

Colton Fire Department Fuel Modification Guideline

INTRODUCTION

Proper management of vegetation in areas at risk from wildfires has proven to be a major factor in reducing the chances of structures burning, especially when combined with construction techniques designed to further protect a home from approaching flames and burning embers. Over the past 30 years these approaches have contributed to saving hundreds of structures during major wildfires in Southern California.

California state-wide law requires that landowners in areas at risk from wildfires implement and maintain a defensible space landscape area between buildings and potential approaching wildfire.

PURPOSE

The purpose of this guideline is to provide information on how fuel modification zones are to be designed, installed, and maintained in order to meet defensible space requirements.

SCOPE

A fuel modification zone is a strip of land where combustible vegetation has been removed and/or modified and partially or totally replaced with more adequately spaced, drought-tolerant, fire-resistant plants in order to provide a reasonable level of protection to structures from wildland and vegetation fires. Development occurring within canyons, foothills, mountains, non-irrigated former farming areas, and other lands containing combustible vegetation requires modification of natural vegetation at the urban interface.

SUBMITTAL CRITERIA REQUIREMENTS

Fuel modification programs vary in complexity and are dependent upon the type, quantity, and spacing of vegetation, as well as topography, degree/type of exposure, local weather patterns, and the construction, design, and placement of structures. A typical fuel modification installation consists of three Zones. a Zone A which extends 30 feet from the structure and is irrigated. Zone B extends out 100 feet from the structure. It is a thinned by a minimum of fifty so that the maximum coverage does not exceeds 50 percent. Land within this zone must be free of debris, dead wood, branches touching the ground, and other dry or dead vegetation. Zone C extends out 200 feet from the structure. Zone C thinned by a minimum of thirty (30) percent. Land within this zone must be free of debris, dead wood, branches touching the ground, and other dry or dead vegetation

1. Conceptual Fuel Modification Plans

Conceptual fuel modification plans must be approved by the Colton Fire Department (CFD). This approval occurs prior to, and/or concurrent, with review and approval of any entitlement or conditions being set.

Conceptual plans are optional. See Section 2 for the precise plan requirements. Precise plans shall include all submittal criteria information required for conceptual plans below. Approval of a fuel modification plan by the CFD does not eliminate the requirement to obtain appropriate environmental, grading, and zoning clearance/permits from the appropriate approving agency having jurisdiction. Conceptual plans show the area and location of fuel modification necessary to achieve the minimum acceptable level of risk to structures from combustible vegetation fires.

Submit three sets of plans prepared by a licensed landscape architect or other design professional with equivalent credentials to the CFD. Contact the CFD in advance if not using a licensed landscape architect. An electronic copy of the plans is required in .pdf format.

The following information shall be included on the conceptual fuel modification plan:

A. Delineation of each zone (setback, irrigated, and thinning) with a general description of each zone's dimensions and character; i.e., 30-foot A Zone setback, 100-foot Zone B, with existing vegetation removed, irrigated, and planted with adequately spaced plant material from the *Horizontal Spacing and Vertical Separation Requirements* Document. (See Attachment 1.) Additionally, Copy Attachment 1 onto the plans indicating appropriate spacing requirements will be designed for the precise plans.

- B. Identify the removal of undesirable plant species in accordance with the *Undesirable Plant Species* (See Attachment 2). Copy Attachment 2 onto the plans.
- C. Existing plant species within the required fuel modification area planned to be retained and, if available, proposed plant materials to be planted in the fuel modification area. The plans shall address rare, protected, and endangered plant and animal species, tree ordinances, geological hazards, and other conflicting restrictions. The design professional must be prepared to address the disposition of these species with the submittal of the fuel modification plans.
- D. Identify the size of the proposed development by showing all tract and property lines and slope contour lines. Provide the proposed location of all structures nearest to the fuel modification area.
- E. A note stating that within the fuel modification zones, the plant species will be selected from the Colton approved plant palette.
- F. If you cannot meet the requirements of the fuel modification guideline for total distance of the zones, alternate plant species, or horizontal spacing/grouping distances, an Alternative Materials and Methods (AM & M) request letter shall be drafted and submitted with the plans. If an alternative means of protection is approved by the CFD, a copy of the AM & M request letter and an CFD drafted response letter shall be copied onto the plans then re-submitted for the stamp of approval.

