 \\
\hline
\end{tabular}

Version 4.00-03
Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline d_M, Delay for Movement [s/veh] & 289.81 & 47.22 & 289.91 & 18.38 & 33.25 & 296.24 \\
\hline Movement LOS & F & D & F & B & C & F \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{243.41} & \multicolumn{2}{|c|}{89.10} & \multicolumn{2}{|c|}{206.64} \\
\hline Approach LOS & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{F} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{176.76} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline Intersection V/C & \multicolumn{6}{|c|}{1.537} \\
\hline
\end{tabular}

Sequence
\begin{tabular}{|c|c|c||c|c||c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Ring 1 & 1 & 2 & - & 4 & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 2 & - & 6 & 7 & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 3 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline Ring 4 & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - & - \\
\hline
\end{tabular}


PLACEWORKS

\section*{Intersection Level Of Service Report} Intersection 7: Pat Road at Pourroy Road
Control Type:
Analysis Method:
Analysis Period:
Two-way stop
HCM 2010
15 minutes
Delay (sec / veh):
86.7
Level Of Service:
Volume to Capacity (v/c):

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pat Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
T
\]} & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} \\
\hline Turning Movement & Left & Right & Thru & Right & Left & Thru \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 1 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Pat Road } & \multicolumn{2}{c|}{ Pourroy Road } & \multicolumn{2}{c|}{ Pourroy Road } \\
\hline Base Volume Input [veh/h] & 2 & 82 & 4 & 1 & 27 & 5 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 8 & 0 & 699 & 13 & 0 & 706 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 10 & 85 & 703 & 14 & 28 & 711 \\
\hline Peak Hour Factor & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 & 0.7340 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 3 & 29 & 239 & 5 & 10 & 242 \\
\hline Total Analysis Volume [veh/h] & 14 & 116 & 958 & 19 & 38 & 969 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Stop & Free & Free \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.23 & 0.38 & 0.01 & 0.00 & 0.05 & 0.01 \\
\hline d_M, Delay for Movement [s/veh] & 86.71 & 39.49 & 0.00 & 0.00 & 10.39 & 0.00 \\
\hline Movement LOS & F & E & A & A & B & A \\
\hline 95th-Percentile Queue Length [veh] & 3.47 & 3.47 & 0.00 & 0.00 & 0.17 & 0.00 \\
\hline 95th-Percentile Queue Length [ft] & 86.71 & 86.71 & 0.00 & 0.00 & 4.26 & 0.00 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{44.57} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.39} \\
\hline Approach LOS & \multicolumn{2}{|c|}{E} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{2.93} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

Intersection 8: Jean Nicholas Road at Elliot Road
\begin{tabular}{cccc} 
Control Type: & Two-way stop & Delay (sec / veh): & 25.4 \\
Analysis Method: & HCM 2010 & Level Of Service: & D \\
Analysis Period: & 15 minutes & Volume to Capacity \((\mathrm{v} / \mathrm{c}):\) & 0.195
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|l|}{Jean Nicholas Road} & \multicolumn{2}{|c|}{Elliot Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
F
\]} & \multicolumn{2}{|c|}{\[
71
\]} & \multicolumn{2}{|c|}{\(T\)} \\
\hline Turning Movement & Thru & Right & Left & Thru & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{|c|}{ Jean Nicholas Road } & \multicolumn{2}{c|}{ Elliot Road } \\
\hline Base Volume Input [veh/h] & 157 & 33 & 40 & 110 & 37 & 122 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 171 & 1 & 4 & 137 & 2 & 5 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 334 & 35 & 46 & 251 & 40 & 132 \\
\hline Peak Hour Factor & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 & 0.7400 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 113 & 12 & 16 & 85 & 14 & 45 \\
\hline Total Analysis Volume [veh/h] & 451 & 47 & 62 & 339 & 54 & 178 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & \\
\hline
\end{tabular}

PLACEWORKS
Version 4.00-03

\section*{Intersection Settings}
\begin{tabular}{|c|c|c|c|}
\hline Priority Scheme & Free & Free & Stop \\
\hline Flared Lane & No & No & No \\
\hline Storage Area [veh] & 0 & 0 & 0 \\
\hline Two-Stage Gap Acceptance & No & No & \\
\hline Number of Storage Spaces in Median & 0 & 0 & No \\
\hline
\end{tabular}

Movement, Approach, \& Intersection Results
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline V/C, Movement V/C Ratio & 0.00 & 0.00 & 0.06 & 0.00 & 0.20 & 0.30 \\
\hline d_M, Delay for Movement [s/veh] & 0.00 & 0.00 & 8.59 & 0.00 & 25.40 & 18.48 \\
\hline Movement LOS & A & A & A & A & D & C \\
\hline 95th-Percentile Queue Length [veh] & 0.00 & 0.00 & 0.18 & 0.00 & 2.71 & 2.71 \\
\hline 95th-Percentile Queue Length [ft] & 0.00 & 0.00 & 4.62 & 0.00 & 67.82 & 67.82 \\
\hline d_A, Approach Delay [s/veh] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{1.33} & \multicolumn{2}{|c|}{20.09} \\
\hline Approach LOS & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{A} & \multicolumn{2}{|c|}{C} \\
\hline d_I, Intersection Delay [s/veh] & \multicolumn{6}{|c|}{4.59} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{D} \\
\hline
\end{tabular}

\title{
Intersection Level Of Service Report Intersection 9: Pourroy Road at Skyview Road
}
\begin{tabular}{ccc} 
Control Type: & All-way stop & Delay (sec /veh): \\
Analysis Method: & HCM 2010 & Level Of Service: \\
Analysis Period: & 15 minutes &
\end{tabular}

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Pourroy Road} & \multicolumn{2}{|c|}{Skyview Road} \\
\hline Approach & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Eastbound} \\
\hline Lane Configuration & \multicolumn{2}{|c|}{\[
7 \|
\]} & \multicolumn{2}{|c|}{} & \multicolumn{2}{|c|}{\[
\leftrightarrows \Gamma
\]} \\
\hline Turning Movement & Left & Thru & Thru & Right & Left & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{45.00} & \multicolumn{2}{|c|}{30.00} \\
\hline Grade [\%] & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} & \multicolumn{2}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{2}{|c|}{Yes} & \multicolumn{2}{|c|}{No} & \multicolumn{2}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Name & & & & & & \\
\hline Base Volume Input [veh/h] & 56 & 182 & 128 & 83 & 102 & 82 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 0 & 274 & 343 & 86 & 68 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 58 & 463 & 476 & 172 & 174 & 85 \\
\hline Peak Hour Factor & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 & 0.6710 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 22 & 173 & 177 & 64 & 65 & 32 \\
\hline Total Analysis Volume [veh/h] & 86 & 690 & 709 & 256 & 259 & 127 \\
\hline Pedestrian Volume [ped/h] & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} & \multicolumn{2}{|c|}{0} \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{l} 
Intersection Settings \\
Lanes \\
\hline
\end{tabular}

\section*{Movement, Approach, \& Intersection Results}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline 95th-Percentile Queue Length [veh] & 0.81 & 7.59 & 7.59 & 17.90 & 16.39 & 5.50 & 1.33 \\
\hline 95th-Percentile Queue Length [ft] & 20.29 & 189.87 & 189.87 & 447.56 & 409.72 & 137.43 & 33.16 \\
\hline Approach Delay [s/veh] & \multicolumn{3}{|c|}{37.22} & \multicolumn{2}{|c|}{109.58} & \multicolumn{2}{|c|}{28.96} \\
\hline Approach LOS & \multicolumn{3}{|c|}{E} & \multicolumn{2}{|c|}{F} & \multicolumn{2}{|c|}{D} \\
\hline Intersection Delay [s/veh] & \multicolumn{7}{|c|}{68.55} \\
\hline Intersection LOS & \multicolumn{7}{|c|}{F} \\
\hline
\end{tabular}

\section*{Intersection Level Of Service Report}

\section*{Intersection 10: Pourroy Road at Thompson Road}
Control Type:
Analysis Method:
Analysis Period:

All-way stop
HCM 2010
15 minutes

Delay (sec / veh):
Level Of Service:
85.1

F

Intersection Setup
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Pourroy Road} & \multicolumn{3}{|c|}{Thompson Road} & \multicolumn{3}{|c|}{Thompson Road} \\
\hline Approach & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} \\
\hline Lane Configuration & \multicolumn{3}{|c|}{\[
\ddagger
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} & \multicolumn{3}{|c|}{\[
\dagger
\]} & \multicolumn{3}{|c|}{\[
\uparrow
\]} \\
\hline Turning Movement & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right \\
\hline Lane Width [ft] & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 & 12.00 \\
\hline No. of Lanes in Pocket & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 \\
\hline Pocket Length [ft] & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 & 100.00 \\
\hline Speed [mph] & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} & \multicolumn{3}{|c|}{45.00} \\
\hline Grade [\%] & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} & \multicolumn{3}{|c|}{0.00} \\
\hline Crosswalk & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} & \multicolumn{3}{|c|}{Yes} \\
\hline
\end{tabular}

\section*{Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Name & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Pourroy Road } & \multicolumn{3}{|c|}{ Thompson Road } & \multicolumn{3}{c|}{ Thompson Road } \\
\hline Base Volume Input [veh/h] & 134 & 246 & 7 & 3 & 177 & 56 & 77 & 4 & 97 & 5 & 3 & 1 \\
\hline Base Volume Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Heavy Vehicles Percentage [\%] & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 & 2.00 \\
\hline Growth Rate & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 & 1.04 \\
\hline In-Process Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips [veh/h] & 2 & 137 & 0 & 0 & 172 & 89 & 72 & 0 & 2 & 0 & 0 & 0 \\
\hline Diverted Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Pass-by Trips [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Existing Site Adjustment Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Other Volume [veh/h] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Total Hourly Volume [veh/h] & 141 & 39 & 7 & 3 & 356 & 147 & 152 & 4 & 103 & 5 & 3 & 1 \\
\hline Peak Hour Factor & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 & 0.8320 \\
\hline Other Adjustment Factor & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 & 1.0000 \\
\hline Total 15-Minute Volume [veh/h] & 42 & 118 & 2 & 1 & 107 & 44 & 46 & 1 & 31 & 2 & 1 & 0 \\
\hline Total Analysis Volume [veh/h] & 169 & 472 & 8 & 4 & 428 & 177 & 183 & 5 & 124 & 6 & 4 & 1 \\
\hline Pedestrian Volume [ped/h] & & 0 & & & 0 & & & 0 & & & 0 & \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|l|}{Intersection Settings} \\
\hline \multicolumn{7}{|l|}{Lanes} \\
\hline \multicolumn{7}{|l|}{Movement, Approach, \& Intersection Results} \\
\hline 95th-Percentile Queue Length [veh] & 23.02 & 17.88 & 2.01 & 0.03 & 0.93 & 0.08 \\
\hline 95th-Percentile Queue Length [ft] & 575.50 & 446.97 & 50.16 & 0.81 & 23.27 & 2.05 \\
\hline Approach Delay [s/veh] & 122.07 & 83.11 & & 14.59 & & 11.97 \\
\hline Approach LOS & F & F & & B & & B \\
\hline Intersection Delay [s/veh] & \multicolumn{6}{|c|}{85.09} \\
\hline Intersection LOS & \multicolumn{6}{|c|}{F} \\
\hline
\end{tabular}

