

6. Fuel Modification

The principal goal of the Fuel Modification Program is to protect homes and businesses within the BSA Properties Specific Plan from the hazards of wildfires. The program has been designed to provide a smooth visual transition from the undisturbed natural vegetation to the homeowner's backyard landscape or the business structure. The Fuel Modification Program described here sets out the general concepts and patterns for the BSA Properties Specific Plan area. A Final Fuel Modification Plan shall be approved by the County of Riverside Fire Marshal for any area or buildings adjacent to any natural open space area prior to the approval of the final map for that affected area.

Generally, fuel modification zones are managed strips of land consisting of irrigated zones and dry or thinning zones of varying width depending on local conditions. On natural slopes, existing high fire hazard vegetation is removed and replaced with appropriate plants from the fuel modification plant list. Existing acceptable vegetation is thinned and pruned to reduce fuel load. Manufactured slopes are planted with acceptable plants from the fuel modification plant list. Plants are selected based upon the existing adjacent condition. These plantings will provide a smooth visual transition from the undisturbed natural vegetation to the homeowner's landscape.

a. Fuel Modification Zones

Two Fuel Modification Zones are identified and described by the BSA Properties Fuel Modification Program. The two zones are described as follows:

Fuel Modification Zone 1

Zone 1 is the first 30 feet around a structure (See Figure 31). This landscape zone is usually irrigated and consists of fire resistant irrigated plantings less than 18 inches high. It may contain traditional trees or ornamental shrubs, ground covers, and lawn. Plants in this zone need to be the most fire-resistant, and should not include any pyrophytes that are high in oils and resins, such as pines, eucalyptus, cedar and juniper species. Trees must be planted so that when they reach maturity their branches are at least 10 feet away from any structure.

Thick succulent or leathery leaf species are the most fire resistant, paper-thin leaves and small twiggy branches are the least retardant. Regular maintenance and continued irrigation is most important.

If water for irrigation is limited, use more of the available water in Zone 1 than in Zone 2. Plants with high moisture content are less likely to burn. Non-flammable patios, walkways, rock, and gravel mulch can be used as fuel breaks for these zones.

Fuel Modification Zone 2

Zone 2 is the area 30 to 100 feet away from any structures or to the property line or edge of natural vegetation (See Figure 31). This landscape zone includes single or

small clusters of well trimmed fire resistant native and ornamental trees limbed up to 4-to-6 feet from the ground.

Mulch, chips, and other small multi-cuttings (cut to less than 2 inches in diameter and 4 inches in length) should be evenly spread over the area to prevent grass and weed encroachment within the treated areas. This mulching concept helps to maintain the soil moisture for the designed plants and minimizes any soil erosion. All native grasses or weeds should be mowed or weed-whipped to a 2-inch stubble height.