2. Precise Fuel Modification Plans

Precise fuel modification plans shall include <u>all</u> information required for conceptual fuel modification plans and the following additional information:

- A. Plant palette to be designed and installed in accordance with this guideline. Include a plant legend for all trees, tree-form shrubs, shrubs, and ground cover in irrigated zones showing the maximum width of mature plants and proposed spacing in accordance with the *Horizontal Spacing and Vertical Separation Requirements* (Attachment 1).
- B. Irrigation plans indicating that an irrigation system is being designed and installed.
- C. If not available on the conceptual plan, building footprints or a statement that clearly indicates the limits of proposed structure(s).
- D. Specify on the plans that the property owner shall be responsible for maintaining the fuel modification in the condition as approved.

3. Plant Palette Information

The plant species from the *Colton Approved Plant List,* Attachment 3, were approved by various resource agencies responsible for environmental protection. All plants installed shall be selected from Attachment 3 and be grouped and spaced in accordance with Attachment 1. Specific installation requirements are included for various plant species. (See plant code, legend, and qualification statements in Attachment 1). Retained plants shall be proposed for approval on the plans (See below for proposing alternate plant species). All plant species must be submitted in a legend on the plans containing both the botanical and common names. In irrigated zones plants must be fire resistant and drought tolerant. New plant species introduced outside of the irrigated zones must be from Attachment 3 (or see below). (All plants including species from Attachment 3 will burn given sufficient heat and low moisture content. Vegetative fire resistance may be enhanced through adequate irrigation rates or precipitation).

Proposing Alternate Species:

If alternate plant species are proposed, the landscape architect shall provide photographs as well as all data on the size and fire resistive characteristics for installation criteria. A maximum of 10 alternate species can be proposed per project. Plant selections need to have similar/equal properties to the plants from Attachment 3. CFD will make a case-by-case determination as to acceptability of the proposed species. The proposed species must be spaced based on size and characteristics. If the plant materials are proposed to be planted within 300 feet of reserve lands (except plants on the interior of the tract), concurrence from the applicable agencies listed in Section 2B would be required. If the proposed plants have received previous resource agency approval, no concurrence letter will be required. Contact CFD prior to your submittal of alternate plant species, if needed.

4. Zone A – Irrigated Structure Setback Zone

The purpose of the setback zone is to provide a defensible space for fire suppression forces and to protect structures from radiant and convective heat. In no case shall Zone A be less than a 30-foot minimum width. The entire zone is to be located on a level, graded area at the top or base of the slope.

If Zone A is located within the lot containing the protected structure and another entity is maintaining the B zone, it shall be located at the most distal level 30 feet prior to the beginning of the slope. If Zone A is located outside of the lot containing the protected structure, it shall begin at the lot property line. The latter condition is preferred as it allows for combustible construction within privately owned individual lots. Typically, Zone A will not be approved when proposed

more than 100 feet from the protected structure. Zone A may incorporate trails, roadways, and other level noncombustible surfaces that create defensible space for fire crews heat reduction between the protected structure and the fire.

Zone A – Specific Maintenance Requirements

- A. Automatic irrigation systems to maintain healthy vegetation with high moisture content and be regularly irrigated.
- B. Pruning of foliage to reduce fuel load, maintain vertical continuity, and removal of plant litter and dead wood in accordance the *Horizontal Spacing* and *Vertical Separation Requirements* (Refer to Attachment 1).
- C. Complete removal of undesirable plant species (See Attachment 2). There is also minimal allowance for retention of selected native vegetation.
- D. Plants in this zone shall be highly fire resistant and selected from the *Colton Approved Plant List* (Refer to Attachment 3).
- E. Tree species within Zone A are not allowed within 10 feet of combustible structures (measured from the edge of a full growth crown).
- F. Maintenance includes thinning and removal of over-growth, replacement of dead/dying fire resistant plantings, and maintenance of the operation of the irrigation system.
- G. Devices that burn solid fuels are not permitted in any fuel modification zone.
- H. No combustible construction shall be allowed within Zone A.