Version 4.00-03
Traffic Volume - Future Total Volume


Winchester Road at Keller Ro Winchester Road at Pourroy Winchester Road at Whisper Winchester Road at Jean Nic


Winchester Road at Max Gilli Winchester Road at Benton


Version 4.00-03
Traffic Volume - Future Total Volume


Pourroy Road at Skyview Ro Pourroy Road at Thompson


\section*{Appendix I. Fair Share Calculations}

\section*{Fair Share Volumes}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 1: Winchester Road at Keller Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0 & 24 & 12 & 0 & 30 & 0 & 0 & 0 & 0 & 15 & 0 & 0 & 81 \\
\hline 2: Riverside \#1 & 0 & 1 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2 \\
\hline 3: Riverside \#2 & 0 & 34 & 0 & 0 & 42 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 76 \\
\hline 4: Riverside \#3 & 323 & 0 & 0 & 0 & 0 & 8 & 2 & 11 & 98 & 0 & 38 & 0 & 480 \\
\hline 5: Murrieta \#1 & 0 & 16 & 0 & 0 & 6 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 22 \\
\hline Site-Generated Trips & 323 & 75 & 12 & 0 & 79 & 8 & 2 & 11 & 98 & 15 & 38 & 0 & \\
\hline Future Total Volume & 324 & 779 & 15 & 0 & 1179 & 11 & 3 & 12 & 102 & 23 & 38 & 3 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 2: Winchester Road at Pourroy Road/Abelia Street} \\
\hline \multirow[t]{2}{*}{Zone ID: Name} & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 165 & 0 & 0 & 0 & 0 & 45 & 36 & 24 & 136 & 0 & 30 & 0 & 436 \\
\hline 2: Riverside \#1 & 0 & 1 & 2 & 0 & 1 & 0 & 0 & 0 & 0 & 2 & 0 & 0 & 6 \\
\hline 3: Riverside \#2 & 294 & 0 & 0 & 0 & 0 & 42 & 34 & 53 & 238 & 0 & 62 & 0 & 723 \\
\hline 4: Riverside \#3 & 0 & 266 & 0 & 19 & 79 & 0 & 0 & 0 & 0 & 0 & 0 & 57 & 421 \\
\hline 5: Murrieta \#1 & 0 & 16 & 0 & 0 & 6 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 22 \\
\hline Site-Generated Trips & 459 & 283 & 2 & 19 & 86 & 87 & 70 & 77 & 374 & 2 & 92 & 57 & \\
\hline Future Total Volume & 484 & 908 & 170 & 91 & 1081 & 144 & 110 & 92 & 406 & 185 & 104 & 117 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0 & 90 & 0 & 61 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 75 & 301 \\
\hline 2: Riverside \#1 & 0 & 3 & 2 & 0 & 3 & 0 & 0 & 0 & 0 & 2 & 0 & 0 & 10 \\
\hline 3: Riverside \#2 & 0 & 189 & 0 & 85 & 153 & 0 & 0 & 0 & 0 & 0 & 0 & 105 & 532 \\
\hline 4: Riverside \#3 & 0 & 171 & 0 & 29 & 50 & 0 & 0 & 0 & 0 & 0 & 0 & 95 & 345 \\
\hline 5: Murrieta \#1 & 0 & 16 & 0 & 0 & 6 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 22 \\
\hline Site-Generated Trips & 0 & 469 & 2 & 175 & 287 & 0 & 0 & 0 & 0 & 2 & 0 & 275 & \\
\hline Future Total Volume & 23 & 1198 & 79 & 223 & 1451 & 12 & 18 & 10 & 12 & 152 & 21 & 354 & \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0 & 90 & 0 & 0 & 75 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 165 \\
\hline 2: Riverside \#1 & 1 & 5 & 0 & 0 & 5 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 12 \\
\hline 3: Riverside \#2 & 0 & 147 & 0 & 0 & 119 & 34 & 42 & 0 & 0 & 0 & 0 & 0 & 342 \\
\hline 4: Riverside \#3 & 0 & 133 & 0 & 0 & 39 & 11 & 38 & 0 & 0 & 0 & 0 & 0 & 221 \\
\hline 5: Murrieta \#1 & 0 & 16 & 0 & 0 & 6 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 22 \\
\hline Site-Generated Trips & 1 & 391 & 0 & 0 & 244 & 45 & 80 & 0 & 1 & 0 & 0 & 0 & \\
\hline Future Total Volume & 90 & 1078 & 4 & 6 & 1532 & 139 & 139 & 4 & 126 & 3 & 4 & 6 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0 & 45 & 0 & 24 & 39 & 12 & 15 & 0 & 0 & 0 & 0 & 30 & 165 \\
\hline 2: Riverside \#1 & 3 & 0 & 0 & 0 & 0 & 6 & 6 & 3 & 3 & 0 & 3 & 0 & 24 \\
\hline 3: Riverside \#2 & 0 & 63 & 0 & 34 & 51 & 34 & 42 & 0 & 0 & 0 & 0 & 42 & 266 \\
\hline 4: Riverside \#3 & 0 & 57 & 0 & 11 & 17 & 11 & 38 & 0 & 0 & 0 & 0 & 38 & 172 \\
\hline 5: Murrieta \#1 & 56 & 16 & 0 & 0 & 6 & 0 & 0 & 0 & 19 & 0 & 0 & 0 & 97 \\
\hline Site-Generated Trips & 59 & 181 & 0 & 69 & 113 & 63 & 101 & 3 & 22 & 0 & 3 & 110 & \\
\hline Future Total Volume & 432 & 861 & 99 & 91 & 1439 & 153 & 170 & 126 & 578 & 217 & 245 & 128 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{9}{|c|}{ Intersection 6: Winchester Road at Benton Road } \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{ Northbound } & \multicolumn{2}{|c|}{ Southbound } & \multicolumn{2}{c|}{ Westbound } & Total \\
\hline & Thru & Right & Left & Thru & Left & Right & \\
\hline 1: TVCS & 15 & 0 & 27 & 12 & 0 & 30 & 84 \\
\hline 2: Riverside \#1 & 1 & 0 & 2 & 1 & 0 & 2 & 6 \\
\hline 3: Riverside \#2 & 21 & 0 & 34 & 17 & 0 & 42 & 114 \\
\hline 4: Riverside \#3 & 19 & 0 & 11 & 6 & 0 & 38 & 74 \\
\hline 5: Murrieta \#1 & 72 & 0 & 0 & 25 & 0 & 0 & 97 \\
\hline Site-Generated Trips & 128 & 0 & 74 & 61 & 0 & 112 & \\
\hline Future Total Volume & 1043 & 225 & 397 & 1825 & 389 & 365 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|c|}{Intersection 7: Pat Road at Pourroy Road} \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Right & Thru & Right & Left & Thru & \\
\hline 1: TVCS & 60 & 0 & 196 & 47 & 0 & 240 & 543 \\
\hline 2: Riverside \#1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline 3: Riverside \#2 & 0 & 0 & 325 & 0 & 0 & 398 & 723 \\
\hline 4: Riverside \#3 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline 5: Murrieta \#1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips & 60 & 0 & 521 & 47 & 0 & 638 & \\
\hline Future Total Volume & 62 & 82 & 525 & 50 & 92 & 641 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|c|}{Intersection 8: Jean Nicholas Road at Elliot Road} \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} & Total \\
\hline & Thru & Right & Left & Thru & Left & Right & \\
\hline 1: TVCS & 0 & 9 & 24 & 0 & 7 & 19 & 59 \\
\hline 2: Riverside \#1 & 1 & 0 & 0 & 1 & 0 & 0 & 2 \\
\hline 3: Riverside \#2 & 34 & 0 & 0 & 42 & 0 & 0 & 76 \\
\hline 4: Riverside \#3 & 11 & 0 & 0 & 38 & 0 & 0 & 49 \\
\hline 5: Murrieta \#1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips & 46 & 9 & 24 & 81 & 7 & 19 & \\
\hline Future Total Volume & 46 & 9 & 75 & 81 & 7 & 33 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|c|}{ Intersection 9: Pourroy Road at Skyview Road } \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{ Northbound } & \multicolumn{2}{c|}{ Southbound } & \multicolumn{2}{c|}{ Eastbound } & Total \\
\hline & Left & Thru & Thru & Right & Left & Right & \\
\hline 1: TVCS & 0 & 54 & 44 & 12 & 15 & 0 & 125 \\
\hline 2: Riverside \#1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline 3: Riverside \#2 & 0 & 84 & 68 & 17 & 21 & 0 & 190 \\
\hline 4: Riverside \#3 & 0 & 76 & 23 & 6 & 19 & 0 & 124 \\
\hline 5: Murrieta \#1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips & 0 & 214 & 135 & 35 & 55 & 0 & \\
\hline Future Total Volume & 80 & 333 & 288 & 135 & 173 & 98 & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 10: Pourroy Road at Thompson Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0 & 24 & 0 & 0 & 19 & 10 & 12 & 0 & 0 & 0 & 0 & 0 & 65 \\
\hline 2: Riverside \#1 & 1 & 0 & 0 & 0 & 0 & 1 & 1 & 0 & 1 & 0 & 0 & 0 & 4 \\
\hline 3: Riverside \#2 & 0 & 42 & 0 & 0 & 34 & 17 & 21 & 0 & 0 & 0 & 0 & 0 & 114 \\
\hline 4: Riverside \#3 & 0 & 38 & 0 & 0 & 11 & 6 & 19 & 0 & 0 & 0 & 0 & 0 & 74 \\
\hline 5: Murrieta \#1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline Site-Generated Trips & 1 & 104 & 0 & 0 & 64 & 34 & 53 & 0 & 1 & 0 & 0 & 0 & \\
\hline Future Total Volume & 120 & 277 & 0 & 1 & 318 & 100 & 99 & 3 & 116 & 6 & 7 & 0 & \\
\hline
\end{tabular}