b. Fuel Modification and Open Space Treatment Areas

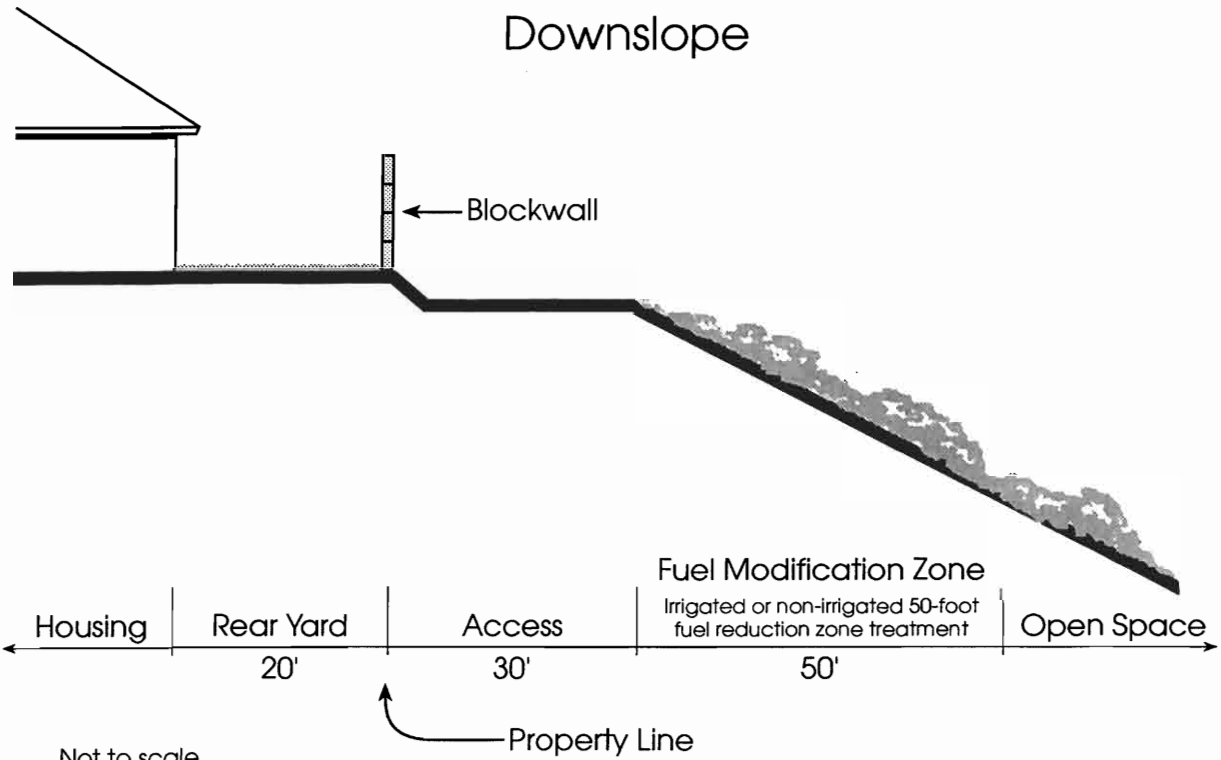
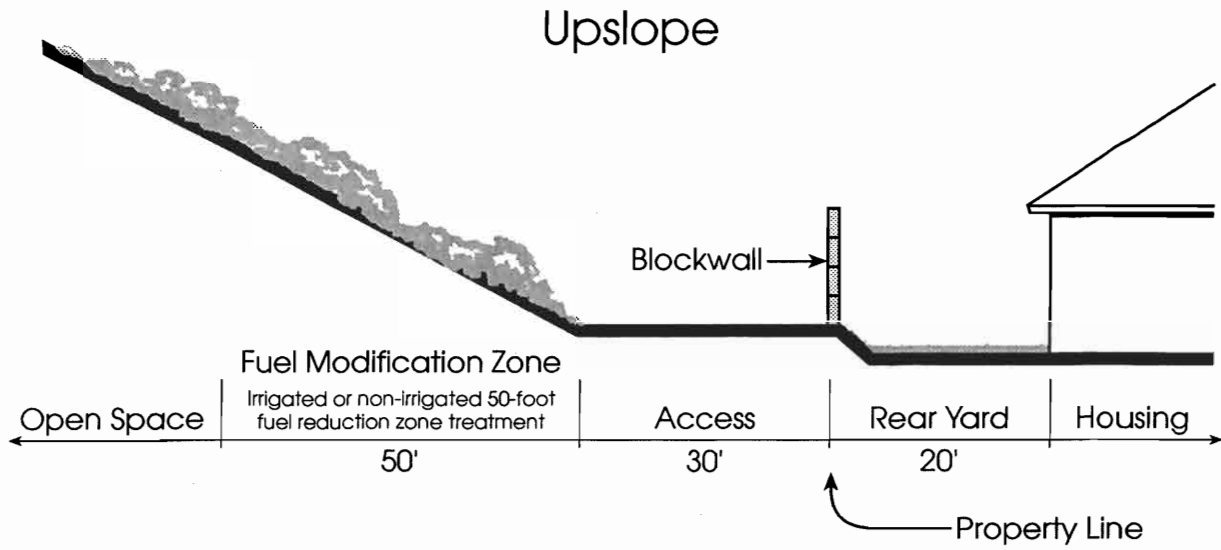
This Fuel Modification Program includes several strategic fuel modification and open space areas that will require an initial fuel modification treatment and continued long-term fuel maintenance responsibility. These 100 feet wide fuel modification areas can be “*firewise*” commercial irrigated landscaping and/or consist of “*firewise*” maintained native vegetative areas.

Prescription for strategic fuel modification treatment and open space areas are very similar to Zone 2 treatment. Fuel modification treatment areas may include single or small clusters of well trimmed (removal of all dead material) fire resistant native and ornamental plants, up to 48-inches high, and well trimmed native or ornamental trees limbed up to 4-to-6 feet from the ground. All native grasses or weeds should be mowed or weed-whipped to a 2-inch stubble height. Mulches, chips, and other small multi-cuttings should be evenly spread over the area to prevent grass and weed encroachment within the treated areas. This mulching concept helps to maintain the soil moisture for the designed plants and minimizes any soil erosion.

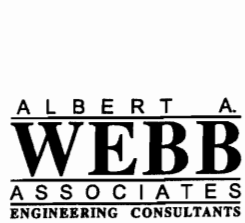
Clusters of native vegetation are acceptable, except they must be separated by a distance of one and one-half times the height of the cluster vegetation and individual clusters should not exceed more than 50-feet in circumference. All dead material should be pruned out of these clusters, chipped or multi-cut, and scattered evenly over the site as mulching material.

c. Fuel Management Guidelines

1. The Fire Department shall review all proposed Fuel Modification Plans and have final approval authority.
2. Once the Fuel Management Zones have been implemented, the modification zones shall be maintained in a consistent condition which shall be subject to review by the County of Riverside, Fire Marshal. A Homeowners’ Association or an acceptable maintenance district shall maintain the Fuel Management Plan.
3. No off-site grading or fuel modification on private property shall occur without the written consent of the property owner.