5. Zone B -Reduced Fuel Zone

This portion of fuel modification consists of irrigated landscaping. This irrigated zone is a minimum of 70 feet in width extending 100 feet from the structure and may be increased as conditions warrant. The plans must delineate that portion of the fuel modification area that will be permanently and regularly irrigated. The landscape architect shall select plant species, design an irrigation system, and design a maintenance program which sensitively addresses water conservation practices and includes methods of erosion control to protect against slope failure. All irrigation shall be kept a minimum of 20 feet from the drip line of any existing native Quercus (oak) species.

Zone B shall be cleared of all undesirable plant species, irrigated, and planted with species from the *Colton Approved Plant List*, Attachment 3. Exceptions to save desirable species may be submitted for approval by the CFD on a site-specific basis.

Zone B - Specific Maintenance Requirements

- A. Groundcover shall be installed and maintained at a height not to exceed 2 feet.
- B. In order to maintain proper coverage, native grasses shall be allowed to go to seed. Native grasses shall be cut after annual seeding. Cut heights shall be approximately 4 -inches.
- C. Apply irrigation rates to maintain healthy vegetation with high moisture content based on plant species specific needs.
- D. All plant species designed for Zone B shall be selected from Attachment 3. Existing fuel modification maintenance programs are limited to the plants listed on the approved plans unless a revision is requested. Planting and maintenance shall be in accordance with planting restrictions from Attachments 1 and 2. Native vegetation not on the undesirable list is allowed to remain providing the coverage of vegetation does not exceed 50 percent.
- E. Groups of trees, tree-form shrubs, and shrubs that naturally exceed 2 feet in height shall be vertically pruned, and horizontally spaced in accordance with Attachment 1.
- F. Removal of dead and dying vegetation and undesirable plant species from Attachment 2.
- G. Devices that burn solid fuels are not permitted in any fuel modification zone.
- H. Combustible construction is not allowed within Zone B.

NOTE REGARDING APPLICATION OF CBC Chapter 7A and CRC R327: All structures in lots containing or adjacent to designated fuel modification zones shall incorporate special construction features per California Building Code (CBC) Chapter 7A or California Residential Code (CRC) R327 as required by the CFD. The identification of structures required to have special construction features due to development/construction in a FHSZ shall be done independently from the assessment of the proposed fuel modification plan. These construction features are required to be listed on the CFD reviewed Fire Master Plan.

6. Zone C -Reduced Fuel Zone

This portion of fuel modification consists of irrigated landscaping. This irrigated zone is a minimum of 100 feet in width beginning 100 feet from the structure extending 200 feet from the structure and may be increased as conditions warrant. The plans must delineate that portion of the fuel modification area that will be permanently and regularly irrigated. The design an irrigation system and

design a maintenance program which sensitively addresses water conservation practices and includes methods of erosion control to protect against slope failure. Native vegetation not on the undesirable list is allowed to remain providing the coverage of vegetation does not exceed 70 percent.

Zone C – Specific Maintenance Requirements

- A. In order to maintain proper coverage, native grasses shall be allowed to go to seed. Native grasses shall be cut after annual seeding. Cut heights shall be approximately 4 -inches.
- B. If irrigation is used apply irrigation rates to maintain healthy vegetation with good moisture content based on plant species specific needs.
- C. Existing fuel modification maintenance programs are limited to the plants listed on the approved plans unless a revision is requested. Planting and maintenance shall be in accordance with planting restrictions from Attachments 1 and 2. Native vegetation not on the undesirable list is allowed to remain providing the coverage of vegetation does not exceed 70 percent.
- D. Removal of dead and dying vegetation and undesirable plant species from Attachment 2.
- E. Devices that burn solid fuels are not permitted in any fuel modification zone.

7. Fuel Modification Plan Revisions

Revisions to previously approved fuel modification zones or plans shall follow procedures as established Colton. Existing fuel modification maintenance programs are limited to the plants and zone distances listed on the approved plans unless a revision is requested to the CFD. Three sets of revised plans are to be submitted to the CFD for review. The applicant shall provide a copy of the original, stamped CFD approved plan for reference during the review. Some minor field changes may not need a plan submittal revision, yet those instances shall require approval by CFD in writing prior to the field change.