Vistro File: Q:I....tvcs1.vistro
Report File: Q:I...lfair share and mitigation.pdf

Scenario 7: \(E+A+P+C A M\)
11/11/2016

Fair Share \% of Net New Site
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 1: Winchester Road at Keller Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 32\% & 100\% & 0\% & 37.97\% & 0\% & 0\% & 0\% & 0\% & 100\% & 0\% & 0\% & 12.25\% \\
\hline 2: Riverside \#1 & 0\% & 1.33\% & 0\% & 0\% & 1.27\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0.3\% \\
\hline 3: Riverside \#2 & 0\% & 45.33\% & 0\% & 0\% & 53.16\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 11.5\% \\
\hline 4: Riverside \#3 & 100\% & 0\% & 0\% & 0\% & 0\% & 100\% & 100\% & 100\% & 100\% & 0\% & 100\% & 0\% & 72.62\% \\
\hline 5: Murrieta \#1 & 0\% & 21.33\% & 0\% & 0\% & 7.59\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 3.33\% \\
\hline Total & 100\% & 100\% & 100\% & 0\% & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & 0\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 2: Winchester Road at Pourroy Road/Abelia Street} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 35.95\% & 0\% & 0\% & 0\% & 0\% & 51.72\% & 51.43\% & 31.17\% & 36.36\% & 0\% & 32.61\% & 0\% & 27.11\% \\
\hline 2: Riverside \#1 & 0\% & 0.35\% & 100\% & 0\% & 1.16\% & 0\% & 0\% & 0\% & 0\% & 100\% & 0\% & 0\% & 0.37\% \\
\hline 3: Riverside \#2 & 64.05\% & 0\% & 0\% & 0\% & 0\% & 48.28\% & 48.57\% & 68.83\% & 63.64\% & 0\% & 67.39\% & 0\% & 44.96\% \\
\hline 4: Riverside \#3 & 0\% & 93.99\% & 0\% & 100\% & 91.86\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 100\% & 26.18\% \\
\hline 5: Murrieta \#1 & 0\% & 5.65\% & 0\% & 0\% & 6.98\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 1.37\% \\
\hline Total & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 19.19\% & 0\% & 34.86\% & 26.13\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 27.27\% & 24.88\% \\
\hline 2: Riverside \#1 & 0\% & 0.64\% & 100\% & 0\% & 1.05\% & 0\% & 0\% & 0\% & 0\% & 100\% & 0\% & 0\% & 0.83\% \\
\hline 3: Riverside \#2 & 0\% & 40.3\% & 0\% & 48.57\% & 53.31\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 38.18\% & 43.97\% \\
\hline 4: Riverside \#3 & 0\% & 36.46\% & 0\% & 16.57\% & 17.42\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 34.55\% & 28.51\% \\
\hline 5: Murrieta \#1 & 0\% & 3.41\% & 0\% & 0\% & 2.09\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 1.82\% \\
\hline Total & 0\% & 100\% & 100\% & 100\% & 100\% & 0\% & 0\% & 0\% & 0\% & 100\% & 0\% & 100\% & \\
\hline
\end{tabular}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 23.02\% & 0\% & 0\% & 30.74\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 21.66\% \\
\hline 2: Riverside \#1 & 100\% & 1.28\% & 0\% & 0\% & 2.05\% & 0\% & 0\% & 0\% & 100\% & 0\% & 0\% & 0\% & 1.58\% \\
\hline 3: Riverside \#2 & 0\% & 37.6\% & 0\% & 0\% & 48.77\% & 75.56\% & 52.5\% & 0\% & 0\% & 0\% & 0\% & 0\% & 44.88\% \\
\hline 4: Riverside \#3 & 0\% & 34.02\% & 0\% & 0\% & 15.98\% & 24.44\% & 47.5\% & 0\% & 0\% & 0\% & 0\% & 0\% & 29\% \\
\hline 5: Murrieta \#1 & 0\% & 4.09\% & 0\% & 0\% & 2.46\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 2.89\% \\
\hline Total & 100\% & 100\% & 0\% & 0\% & 100\% & 100\% & 100\% & 0\% & 100\% & 0\% & 0\% & 0\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 24.86\% & 0\% & 34.78\% & 34.51\% & 19.05\% & 14.85\% & 0\% & 0\% & 0\% & 0\% & 27.27\% & 22.79\% \\
\hline 2: Riverside \#1 & 5.08\% & 0\% & 0\% & 0\% & 0\% & 9.52\% & 5.94\% & 100\% & 13.64\% & 0\% & 100\% & 0\% & 3.31\% \\
\hline 3: Riverside \#2 & 0\% & 34.81\% & 0\% & 49.28\% & 45.13\% & 53.97\% & 41.58\% & 0\% & 0\% & 0\% & 0\% & 38.18\% & 36.74\% \\
\hline 4: Riverside \#3 & 0\% & 31.49\% & 0\% & 15.94\% & 15.04\% & 17.46\% & 37.62\% & 0\% & 0\% & 0\% & 0\% & 34.55\% & 23.76\% \\
\hline 5: Murrieta \#1 & 94.92\% & 8.84\% & 0\% & 0\% & 5.31\% & 0\% & 0\% & 0\% & 86.36\% & 0\% & 0\% & 0\% & 13.4\% \\
\hline Total & 100\% & 100\% & 0\% & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & 0\% & 100\% & 100\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|c|}{ Intersection 6: Winchester Road at Benton Road } \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{ Northbound } & Right & Left & Thru & Left & Right \\
\hline & Thru & Wouthbound & \\
\hline 1: TVCS & \(11.72 \%\) & \(0 \%\) & \(36.49 \%\) & \(19.67 \%\) & \(0 \%\) & \(26.79 \%\) & \(22.4 \%\) \\
\hline 2: Riverside \#1 & \(0.78 \%\) & \(0 \%\) & \(2.7 \%\) & \(1.64 \%\) & \(0 \%\) & \(1.79 \%\) & \(1.6 \%\) \\
\hline 3: Riverside \#2 & \(16.41 \%\) & \(0 \%\) & \(45.95 \%\) & \(27.87 \%\) & \(0 \%\) & \(37.5 \%\) & \(30.4 \%\) \\
\hline 4: Riverside \#3 & \(14.84 \%\) & \(0 \%\) & \(14.86 \%\) & \(9.84 \%\) & \(0 \%\) & \(33.93 \%\) & \(19.73 \%\) \\
\hline 5: Murrieta \#1 & \(56.25 \%\) & \(0 \%\) & \(0 \%\) & \(40.98 \%\) & \(0 \%\) & \(0 \%\) & \(25.87 \%\) \\
\hline Total & \(100 \%\) & \(0 \%\) & \(100 \%\) & \(100 \%\) & \(0 \%\) & \(100 \%\) & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|c|}{ Intersection 7: Pat Road at Pourroy Road } \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{ Northbound } & \multicolumn{2}{|c|}{ Eastbound } & \multicolumn{2}{|c|}{ Westbound } & Total \\
\hline & Left & Right & Thru & Right & Left & Thru & \\
\hline 1: TVCS & \(100 \%\) & \(0 \%\) & \(37.62 \%\) & \(100 \%\) & \(0 \%\) & \(37.62 \%\) & \(42.89 \%\) \\
\hline 2: Riverside \#1 & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 3: Riverside \#2 & \(0 \%\) & \(0 \%\) & \(62.38 \%\) & \(0 \%\) & \(0 \%\) & \(62.38 \%\) & \(57.11 \%\) \\
\hline 4: Riverside \#3 & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 5: Murrieta \#1 & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline Total & \(100 \%\) & \(0 \%\) & \(100 \%\) & \(100 \%\) & \(0 \%\) & \(100 \%\) & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|c|}{Intersection 8: Jean Nicholas Road at Elliot Road} \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Thru & Right & Left & Thru & Left & Right & \\
\hline 1: TVCS & 0\% & 100\% & 100\% & 0\% & 100\% & 100\% & 31.72\% \\
\hline 2: Riverside \#1 & 2.17\% & 0\% & 0\% & 1.23\% & 0\% & 0\% & 1.07\% \\
\hline 3: Riverside \#2 & 73.91\% & 0\% & 0\% & 51.85\% & 0\% & 0\% & 40.86\% \\
\hline 4: Riverside \#3 & 23.91\% & 0\% & 0\% & 46.91\% & 0\% & 0\% & 26.34\% \\
\hline 5: Murrieta \#1 & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% \\
\hline Total & 100\% & 100\% & 100\% & 100\% & 100\% & 100\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{9}{|c|}{ Intersection 9: Pourroy Road at Skyview Road } \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{ Northbound } & \multicolumn{2}{c|}{ Southbound } & Right & Left & Right \\
\hline & Left & Thru & Thru & Eastbound & \\
\hline 1: TVCS & \(0 \%\) & \(25.23 \%\) & \(32.59 \%\) & \(34.29 \%\) & \(27.27 \%\) & \(0 \%\) & \(28.47 \%\) \\
\hline 2: Riverside \#1 & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 3: Riverside \#2 & \(0 \%\) & \(39.25 \%\) & \(50.37 \%\) & \(48.57 \%\) & \(38.18 \%\) & \(0 \%\) & \(43.28 \%\) \\
\hline 4: Riverside \#3 & \(0 \%\) & \(35.51 \%\) & \(17.04 \%\) & \(17.14 \%\) & \(34.55 \%\) & \(0 \%\) & \(28.25 \%\) \\
\hline 5: Murrieta \#1 & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline Total & \(0 \%\) & \(100 \%\) & \(100 \%\) & \(100 \%\) & \(100 \%\) & \(0 \%\) & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 10: Pourroy Road at Thompson Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 23.08\% & 0\% & 0\% & 29.69\% & 29.41\% & 22.64\% & 0\% & 0\% & 0\% & 0\% & 0\% & 25.29\% \\
\hline 2: Riverside \#1 & 100\% & 0\% & 0\% & 0\% & 0\% & 2.94\% & 1.89\% & 0\% & 100\% & 0\% & 0\% & 0\% & 1.56\% \\
\hline 3: Riverside \#2 & 0\% & 40.38\% & 0\% & 0\% & 53.13\% & 50\% & 39.62\% & 0\% & 0\% & 0\% & 0\% & 0\% & 44.36\% \\
\hline 4: Riverside \#3 & 0\% & 36.54\% & 0\% & 0\% & 17.19\% & 17.65\% & 35.85\% & 0\% & 0\% & 0\% & 0\% & 0\% & 28.8\% \\
\hline 5: Murrieta \#1 & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% \\
\hline Total & 100\% & 100\% & 0\% & 0\% & 100\% & 100\% & 100\% & 0\% & 100\% & 0\% & 0\% & 0\% & \\
\hline
\end{tabular}