Not to scale



Fuel Modification Zone X-Section- Figure 31

4. Fuel modification areas will be subject to surveys by the Fire Department and maintenance by the property owner or other appropriate maintenance district shall occur every six months.
5. During the biannual surveys, a determination is to be made as to how much clearing is required to keep vegetation at prescribed levels, and how much of the cleared material is to be removed from the site
6. Unless modified by the County of Riverside Fire Marshal, spring maintenance shall begin no later than May 1st and be completed no later than June 1st, and autumn maintenance shall begin no later than November 1st and be completed no later than December 1st.
7. The County of Riverside, Fire Marshal may supercede the Fuel Modification Standards subject to the review of concerned parties.
8. All fuel modification required to provide adequate fire protection for this project must occur within the development boundaries or such off-site areas shall be acquired in fee title. Site specific exception to this requirement may be considered by the County prior to approval of the master tentative map or parcel map, provided that it can be adequately demonstrated to the satisfaction of the County of Riverside Fire Marshal and Planning Director, that off-site maintenance of these areas is enforceable upon the Owners' Association via assessment liens, or other such taxable or similar mechanisms, and that non-performance will not present a financial impact or maintenance liability to the County of Riverside.
9. Fuel modification areas adjacent to Planning Areas 6 and 8 shall be located on non-open space areas. PA's 6 and 8 shall have their fuel modification areas defined on adjacent property within developed Planning Areas 3, 4, and 13. Fuel Modification shall not impact open space areas in Planning Areas 6 and 8 that have been identified to contain sensitive environmental resources.
10. Fuel modification areas adjacent to Planning Area 7 may include portions of PA 7 as long as the total 100-foot fuel modification zone (from rear of structure) is provided, as approved by the Fire Department.

d. Fuel Modification Planting Palette**PLANTS WITH SOME FIRE-RESISTANCE****TREES****Botanical Name****Common Name**

Arbutus unedo	Strawberry Tree
Certonia siliqua	Carob Tree
Cercis occidentalis	Western Redbud
Cercocarpus betuloides	Mountain Mahogany
Quercus agrifolia	Coast Live Oak
Pistacia chinensis	Chinese Pistache
Rhus lancea	African Sumac

SHRUBS**Botanical Name****Common Name**

Atriplex spp	Saltbush
Berberis spp.	Barberry
Ceanothus spp.	California Lilac
Cistus spp.	Rockrose
Cotoneaster spp.	Cotoneaster
Escallonia spp.	Escallonia
Feijoa sellowiana	Pineapple Guava
Pittosporum spp.	Mock Orange
Prunus ilicifolia	Holly-Leafed Cherry
Prunus lyonii	Catalina Cherry
Punica ganatum	Pomegranite
Pyracantha spp.	Pyracantha
Raphiolepis spp.	India Hawthorn
Rhamnus spp.	Coffee Berry
Rhus integrifolia	Lemonade Berry
Ribes viburnifolium	Evergreen Currant

GROUNDCOVERS

Botanical Name	Common Name
Aloe spp.	Aloe
Arctotheca calendula	Capeweed
Armeria spp.	Sea Pink
Comptosia kirkii	Prostate Mirror Plant
Duchesnea indica	Mock Strawberry
Fesuca rubra	Creeping Red Fescue
Fragaria chiloensis	Wild Strawberry
Gazania spp.	Gazania
Hypericum calycinum	St. John's Wort
Liriope gigantea	Giant Lily Turf
Mahonia repens	Creeping Oregon Grape
Malephora crocea	Ice Plant
Myoporium parvifolium	Myoporium
"Prostratum"	
Phyla nodiflora	Lippia
Rosmarinus officinalis	Dwarf Rosemary
"Prostratus"	

PERENNIALS

Botanical Name	Common Name
Achillea spp.	Yarrow
Agapanthus spp.	Lily of the Nile
Agave spp.	Agave
Aloe spp.	Aloe
Centaurea gymnocarpa	Dusty Miller
Convolvulus cneorum	Bush Morning Glory
Dietes spp.	Fortnight Lily
Diplacus spp.	Monkey Flower
Eschscholzia californica	California Poppy
Geranium spp.	Geranium
Hemerocallis spp.	Daylily
Heuchera maxima	Coral Bells
Iris spp.	Iris
Kniphofia uvaria	Red Hot Poker
Lantana montevidensis	Lantana

PERENNIALS (con't.)**Botanical Name****Common Name**

Lavandula spp.	Lavander
Oenothera berlandieri	Mexican Evening Primrose
Pelargonium peltatum	Ivy Geranium
Penstemon spp.	Penstemon
Romneya coulteri	Matilija Poppy
Salvia spp.	Sage
Santolina spp.	Lavender Cotton
Senecio spp.	Dusty Miller
Trichostema lanatum	Woolly Blue Curly
Tubaghia violacea	Society Garlic
Yucca spp.	Yucca
Zantedeschia aethiopica	Calla Lily

VINES**Botanical Name****Common Name**

Jasminum spp.	Jasmine
Rosa Banksiae	Lady's Banks Rose
Solanum jasminoides	Potato Vine
Tecomaria capensis	Cape Honyssuckle
Trachelospermum jasminoides	Star Jasmine
Wisteria spp.	Wisteria