8. Fuel Modification Implementation & Required Inspections

This following information shall be placed on precise fuel modification plans, verbatim:

- A. <u>Prior to Rough Grading Permit Issuance</u>: The developer/builder shall have approved/stamped <u>Conceptual or Precise</u> Fuel Modification Plan.
- B. <u>Prior to Precise Grading Permit Issuance</u>: The developer/builder shall have approved/stamped Precise Fuel Modification Plan.

- C. <u>Prior to Building Permit Issuance</u>: Prior to dropping lumber, the developer/builder shall implement those portions of the approved fuel modification plan determined to be necessary by the CFD prior to the introduction of any combustible materials into the area. Removal of undesirable species may meet this requirement or a separation of combustible vegetation for a minimum distance of 100 feet from the location of the structure and lumber stockpile. This generally involves removal and thinning of plant materials indicated on the approved plan. An inspection and/or release letter to the building department is required.
- D. Prior to Issuance of Certification of Occupancy: The fuel modification zones adjacent to structures must be installed, irrigated, and inspected. This includes physical installation of features identified in the approved precise fuel modification plan (including, but not limited to, plant establishment, thinning, irrigation, zone markers, access easements, etc.). An CFD Inspector will provide written approval of completion at the time of this final inspection. A written disclosure may be requested by the CFD Inspector indicating that the property owner is aware of the fuel modification zone on their land and that they are aware of the associated restrictions of the zone.

9. Glossary

CONDUCTION - Direct transfer of heat/flames by objects touching each other.

CONVECTIVE HEAT - Transfer of heat by atmospheric currents, which is most critical under windy conditions and in steep terrain.

CROWN - Upper part of tree or other woody plant carrying the main branch system and foliage.

CANOPY - More or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees or other woody growth.

DEFENSIBLE SPACE - An area around the perimeter of structures which are key points of defense/attack against encroaching wildfires or fires escaping the structure. Defensible space refers to the area between a structure and a potential on-coming wildfire.

DESIRABLE PLANT LIST - List of plants exhibiting characteristics of low fuel volume, fire resistance, and drought tolerance which make them desirable for planting in areas of high fire danger.

DRIPLINE - Ground area at the outside edge of the canopy.

DROUGHT TOLERANT - The ability of a plant or tree to survive on little water.

FIRE BREAK - Removal of growth, usually in strips, around housing developments to prevent a fire from spreading to the structures from open land or vice versa.

FIRE RESISTANT - Any plant will burn with enough heat and proper conditions. Resistance is often used as a comparative term relating to the ability of a plant to resist ignition.

FIRE RETARDANCE - Relative comparison of plant species related to differences in fuel volume, inherent flammability characteristics, and ease of fire spread.

FUEL BREAK - A wide strip or block of land on which the native or pre-existing vegetation has been permanently modified so that fires burning into it can be more readily extinguished.

FUEL LOAD - The weight of fuels in a given areas, usually expressed in tons per acre.

FUEL MODIFICATION ZONE - A strip of land where combustible native or ornamental vegetation has been modified and partially or totally replaced with drought tolerant, fire resistant, plants.

FUEL MOISTURE CONTENT - The amount of water in a fuel, expressed as a percentage of the oven dry weight of that fuel.

FUEL VOLUME - The amount of fuel in a plant in a given area of measurement. Generally, an open-spaced plant will be low in volume.

HORIZONTAL CONTINUITY - The extent or horizontal distribution of fuels at various levels or planes.

LADDER FUELS - Fuels which allow the vertical transmission of fire to overstory vegetation. Fire is able to carry from ground surface fuels into crowns with relative ease.

LITTER - The uppermost layer of loose debris composed of freshly fallen or slightly decomposed organic material such as dead sticks, branches, twigs, leaves or needles.

LONG TERM - In perpetuity of the fuel modification plan requirement.

PROBABILITY OF IGNITION - A rating of the probability that a glowing or flaming flying ember or heat will cause a fire, providing it lands on receptive fuels.

RADIANT HEAT - Transfer of heat by electromagnetic waves and can, therefore, travel against the wind. For example, it can preheat the opposite side of a burning slope in a steep canyon or a neighboring home to the ignition point.