Fair Share \% of Future Total
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 1: Winchester Road at Keller Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 3.08\% & 80\% & 0\% & 2.54\% & 0\% & 0\% & 0\% & 0\% & 65.22\% & 0\% & 0\% & 3.25\% \\
\hline 2: Riverside \#1 & 0\% & 0.13\% & 0\% & 0\% & 0.08\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0.08\% \\
\hline 3: Riverside \#2 & 0\% & 4.36\% & 0\% & 0\% & 3.56\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 3.05\% \\
\hline 4: Riverside \#3 & 99.69\% & 0\% & 0\% & 0\% & 0\% & 72.73\% & 66.67\% & 91.67\% & 96.08\% & 0\% & 100\% & 0\% & 19.28\% \\
\hline 5: Murrieta \#1 & 0\% & 2.05\% & 0\% & 0\% & 0.51\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0.88\% \\
\hline Total & 99.69\% & 9.63\% & 80\% & 0\% & 6.7\% & 72.73\% & 66.67\% & 91.67\% & 96.08\% & 65.22\% & 100\% & 0\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 2: Winchester Road at Pourroy Road/Abelia Street} \\
\hline \multirow[t]{2}{*}{Zone ID: Name} & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 34.09\% & 0\% & 0\% & 0\% & 0\% & 31.25\% & 32.73\% & 26.09\% & 33.5\% & 0\% & 28.85\% & 0\% & 11.2\% \\
\hline 2: Riverside \#1 & 0\% & 0.11\% & 1.18\% & 0\% & 0.09\% & 0\% & 0\% & 0\% & 0\% & 1.08\% & 0\% & 0\% & 0.15\% \\
\hline 3: Riverside \#2 & 60.74\% & 0\% & 0\% & 0\% & 0\% & 29.17\% & 30.91\% & 57.61\% & 58.62\% & 0\% & 59.62\% & 0\% & 18.58\% \\
\hline 4: Riverside \#3 & 0\% & 29.3\% & 0\% & 20.88\% & 7.31\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 48.72\% & 10.82\% \\
\hline 5: Murrieta \#1 & 0\% & 1.76\% & 0\% & 0\% & 0.56\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0.57\% \\
\hline Total & 94.83\% & 31.17\% & 1.18\% & 20.88\% & 7.96\% & 60.42\% & 63.64\% & 83.7\% & 92.12\% & 1.08\% & 88.46\% & 48.72\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 3: Winchester Road at Whisper Heights Parkway/Pourroy Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 7.51\% & 0\% & 27.35\% & 5.17\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 21.19\% & 8.47\% \\
\hline 2: Riverside \#1 & 0\% & 0.25\% & 2.53\% & 0\% & 0.21\% & 0\% & 0\% & 0\% & 0\% & 1.32\% & 0\% & 0\% & 0.28\% \\
\hline 3: Riverside \#2 & 0\% & 15.78\% & 0\% & 38.12\% & 10.54\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 29.66\% & 14.97\% \\
\hline 4: Riverside \#3 & 0\% & 14.27\% & 0\% & 13\% & 3.45\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 26.84\% & 9.71\% \\
\hline 5: Murrieta \#1 & 0\% & 1.34\% & 0\% & 0\% & 0.41\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0.62\% \\
\hline Total & 0\% & 39.15\% & 2.53\% & 78.48\% & 19.78\% & 0\% & 0\% & 0\% & 0\% & 1.32\% & 0\% & 77.68\% & \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 4: Winchester Road at Jean Nicholas Road/Skyview Road} \\
\hline Zone ID: Name & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 8.35\% & 0\% & 0\% & 4.9\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 5.27\% \\
\hline 2: Riverside \#1 & 1.11\% & 0.46\% & 0\% & 0\% & 0.33\% & 0\% & 0\% & 0\% & 0.79\% & 0\% & 0\% & 0\% & 0.38\% \\
\hline 3: Riverside \#2 & 0\% & 13.64\% & 0\% & 0\% & 7.77\% & 24.46\% & 30.22\% & 0\% & 0\% & 0\% & 0\% & 0\% & 10.93\% \\
\hline 4: Riverside \#3 & 0\% & 12.34\% & 0\% & 0\% & 2.55\% & 7.91\% & 27.34\% & 0\% & 0\% & 0\% & 0\% & 0\% & 7.06\% \\
\hline 5: Murrieta \#1 & 0\% & 1.48\% & 0\% & 0\% & 0.39\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0.7\% \\
\hline Total & 1.11\% & 36.27\% & 0\% & 0\% & 15.93\% & 32.37\% & 57.55\% & 0\% & 0.79\% & 0\% & 0\% & 0\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 5: Winchester Road at Max Gillis Boulevard/Thompson Road} \\
\hline \multirow[t]{2}{*}{Zone ID: Name} & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 5.23\% & 0\% & 26.37\% & 2.71\% & 7.84\% & 8.82\% & 0\% & 0\% & 0\% & 0\% & 23.44\% & 3.64\% \\
\hline 2: Riverside \#1 & 0.69\% & 0\% & 0\% & 0\% & 0\% & 3.92\% & 3.53\% & 2.38\% & 0.52\% & 0\% & 1.22\% & 0\% & 0.53\% \\
\hline 3: Riverside \#2 & 0\% & 7.32\% & 0\% & 37.36\% & 3.54\% & 22.22\% & 24.71\% & 0\% & 0\% & 0\% & 0\% & 32.81\% & 5.86\% \\
\hline 4: Riverside \#3 & 0\% & 6.62\% & 0\% & 12.09\% & 1.18\% & 7.19\% & 22.35\% & 0\% & 0\% & 0\% & 0\% & 29.69\% & 3.79\% \\
\hline 5: Murrieta \#1 & 12.96\% & 1.86\% & 0\% & 0\% & 0.42\% & 0\% & 0\% & 0\% & 3.29\% & 0\% & 0\% & 0\% & 2.14\% \\
\hline Total & 13.66\% & 21.02\% & 0\% & 75.82\% & 7.85\% & 41.18\% & 59.41\% & 2.38\% & 3.81\% & 0\% & 1.22\% & 85.94\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|c|}{Intersection 6: Winchester Road at Benton Road} \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} & Total \\
\hline & Thru & Right & Left & Thru & Left & Right & \\
\hline 1: TVCS & 1.44\% & 0\% & 6.8\% & 0.66\% & 0\% & 8.22\% & 1.98\% \\
\hline 2: Riverside \#1 & 0.1\% & 0\% & 0.5\% & 0.05\% & 0\% & 0.55\% & 0.14\% \\
\hline 3: Riverside \#2 & 2.01\% & 0\% & 8.56\% & 0.93\% & 0\% & 11.51\% & 2.68\% \\
\hline 4: Riverside \#3 & 1.82\% & 0\% & 2.77\% & 0.33\% & 0\% & 10.41\% & 1.74\% \\
\hline 5: Murrieta \#1 & 6.9\% & 0\% & 0\% & 1.37\% & 0\% & 0\% & 2.28\% \\
\hline Total & 12.27\% & 0\% & 18.64\% & 3.34\% & 0\% & 30.68\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|c|}{Intersection 7: Pat Road at Pourroy Road} \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Eastbound} & \multicolumn{2}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Right & Thru & Right & Left & Thru & \\
\hline 1: TVCS & 96.77\% & 0\% & 37.33\% & 94\% & 0\% & 37.44\% & 37.39\% \\
\hline 2: Riverside \#1 & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% \\
\hline 3: Riverside \#2 & 0\% & 0\% & 61.9\% & 0\% & 0\% & 62.09\% & 49.79\% \\
\hline 4: Riverside \#3 & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% \\
\hline 5: Murrieta \#1 & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% \\
\hline Total & 96.77\% & 0\% & 99.24\% & 94\% & 0\% & 99.53\% & \\
\hline
\end{tabular}

Generated with PTV VISTRO
Version 4.00-03
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|c|}{Intersection 8: Jean Nicholas Road at Elliot Road} \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{Northbound} & \multicolumn{2}{|c|}{Southbound} & \multicolumn{2}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Thru & Right & Left & Thru & Left & Right & \\
\hline 1: TVCS & 0\% & 100\% & 32\% & 0\% & 100\% & 57.58\% & 23.51\% \\
\hline 2: Riverside \#1 & 2.17\% & 0\% & 0\% & 1.23\% & 0\% & 0\% & 0.79\% \\
\hline 3: Riverside \#2 & 73.91\% & 0\% & 0\% & 51.85\% & 0\% & 0\% & 30.28\% \\
\hline 4: Riverside \#3 & 23.91\% & 0\% & 0\% & 46.91\% & 0\% & 0\% & 19.52\% \\
\hline 5: Murrieta \#1 & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% \\
\hline Total & 100\% & 100\% & 32\% & 100\% & 100\% & 57.58\% & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|c|}{ Intersection 9: Pourroy Road at Skyview Road } \\
\hline Zone ID: Name & \multicolumn{2}{|c|}{ Northbound } & \multicolumn{2}{|c|}{ Southbound } & Right & Left & Rastbound \\
\hline & Left & Thru & Thru & Rotal \\
\hline 1: TVCS & \(0 \%\) & \(16.22 \%\) & \(15.28 \%\) & \(8.89 \%\) & \(8.67 \%\) & \(0 \%\) & \(11.29 \%\) \\
\hline 2: Riverside \#1 & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 3: Riverside \#2 & \(0 \%\) & \(25.23 \%\) & \(23.61 \%\) & \(12.59 \%\) & \(12.14 \%\) & \(0 \%\) & \(17.16 \%\) \\
\hline 4: Riverside \#3 & \(0 \%\) & \(22.82 \%\) & \(7.99 \%\) & \(4.44 \%\) & \(10.98 \%\) & \(0 \%\) & \(11.2 \%\) \\
\hline 5: Murrieta \#1 & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline Total & \(0 \%\) & \(64.26 \%\) & \(46.88 \%\) & \(25.93 \%\) & \(31.79 \%\) & \(0 \%\) & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Intersection 10: Pourroy Road at Thompson Road} \\
\hline \multirow[t]{2}{*}{Zone ID: Name} & \multicolumn{3}{|c|}{Northbound} & \multicolumn{3}{|c|}{Southbound} & \multicolumn{3}{|c|}{Eastbound} & \multicolumn{3}{|c|}{Westbound} & \multirow[t]{2}{*}{Total} \\
\hline & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & Left & Thru & Right & \\
\hline 1: TVCS & 0\% & 8.66\% & 0\% & 0\% & 5.97\% & 10\% & 12.12\% & 0\% & 0\% & 0\% & 0\% & 0\% & 6.21\% \\
\hline 2: Riverside \#1 & 0.83\% & 0\% & 0\% & 0\% & 0\% & 1\% & 1.01\% & 0\% & 0.86\% & 0\% & 0\% & 0\% & 0.38\% \\
\hline 3: Riverside \#2 & 0\% & 15.16\% & 0\% & 0\% & 10.69\% & 17\% & 21.21\% & 0\% & 0\% & 0\% & 0\% & 0\% & 10.89\% \\
\hline 4: Riverside \#3 & 0\% & 13.72\% & 0\% & 0\% & 3.46\% & 6\% & 19.19\% & 0\% & 0\% & 0\% & 0\% & 0\% & 7.07\% \\
\hline 5: Murrieta \#1 & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% & 0\% \\
\hline Total & 0.83\% & 37.55\% & 0\% & 0\% & 20.13\% & 34\% & 53.54\% & 0\% & 0.86\% & 0\% & 0\% & 0\% & \\
\hline
\end{tabular}

\section*{Generated with \\ PTV VISTRO}

Version 4.00-03
Signal Warrants Report For Intersection 7: Pat Road at Pourroy Road

Warrants Summary
\begin{tabular}{|c|c|c|}
\hline Warrant & Name & Met? \\
\hline\(\# 1\) & Eight Hour Vehicular Volume & No \\
\hline\(\# 2\) & Four Hour Vehicular Volume & Yes \\
\hline\(\# 3\) & Peak Hour & Yes \\
\hline
\end{tabular}

\section*{Intersection Warrants Parameters}
\begin{tabular}{|c|c|}
\hline Major Approaches & E, W \\
\hline Minor Approaches & S \\
\hline Speed \(>40 \mathrm{mph}\) & No \\
\hline Population \(<10,000\) & No \\
\hline Warrant Factor & \(100 \%\) \\
\hline
\end{tabular}

Warrant Analysis Traffic Volumes
\begin{tabular}{|c|c|c|c|}
\hline Hour & \multicolumn{2}{|c|}{Major Streets} & Minor Streets \\
\hline & E & W & S \\
\hline 1 & 15 & 12 & 3 \\
\hline 2 & 15 & 12 & 3 \\
\hline 3 & 22 & 17 & 4 \\
\hline 4 & 22 & 17 & 4 \\
\hline 5 & 29 & 23 & 6 \\
\hline 6 & 73 & 58 & 14 \\
\hline 7 & 81 & 63 & 16 \\
\hline 8 & 147 & 115 & 29 \\
\hline 9 & 257 & 201 & 50 \\
\hline 10 & 264 & 207 & 52 \\
\hline 11 & 264 & 207 & 52 \\
\hline 12 & 286 & 224 & 56 \\
\hline 13 & 315 & 247 & 62 \\
\hline 14 & 330 & 259 & 65 \\
\hline 15 & 330 & 259 & 65 \\
\hline 16 & 352 & 276 & 69 \\
\hline 17 & 440 & 345 & 86 \\
\hline 18 & 462 & 362 & 91 \\
\hline 19 & 498 & 391 & 98 \\
\hline 20 & 557 & 437 & 109 \\
\hline 21 & 586 & 460 & 115 \\
\hline 22 & 689 & 541 & 135 \\
\hline 23 & 704 & 552 & 138 \\
\hline 24 & 733 & 575 & 144 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Warrant Analysis by Hour
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Hour & \multicolumn{2}{|l|}{Major Lanes} & \multicolumn{2}{|l|}{Minor Lanes} & \multicolumn{4}{|c|}{Warrant 1 Condition A} & \multicolumn{4}{|c|}{Warrant 1 Condition B} & \multirow[t]{2}{*}{Warrant 2} & \multirow[t]{2}{*}{\[
\begin{array}{|c|}
\hline \text { Warrant 3 } \\
\hline \begin{array}{c}
\text { Condition } \\
\text { B }
\end{array} \\
\hline
\end{array}
\]} \\
\hline & Number & Volume & Number & Volume & 100\% & 80\% & 70\% & 56\% & 100\% & 80\% & 70\% & 56\% & & \\
\hline 1 & 4 & 27 & 1 & 3 & No & No & No & No & No & No & No & No & No & No \\
\hline 2 & 4 & 27 & 1 & 3 & No & No & No & No & No & No & No & No & No & No \\
\hline 3 & 4 & 39 & 1 & 4 & No & No & No & No & No & No & No & No & No & No \\
\hline 4 & 4 & 39 & 1 & 4 & No & No & No & No & No & No & No & No & No & No \\
\hline 5 & 4 & 52 & 1 & 6 & No & No & No & No & No & No & No & No & No & No \\
\hline 6 & 4 & 131 & 1 & 14 & No & No & No & No & No & No & No & No & No & No \\
\hline 7 & 4 & 144 & 1 & 16 & No & No & No & No & No & No & No & No & No & No \\
\hline 8 & 4 & 262 & 1 & 29 & No & No & No & No & No & No & No & No & No & No \\
\hline 9 & 4 & 458 & 1 & 50 & No & No & No & No & No & No & No & No & No & No \\
\hline 10 & 4 & 471 & 1 & 52 & No & No & No & No & No & No & No & No & No & No \\
\hline 11 & 4 & 471 & 1 & 52 & No & No & No & No & No & No & No & No & No & No \\
\hline 12 & 4 & 510 & 1 & 56 & No & No & No & No & No & No & No & Yes & No & No \\
\hline 13 & 4 & 562 & 1 & 62 & No & No & No & No & No & No & No & Yes & No & No \\
\hline 14 & 4 & 589 & 1 & 65 & No & No & No & No & No & No & No & Yes & No & No \\
\hline 15 & 4 & 589 & 1 & 65 & No & No & No & No & No & No & No & Yes & No & No \\
\hline 16 & 4 & 628 & 1 & 69 & No & No & No & No & No & No & No & Yes & No & No \\
\hline 17 & 4 & 785 & 1 & 86 & No & No & No & Yes & No & Yes & Yes & Yes & Yes & No \\
\hline 18 & 4 & 824 & 1 & 91 & No & No & No & Yes & No & Yes & Yes & Yes & Yes & No \\
\hline 19 & 4 & 889 & 1 & 98 & No & No & No & Yes & No & Yes & Yes & Yes & Yes & No \\
\hline 20 & 4 & 994 & 1 & 109 & No & No & Yes & Yes & Yes & Yes & Yes & Yes & Yes & Yes \\
\hline 21 & 4 & 1046 & 1 & 115 & No & No & Yes & Yes & Yes & Yes & Yes & Yes & Yes & Yes \\
\hline 22 & 4 & 1230 & 1 & 135 & No & Yes & Yes & Yes & Yes & Yes & Yes & Yes & Yes & Yes \\
\hline 23 & 4 & 1256 & 1 & 138 & No & Yes & Yes & Yes & Yes & Yes & Yes & Yes & Yes & Yes \\
\hline 24 & 4 & 1308 & 1 & 144 & No & Yes & Yes & Yes & Yes & Yes & Yes & Yes & Yes & Yes \\
\hline Hours Met & & & & & 0 & 3 & 5 & 8 & 5 & 8 & 8 & 13 & 8 & 5 \\
\hline
\end{tabular}

Warrant 3 Condition A
\begin{tabular}{|c|c|}
\hline Orientation & S \\
\hline Total Stopped Delay Per Vehicle on Minor Approach (s) & 331.8 \\
\hline Number of Lanes on Minor Street Approach & 1 \\
\hline VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) & \(13: 16\) \\
\hline Delay Condition Met & Yes \\
\hline Volume on Minor Street Approach During Same Hour & 144 \\
\hline High Minor Volume Condition Met & Yes \\
\hline Total Entering Volume on All Approaches During Same Hour & 1452 \\
\hline Number of Approaches on Intersection & 3 \\
\hline Total Volume Condition Met & Yes \\
\hline Warrant Met for Approach & Yes \\
\hline Warrant Met for Intersection & Yes \\
\hline
\end{tabular}

Version 4.00-03
Signal Warrants Report For Intersection 8: Jean Nicholas Road at Elliot Road

Warrants Summary
\begin{tabular}{|c|c|c|}
\hline Warrant & Name & Met? \\
\hline\(\# 1\) & Eight Hour Vehicular Volume & No \\
\hline\(\# 2\) & Four Hour Vehicular Volume & No \\
\hline\(\# 3\) & Peak Hour & No \\
\hline
\end{tabular}

\section*{Intersection Warrants Parameters}
\begin{tabular}{|c|c|}
\hline Major Approaches & N, S \\
\hline Minor Approaches & E \\
\hline Speed \(>40 \mathrm{mph}\) & No \\
\hline Population \(<10,000\) & No \\
\hline Warrant Factor & \(100 \%\) \\
\hline
\end{tabular}

Warrant Analysis Traffic Volumes
\begin{tabular}{|c|c|c|c|}
\hline Hour & \multicolumn{2}{|c|}{ Major Streets } & Minor Streets \\
\hline & N & S & E \\
\hline 1 & 3 & 1 & 1 \\
\hline 2 & 3 & 1 & 1 \\
\hline 3 & 5 & 2 & 1 \\
\hline 4 & 5 & 2 & 1 \\
\hline 5 & 6 & 2 & 2 \\
\hline 6 & 16 & 6 & 4 \\
\hline 7 & 17 & 6 & 4 \\
\hline 8 & 31 & 11 & 8 \\
\hline 9 & 55 & 19 & 14 \\
\hline 10 & 56 & 20 & 14 \\
\hline 11 & 56 & 20 & 14 \\
\hline 12 & 61 & 21 & 16 \\
\hline 13 & 67 & 24 & 17 \\
\hline 14 & 70 & 25 & 18 \\
\hline 15 & 70 & 25 & 18 \\
\hline 16 & 75 & 26 & 19 \\
\hline 17 & 94 & 33 & 24 \\
\hline 18 & 98 & 35 & 25 \\
\hline 19 & 106 & 37 & 27 \\
\hline 20 & 119 & 42 & 30 \\
\hline 21 & 125 & 44 & 32 \\
\hline 22 & 147 & 52 & 38 \\
\hline 23 & 150 & 53 & 38 \\
\hline 24 & & & 55 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03

\section*{Warrant Analysis by Hour}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Hour & \multicolumn{2}{|l|}{Major Lanes} & \multicolumn{2}{|l|}{Minor Lanes} & \multicolumn{4}{|c|}{Warrant 1 Condition A} & \multicolumn{4}{|c|}{Warrant 1 Condition B} & \multirow[t]{2}{*}{Warrant 2} & \multirow[t]{2}{*}{\begin{tabular}{|c|}
\hline Warrant 3 \\
\hline \begin{tabular}{c} 
Condition \\
B
\end{tabular} \\
\hline
\end{tabular}} \\
\hline & Number & Volume & Number & Volume & 100\% & 80\% & 70\% & 56\% & 100\% & 80\% & 70\% & 56\% & & \\
\hline 1 & 4 & 4 & 1 & 1 & No & No & No & No & No & No & No & No & No & No \\
\hline 2 & 4 & 4 & 1 & 1 & No & No & No & No & No & No & No & No & No & No \\
\hline 3 & 4 & 7 & 1 & 1 & No & No & No & No & No & No & No & No & No & No \\
\hline 4 & 4 & 7 & 1 & 1 & No & No & No & No & No & No & No & No & No & No \\
\hline 5 & 4 & 8 & 1 & 2 & No & No & No & No & No & No & No & No & No & No \\
\hline 6 & 4 & 22 & 1 & 4 & No & No & No & No & No & No & No & No & No & No \\
\hline 7 & 4 & 23 & 1 & 4 & No & No & No & No & No & No & No & No & No & No \\
\hline 8 & 4 & 42 & 1 & 8 & No & No & No & No & No & No & No & No & No & No \\
\hline 9 & 4 & 74 & 1 & 14 & No & No & No & No & No & No & No & No & No & No \\
\hline 10 & 4 & 76 & 1 & 14 & No & No & No & No & No & No & No & No & No & No \\
\hline 11 & 4 & 76 & 1 & 14 & No & No & No & No & No & No & No & No & No & No \\
\hline 12 & 4 & 82 & 1 & 16 & No & No & No & No & No & No & No & No & No & No \\
\hline 13 & 4 & 91 & 1 & 17 & No & No & No & No & No & No & No & No & No & No \\
\hline 14 & 4 & 95 & 1 & 18 & No & No & No & No & No & No & No & No & No & No \\
\hline 15 & 4 & 95 & 1 & 18 & No & No & No & No & No & No & No & No & No & No \\
\hline 16 & 4 & 101 & 1 & 19 & No & No & No & No & No & No & No & No & No & No \\
\hline 17 & 4 & 127 & 1 & 24 & No & No & No & No & No & No & No & No & No & No \\
\hline 18 & 4 & 133 & 1 & 25 & No & No & No & No & No & No & No & No & No & No \\
\hline 19 & 4 & 143 & 1 & 27 & No & No & No & No & No & No & No & No & No & No \\
\hline 20 & 4 & 161 & 1 & 30 & No & No & No & No & No & No & No & No & No & No \\
\hline 21 & 4 & 169 & 1 & 32 & No & No & No & No & No & No & No & No & No & No \\
\hline 22 & 4 & 199 & 1 & 38 & No & No & No & No & No & No & No & No & No & No \\
\hline 23 & 4 & 203 & 1 & 38 & No & No & No & No & No & No & No & No & No & No \\
\hline 24 & 4 & 211 & 1 & 40 & No & No & No & No & No & No & No & No & No & No \\
\hline Hours Met & & & & & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline
\end{tabular}

Warrant 3 Condition A
\begin{tabular}{|c|c|}
\hline Orientation & E \\
\hline Total Stopped Delay Per Vehicle on Minor Approach (s) & 9.3 \\
\hline Number of Lanes on Minor Street Approach & 1 \\
\hline VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) & \(0: 06\) \\
\hline Delay Condition Met & No \\
\hline Volume on Minor Street Approach During Same Hour & 40 \\
\hline High Minor Volume Condition Met & No \\
\hline Total Entering Volume on All Approaches During Same Hour & 251 \\
\hline Number of Approaches on Intersection & 3 \\
\hline Total Volume Condition Met & No \\
\hline Warrant Met for Approach & No \\
\hline Warrant Met for Intersection & No \\
\hline
\end{tabular}

\section*{Generated with \\ PTV VISTRO}

Version 4.00-03
Signal Warrants Report For Intersection 9: Pourroy Road at Skyview Road

Warrants Summary
\begin{tabular}{|c|c|c|}
\hline Warrant & Name & Met? \\
\hline\(\# 1\) & Eight Hour Vehicular Volume & No \\
\hline\(\# 2\) & Four Hour Vehicular Volume & Yes \\
\hline\(\# 3\) & Peak Hour & No \\
\hline
\end{tabular}

\section*{Intersection Warrants Parameters}
\begin{tabular}{|c|c|}
\hline Major Approaches & N, S \\
\hline Minor Approaches & W \\
\hline Speed \(>40 \mathrm{mph}\) & No \\
\hline Population \(<10,000\) & No \\
\hline Warrant Factor & \(100 \%\) \\
\hline
\end{tabular}

Warrant Analysis Traffic Volumes
\begin{tabular}{|c|c|c|c|}
\hline Hour & \multicolumn{2}{|c|}{Major Streets} & Minor Streets \\
\hline & N & S & W \\
\hline 1 & 8 & 8 & 5 \\
\hline 2 & 8 & 8 & 5 \\
\hline 3 & 13 & 12 & 8 \\
\hline 4 & 13 & 12 & 8 \\
\hline 5 & 17 & 17 & 11 \\
\hline 6 & 42 & 41 & 27 \\
\hline 7 & 47 & 45 & 30 \\
\hline 8 & 85 & 83 & 54 \\
\hline 9 & 148 & 145 & 95 \\
\hline 10 & 152 & 149 & 98 \\
\hline 11 & 152 & 149 & 98 \\
\hline 12 & 165 & 161 & 106 \\
\hline 13 & 182 & 178 & 117 \\
\hline 14 & 190 & 186 & 122 \\
\hline 15 & 190 & 186 & 122 \\
\hline 16 & 203 & 198 & 130 \\
\hline 17 & 254 & 248 & 163 \\
\hline 18 & 266 & 260 & 171 \\
\hline 19 & 288 & 281 & 184 \\
\hline 20 & 321 & 314 & 206 \\
\hline 21 & 338 & 330 & 217 \\
\hline 22 & 398 & 388 & 255 \\
\hline 23 & 406 & 396 & 260 \\
\hline 24 & 423 & 413 & 271 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Warrant Analysis by Hour
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Hour & \multicolumn{2}{|l|}{Major Lanes} & \multicolumn{2}{|l|}{Minor Lanes} & \multicolumn{4}{|c|}{Warrant 1 Condition A} & \multicolumn{4}{|c|}{Warrant 1 Condition B} & \multirow[t]{2}{*}{Warrant 2} & \multirow[t]{2}{*}{\begin{tabular}{|c|}
\hline Warrant 3 \\
\hline Condition \\
B
\end{tabular}} \\
\hline & Number & Volume & Number & Volume & 100\% & 80\% & 70\% & 56\% & 100\% & 80\% & 70\% & 56\% & & \\
\hline 1 & 5 & 16 & 2 & 5 & No & No & No & No & No & No & No & No & No & No \\
\hline 2 & 5 & 16 & 2 & 5 & No & No & No & No & No & No & No & No & No & No \\
\hline 3 & 5 & 25 & 2 & 8 & No & No & No & No & No & No & No & No & No & No \\
\hline 4 & 5 & 25 & 2 & 8 & No & No & No & No & No & No & No & No & No & No \\
\hline 5 & 5 & 34 & 2 & 11 & No & No & No & No & No & No & No & No & No & No \\
\hline 6 & 5 & 83 & 2 & 27 & No & No & No & No & No & No & No & No & No & No \\
\hline 7 & 5 & 92 & 2 & 30 & No & No & No & No & No & No & No & No & No & No \\
\hline 8 & 5 & 168 & 2 & 54 & No & No & No & No & No & No & No & No & No & No \\
\hline 9 & 5 & 293 & 2 & 95 & No & No & No & No & No & No & No & No & No & No \\
\hline 10 & 5 & 301 & 2 & 98 & No & No & No & No & No & No & No & No & No & No \\
\hline 11 & 5 & 301 & 2 & 98 & No & No & No & No & No & No & No & No & No & No \\
\hline 12 & 5 & 326 & 2 & 106 & No & No & No & No & No & No & No & No & No & No \\
\hline 13 & 5 & 360 & 2 & 117 & No & No & No & Yes & No & No & No & No & No & No \\
\hline 14 & 5 & 376 & 2 & 122 & No & No & No & Yes & No & No & No & No & No & No \\
\hline 15 & 5 & 376 & 2 & 122 & No & No & No & Yes & No & No & No & No & No & No \\
\hline 16 & 5 & 401 & 2 & 130 & No & No & No & Yes & No & No & No & No & No & No \\
\hline 17 & 5 & 502 & 2 & 163 & No & Yes & Yes & Yes & No & No & No & No & No & No \\
\hline 18 & 5 & 526 & 2 & 171 & No & Yes & Yes & Yes & No & No & No & Yes & No & No \\
\hline 19 & 5 & 569 & 2 & 184 & No & Yes & Yes & Yes & No & No & No & Yes & No & No \\
\hline 20 & 5 & 635 & 2 & 206 & Yes & Yes & Yes & Yes & No & No & Yes & Yes & No & No \\
\hline 21 & 5 & 668 & 2 & 217 & Yes & Yes & Yes & Yes & No & No & Yes & Yes & Yes & No \\
\hline 22 & 5 & 786 & 2 & 255 & Yes & Yes & Yes & Yes & No & Yes & Yes & Yes & Yes & No \\
\hline 23 & 5 & 802 & 2 & 260 & Yes & Yes & Yes & Yes & No & Yes & Yes & Yes & Yes & No \\
\hline 24 & 5 & 836 & 2 & 271 & Yes & Yes & Yes & Yes & No & Yes & Yes & Yes & Yes & No \\
\hline Hours Met & & & & & 5 & 8 & 8 & 12 & 0 & 3 & 5 & 7 & 4 & 0 \\
\hline
\end{tabular}

Warrant 3 Condition A
\begin{tabular}{|c|c|}
\hline Orientation & W \\
\hline Total Stopped Delay Per Vehicle on Minor Approach (s) & 21 \\
\hline Number of Lanes on Minor Street Approach & 2 \\
\hline VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) & \(1: 34\) \\
\hline Delay Condition Met & No \\
\hline Volume on Minor Street Approach During Same Hour & 271 \\
\hline High Minor Volume Condition Met & Yes \\
\hline Total Entering Volume on All Approaches During Same Hour & 1107 \\
\hline Number of Approaches on Intersection & 3 \\
\hline Total Volume Condition Met & Yes \\
\hline Warrant Met for Approach & No \\
\hline Warrant Met for Intersection & No \\
\hline
\end{tabular}

\section*{Generated with \\ PTV VISTRO}

Version 4.00-03
Signal Warrants Report For Intersection 10: Pourroy Road at Thompson Road

Warrants Summary
\begin{tabular}{|c|c|c|}
\hline Warrant & Name & Met? \\
\hline\(\# 1\) & Eight Hour Vehicular Volume & No \\
\hline\(\# 2\) & Four Hour Vehicular Volume & No \\
\hline\(\# 3\) & Peak Hour & No \\
\hline
\end{tabular}

\section*{Intersection Warrants Parameters}
\begin{tabular}{|c|c|}
\hline Major Approaches & N, S \\
\hline Minor Approaches & E, W \\
\hline Speed \(>40 \mathrm{mph}\) & No \\
\hline Population \(<10,000\) & No \\
\hline Warrant Factor & \(100 \%\) \\
\hline
\end{tabular}

Warrant Analysis Traffic Volumes
\begin{tabular}{|c|c|c|c|c|}
\hline Hour & \multicolumn{2}{|c|}{Major Streets} & \multicolumn{2}{|c|}{Minor Streets} \\
\hline & N & S & E & W \\
\hline 1 & 8 & 8 & 0 & 4 \\
\hline 2 & 8 & 8 & 0 & 4 \\
\hline 3 & 13 & 12 & 0 & 7 \\
\hline 4 & 13 & 12 & 0 & 7 \\
\hline 5 & 17 & 16 & 1 & 9 \\
\hline 6 & 42 & 40 & 1 & 22 \\
\hline 7 & 46 & 44 & 1 & 24 \\
\hline 8 & 84 & 79 & 3 & 44 \\
\hline 9 & 147 & 139 & 5 & 76 \\
\hline 10 & 151 & 143 & 5 & 78 \\
\hline 11 & 151 & 143 & 5 & 78 \\
\hline 12 & 163 & 155 & 5 & 85 \\
\hline 13 & 180 & 171 & 6 & 94 \\
\hline 14 & 189 & 179 & 6 & 98 \\
\hline 15 & 189 & 179 & 6 & 98 \\
\hline 16 & 201 & 191 & 6 & 105 \\
\hline 17 & 251 & 238 & 8 & 131 \\
\hline 18 & 264 & 250 & 8 & 137 \\
\hline 19 & 285 & 270 & 9 & 148 \\
\hline 20 & 318 & 302 & 10 & 166 \\
\hline 21 & 335 & 318 & 10 & 174 \\
\hline 22 & 394 & 373 & 12 & 205 \\
\hline 23 & 402 & 381 & 12 & 209 \\
\hline 24 & 419 & 397 & 13 & 218 \\
\hline
\end{tabular}

\section*{Generated with PTV VISTRO}

Version 4.00-03
Warrant Analysis by Hour
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Hour & \multicolumn{2}{|l|}{Major Lanes} & \multicolumn{2}{|l|}{Minor Lanes} & \multicolumn{4}{|c|}{Warrant 1 Condition A} & \multicolumn{4}{|c|}{Warrant 1 Condition B} & \multirow[t]{2}{*}{Warrant 2} & \multirow[t]{2}{*}{\begin{tabular}{|c|}
\hline Warrant 3 \\
\hline Condition \\
B
\end{tabular}} \\
\hline & Number & Volume & Number & Volume & 100\% & 80\% & 70\% & 56\% & 100\% & 80\% & 70\% & 56\% & & \\
\hline 1 & 2 & 16 & 4 & 4 & No & No & No & No & No & No & No & No & No & No \\
\hline 2 & 2 & 16 & 4 & 4 & No & No & No & No & No & No & No & No & No & No \\
\hline 3 & 2 & 25 & 4 & 7 & No & No & No & No & No & No & No & No & No & No \\
\hline 4 & 2 & 25 & 4 & 7 & No & No & No & No & No & No & No & No & No & No \\
\hline 5 & 2 & 33 & 4 & 10 & No & No & No & No & No & No & No & No & No & No \\
\hline 6 & 2 & 82 & 4 & 23 & No & No & No & No & No & No & No & No & No & No \\
\hline 7 & 2 & 90 & 4 & 25 & No & No & No & No & No & No & No & No & No & No \\
\hline 8 & 2 & 163 & 4 & 47 & No & No & No & No & No & No & No & No & No & No \\
\hline 9 & 2 & 286 & 4 & 81 & No & No & No & No & No & No & No & No & No & No \\
\hline 10 & 2 & 294 & 4 & 83 & No & No & No & No & No & No & No & No & No & No \\
\hline 11 & 2 & 294 & 4 & 83 & No & No & No & No & No & No & No & No & No & No \\
\hline 12 & 2 & 318 & 4 & 90 & No & No & No & No & No & No & No & No & No & No \\
\hline 13 & 2 & 351 & 4 & 100 & No & No & No & No & No & No & No & No & No & No \\
\hline 14 & 2 & 368 & 4 & 104 & No & No & No & No & No & No & No & No & No & No \\
\hline 15 & 2 & 368 & 4 & 104 & No & No & No & No & No & No & No & No & No & No \\
\hline 16 & 2 & 392 & 4 & 111 & No & No & No & No & No & No & No & No & No & No \\
\hline 17 & 2 & 489 & 4 & 139 & No & No & No & Yes & No & No & No & No & No & No \\
\hline 18 & 2 & 514 & 4 & 145 & No & No & No & Yes & No & No & No & Yes & No & No \\
\hline 19 & 2 & 555 & 4 & 157 & No & No & Yes & Yes & No & No & No & Yes & No & No \\
\hline 20 & 2 & 620 & 4 & 176 & No & Yes & Yes & Yes & No & No & No & Yes & No & No \\
\hline 21 & 2 & 653 & 4 & 184 & No & Yes & Yes & Yes & No & No & Yes & Yes & No & No \\
\hline 22 & 2 & 767 & 4 & 217 & Yes & Yes & Yes & Yes & No & Yes & Yes & Yes & Yes & No \\
\hline 23 & 2 & 783 & 4 & 221 & Yes & Yes & Yes & Yes & No & Yes & Yes & Yes & Yes & No \\
\hline 24 & 2 & 816 & 4 & 231 & Yes & Yes & Yes & Yes & No & Yes & Yes & Yes & Yes & No \\
\hline Hours Met & & & & & 3 & 5 & 6 & 8 & 0 & 3 & 4 & 7 & 3 & 0 \\
\hline
\end{tabular}

Warrant 3 Condition A
\begin{tabular}{|c|c|c|}
\hline Orientation & E & W \\
\hline Total Stopped Delay Per Vehicle on Minor Approach (s) & 11.8 & 12.4 \\
\hline Number of Lanes on Minor Street Approach & 1 & 3 \\
\hline VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) & \(0: 02\) & \(0: 45\) \\
\hline Delay Condition Met & No & No \\
\hline Volume on Minor Street Approach During Same Hour & 13 & 218 \\
\hline High Minor Volume Condition Met & No & \\
\hline Total Entering Volume on All Approaches During Same Hour & 1047 & Yes \\
\hline Number of Approaches on Intersection & 4 & 1047 \\
\hline Total Volume Condition Met & Yes & 4 \\
\hline Warrant Met for Approach & No & \\
\hline Warrant Met for Intersection & & Yes \\
\hline
\end{tabular}

Version 4.00-03
Fair Share - Fair Share \% of Net New Site - Zone 1: TVCS


Fair Share - Fair Share \% of Net New Site - Zone 1: TVCS


Version 4.00-03
Fair Share - Fair Share \% of Net New Site - Zone 2: Riverside \#1


Version 4.00-03
Fair Share - Fair Share \% of Net New Site - Zone 2: Riverside \#1


Version 4.00-03
Fair Share - Fair Share \% of Net New Site - Zone 3: Riverside \#2


Fair Share - Fair Share \% of Net New Site - Zone 3: Riverside \#2


Version 4.00-03
Fair Share - Fair Share \% of Net New Site - Zone 4: Riverside \#3


Fair Share - Fair Share \% of Net New Site - Zone 4: Riverside \#3


Version 4.00-03
Fair Share - Fair Share \% of Net New Site - Zone 5: Murrieta \#1


Fair Share - Fair Share \% of Net New Site - Zone 5: Murrieta \#1


\section*{Appendix J Signal Warrant Calculations}

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: Existing AM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{cc}
434 \\
Total of Both Approaches (VPH) \(=\) & \\
Number of Apporach Lanes \(=\) & 5
\end{tabular} \\
\hline Minor Street Name: Skyview Road & & \\
\hline & High Volume Approach (VPH) \(=\) & 207 \\
Number of Apporach Lanes \(=\) & 2 \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: Existing AM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{c} 
Total of Both Approaches \((\mathrm{VPH})=\) \\
Number of Apporach Lanes \(=\)
\end{tabular} & \begin{tabular}{c}
588 \\
\hline
\end{tabular} \\
\hline Minor Street Name: Thompson Road & & \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: Existing PM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{cc}
449 \\
& Total of Both Approaches (VPH) \(=\) \\
Number of Apporach Lanes \(=\) & 5
\end{tabular} \\
\hline Minor Street Name: Skyview Road & & \\
\hline & High Volume Approach (VPH) \(=\) & 184 \\
Number of Apporach Lanes \(=\) & 2 \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C} A \mathrm{M}\)
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{cc}
836 \\
Total of Both Approaches (VPH) \(=\) & \\
Number of Apporach Lanes \(=\) & 5
\end{tabular} \\
\hline Minor Street Name: Skyview Road & \\
\hline & High Volume Approach (VPH) \(=\)\begin{tabular}{cc}
271 \\
Number of Apporach Lanes \(=\) & 2 \\
\hline
\end{tabular}
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C} A \mathrm{M}\)
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{c} 
Total of Both Approaches \((\mathrm{VPH})=\) \\
Number of Apporach Lanes \(=\)
\end{tabular} & \begin{tabular}{c}
816 \\
2
\end{tabular} \\
\hline Minor Street Name: Thompson Road & & \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{cc} 
Total of Both Approaches (VPH) \(=\) & 1169 \\
Number of Apporach Lanes \(=\) & 5
\end{tabular} \\
\hline Minor Street Name: Skyview Road & \\
\hline & High Volume Approach (VPH) \(=\) & 259 \\
Number of Apporach Lanes \(=\) & 2 \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{c} 
Total of Both Approaches \((\mathrm{VPH})=\) \\
Number of Apporach Lanes \(=\)
\end{tabular} & 1047 \\
\hline & \\
\hline Minor Street Name: Thompson Road & High Volume Approach (VPH) \(=\) & 259 \\
& Number of Apporach Lanes \(=\) & 4 \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: Existing AM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{cc}
434 \\
Total of Both Approaches (VPH) \(=\) & \\
Number of Apporach Lanes \(=\) & 5
\end{tabular} \\
\hline Minor Street Name: Skyview Road & & \\
\hline & High Volume Approach (VPH) \(=\) & 207 \\
Number of Apporach Lanes \(=\) & 2 \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: Existing AM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{rc}
588 \\
Total of Both Approaches (VPH) \(=\) \\
Number of Apporach Lanes \(=\) & 2
\end{tabular} \\
\hline Minor Street Name: Thompson Road & & \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75
vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: Existing PM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{cc}
449 \\
& Total of Both Approaches (VPH) \(=\) \\
Number of Apporach Lanes \(=\) & 5
\end{tabular} \\
\hline Minor Street Name: Skyview Road & & \\
\hline & High Volume Approach (VPH) \(=\) & 184 \\
Number of Apporach Lanes \(=\) & 2 \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: Existing AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) AM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C} A \mathrm{M}\)
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{cc}
836 \\
Total of Both Approaches (VPH) \(=\) & \\
Number of Apporach Lanes \(=\) & 5
\end{tabular} \\
\hline Minor Street Name: Skyview Road & \\
\hline & High Volume Approach (VPH) \(=\)\begin{tabular}{cc}
271 \\
Number of Apporach Lanes \(=\) & 2 \\
\hline
\end{tabular}
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C} A \mathrm{M}\)
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{c} 
Total of Both Approaches \((\mathrm{VPH})=\) \\
Number of Apporach Lanes \(=\)
\end{tabular} & \begin{tabular}{c}
816 \\
2
\end{tabular} \\
\hline Minor Street Name: Thompson Road & & \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour (70\% Factor)}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{cc} 
Total of Both Approaches (VPH) \(=\) & 1169 \\
Number of Apporach Lanes \(=\) & 5
\end{tabular} \\
\hline Minor Street Name: Skyview Road & \\
\hline & High Volume Approach (VPH) \(=\) & 259 \\
Number of Apporach Lanes \(=\) & 2 \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Warrant 3, Peak Hour}

Traffic Conditions: \(\mathrm{E}+\mathrm{A}+\mathrm{P}+\mathrm{C}\) PM
\begin{tabular}{|lrc|}
\hline Major Street Name: Pourroy Road & \begin{tabular}{c} 
Total of Both Approaches \((\mathrm{VPH})=\) \\
Number of Apporach Lanes \(=\)
\end{tabular} & 1047 \\
\hline & \\
\hline Minor Street Name: Thompson Road & High Volume Approach (VPH) \(=\) & 259 \\
& Number of Apporach Lanes \(=\) & 4 \\
\hline
\end{tabular}

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition
VPH - Vehicles Per Hour

\section*{Appendix}

This page intentionally left blank.```


[^0]:    -     - Project Boundary

[^1]:    1 Forbs are flowering plants lacking woody stems, other than grasses.

[^2]:    2 Separate consultation letters respecting tribal cultural resources were sent by the Riverside County Planning Department.
    3 An isolate is fewer than 3 isolated artifacts; and does not contain enough associated artifacts to form an archaeological site. A pictograph is rock art painted on stone (compare to petroglph, which is carved into stone).
    4 Olivella is a genus of marine snails.

[^3]:    5 The Potential Fossil Yield Classification system is a five-point scale from very low potential to contain paleontological resources (Class 1) to very high potential (Class 5). Riverside County assigns four categories of paleontological sensitivity: High (with two subcategories, High A and High B); Low, and Undetermined.

[^4]:    6 The Irvingtonian and Rancholabrean ages are components of a chronology for fossil North American land mammals. The Irvingtonian Age extend from about 1.8 mybp to $240,000 \mathrm{ybp}$; the Rancholabrean extends from about 240,000 to 11,000 ybp.

[^5]:    7 Water vapor $\left(\mathrm{H}_{2} \mathrm{O}\right)$ is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.
    8 Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of PM emitted from burning fuels. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2014). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.
    9 Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for projectspecific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).
    10 Particulate matter emissions, which include black carbon, are analyzed in Section 3.2, Air Quality. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years (CARB 2016).

[^6]:    11 This threshold is based on a combined threshold of 3,000 MTCO2e for all land use types, proposed by SCAQMD's Working Group based on a survey of the GHG emissions inventory of CEQA projects. Approximately 90 percent of CEQA projects' GHG emissions inventories exceed 3,000 MTCO2e, which is based on a potential threshold approach cited in CAPCOA's white paper, "CEQA and Climate Change."

[^7]:    12 This map—which was prepared in 2009—also shows a Very High Fire Hazard Severity Zone on two parcels about 150 feet north of the west end of the site; however, those two parcels consist of rural residential uses, some ornamental vegetation, and bare land, and the classification does not appear to reflect current conditions.
    ${ }^{13}$ Automatic aid is assistance dispatched automatically by contractual agreement between two communities or fire districts. Mutual aid, by comparison, is arranged case by case.

[^8]:    14 RBF. 2007. Winchester 1800 Specific Plan Land Use Plan.
    http://planning.rctlma.org/Portals/0/splans/sp_document/sp286/sp286_lum.pdf.

[^9]:    Source: County of Riverside General Plan, Chapter 7, Noise Element.
    Note: These are only preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health.

[^10]:    15 California Building Industry Association v. Bay Area Air Quality Management District (2015, 62 Cal. 4th 369).

[^11]:    16 That is, the second line item in the table for Winchester Road, south of Keller Road, shows a predicted future level of 76.5 dBA CNEL. With line-source spreading loss attenuation from the 50 -foot reference distance to the envisioned school buildings, this level would be reduced to approximately 69 dBA CNEL.
    17 "Conditionally acceptable" means that a detailed acoustical study for sound insulation features is needed for county and state design approvals.

[^12]:    18 Per information in the Traffic Impact Analysis for Temecula Valley Charter School prepared by PlaceWorks, 2016, in Appendix H.
    19 Audible increases in general community noise levels usually refer to a change of 3 dB or more since this level has been found to be the threshold of perceptibility in exterior environments.

[^13]:    20 As sound energy travels outward from the source, spreading loss accounts for a 6 dB decrease in noise level. Soft ground and atmospheric absorption effects can decrease this by an additional 1.5 dB .

[^14]:    21 Estimated to be approximately 10 to 20 percent of the overall construction duration.

[^15]:    22 Automatic aid is assistance dispatched automatically by contractual agreement between two communities or fire districts. Mutual aid, by contrast, is arranged case by case.

[^16]:    ${ }^{1}$ Used the trip generation rates of ITE Code 534 Private School (K-8) from the ITE Trip Generation Manual 9 ${ }^{\text {th }}$ Edition.
    ${ }^{2}$ Used the trip generation rates of ITE Code 536 Private School (K-12) from the ITE Trip Generation Manual 9th Edition.

[^17]:    Notes: LOS calculation worksheets included in in the Traffic Impact Analysis included as Appendix H of this Initial Study.

[^18]:    Appendix A. Emission Rate Calculations
    Appendix B. Graphical Representations of Emitting Sources
    Appendix C. Air Dispersion Modeling Output
    Appendix D. Risk Calculation Worksheets

[^19]:    1 Increases in Peak Hourly Traffic based on projected growth rate to 7,212 peak hour trips by 2040 from 2014 Final State Route 79 Realignment Supplemental Traffic Report (Riverside County Transportation Commission), with realignment project approval.

    2 Represents the 25 -year (staff) weighted average traffic volumes, accounting for annual increases in projected traffic.
    3 Represents the 9-year (K-8th grade students) weighted average traffic volumes, accounting for annual increases in projected traffic.
    4 Truck percentage of $10 \%$, from CalTrans (2014), used to represent the diesel vehicle traffic along roadway segment.

[^20]:    *** RECEPTOR TYPES: GC = GRIDCART
    $\mathrm{GC}=$ GRIDCART
    $\mathrm{GP}=\mathrm{GRIDPOLR}$
    $\mathrm{GP}=\mathrm{GRIDPOLR}$
    $\mathrm{DC}=\mathrm{DISCCART}$

[^21]:    Emission Rates, per source, from Source Emissions Inventories (Appendix A).
    ${ }^{2}$ AERMOD Output (Appendix C) at the maximum exposed receptor (MER) are based on unit emission rates for emission sources ( $1 \mathrm{~g} / \mathrm{s}$ per source).

[^22]:    ${ }^{1} \mathrm{PM}_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

[^23]:    2 Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.
    ${ }^{3}$ Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.
    ${ }^{4}$ CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for $\mathrm{PM}_{10}$ to attainment for PM $\mathrm{PM}_{10}$ under the National AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour $\mathrm{PM}_{10}$ standards during the period from 2004 to 2007. In June 2013, the EPA approved the State of California's request to redesignate the $\mathrm{PM}_{10}$ nonattainment area to attainment of the $\mathrm{PM}_{10}$ National AAQS, effective on July 26, 2013.
    ${ }^{5}$ Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon.
    Monitoring conducted between 2004 through 2007 identified that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2012).

[^24]:    ${ }^{6}$ SCAQMD's Air Quality Significance Thresholds are current as of March 2011 and can be found here: http://www.aqmd.gov/ceqa/hdbk.html.

[^25]:    ${ }^{7}$ The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

[^26]:    ${ }^{8}$ Water vapor $\left(\mathrm{H}_{2} \mathrm{O}\right)$ is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop o rather than a primary cause of change.
    ${ }^{9}$ Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter ( PM ) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2014). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

[^27]:    ${ }^{10} \mathrm{CO}_{2}$-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

[^28]:    ${ }^{11}$ CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002-2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

[^29]:    12 The Scoping Plan references a goal for local governments to reduce community GHG emissions by 15 percent from current (interpreted as 2008) levels by 2020 , but it does not rely on local GHG reduction targets established by local governments to meet the state's GHG reduction target of AB 32 .

[^30]:    ${ }^{13}$ SB 350 also sets a goal of increasing energy efficiency in existing buildings by 50 percent by 2030.
    ${ }^{14}$ The green building standards became mandatory in the 2010 edition of the code.

[^31]:    ${ }^{15}$ The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

[^32]:    ${ }^{16}$ It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.
    ${ }^{17}$ SCAQMD took the 2020 statewide GHG reduction target for land use only GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

    18 Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for projectspecific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).
    ${ }_{19}$ Particulate matter emissions, which include black carbon, are analyzed in Section 5.2, Air Quality. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years (CARB 2016c).