RESERVE LANDS - As defined by the State of California and San Bernardino County agencies.

TARGET SPECIES - Plant species that are generally removed as part of the fuel modification plan (see undesirable species).

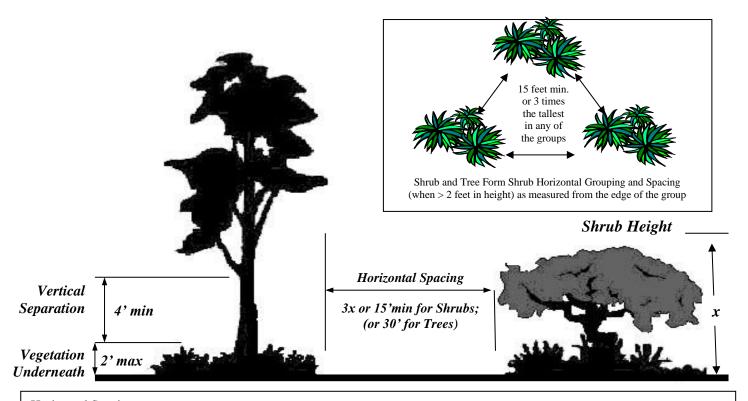
UNDESIRABLE SPECIES - Those species of plants with inherent characteristics which make them highly combustible. These characteristics can be either physical or chemical. Physical properties include large amounts of dead material retained within the plant, rough or peeling bark, and the production of large amounts of litter. Chemical properties include the presence of volatile substances such as oils, resins, wax, and pitch. These plants are sometimes referred to as target species.

WILDLAND URBAN INTERFACE - That line, area, or zone where structures and other human development meet or intermingles.

FIRE HAZARD SEVERITY ZONES (FHSZ), WILDLAND URBAN INTERFACE (WUI) - The geographic areas designated on adopted local and state CALFIRE maps. The areas contain the type of vegetation, topography, weather, and fire history that have the possibility of conflagration fires.

Attachment 1

Horizontal Spacing and Vertical Separation Requirements for Installation and Maintenance in All Fuel Modification Zones



Horizontal Spacing

Vegetation Less than 2 Feet in Height:

• No horizontal spacing or vertical separation is required in all zones. Ground cover in Zone B should cover the entire ground between groups of shrubs, trees, or grasses. Ground cover shall not exceed 2 feet in height.

Shrubs and Trees 2 Feet in Height or Greater:

Shrub and Tree Group Size:

• All Shrubs and Trees can be in groups of 3 specimens or less. No horizontal spacing is required inside the group.

Shrub / Tree-form Shrub Group Spacing:

- Groups of shrubs shall be spaced by the greater of the following two measurements: A distance of 15 feet minimum (or) 3 times the height of the tallest specimen in any of the groups.
- No vegetation over 2 feet in height is allowed within 15 feet from the edge of tree canopy(s).

Tree Group Spacing:

- Groups of Trees shall be spaced by a distance of 30 feet minimum regardless of height.
- Trees shall be a minimum of 10 feet from all structures at maturity.

Vertical Separation

Shrubs and Trees Less than 10 Feet in Height:

• When the fuel modification zone is within 30 feet of the structure, a vertical separation of 2 feet minimum is required from the vegetation below. (Not required if shrubs are further than 30 feet from structure).

Shrubs and Trees 10 Feet in Height or Greater:

- A vertical separation of 4 feet minimum is required to be maintained from the vegetation below.
- Trees only: All vegetation located underneath trees, shall be a maximum of 2 feet in height.

Attachment 2

Undesirable Plant Species

Certain plants are considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be either physical or chemical. Physical properties that would contribute to high flammability include large amounts of dead material retained within the plant, rough or peeling bark, and the production of copious amounts of litter. Chemical properties include the presence of volatile substances such as oils, resins, wax, Certain native plants are notorious for containing these volatile and pitch. substances.

Plants with these characteristics shall not be planted in any of the fuel modification zones. Should these species already exist within these areas, they shall be removed because of the potential threat they pose to any structures. They are referred to as target species since their complete removal is a critical part of hazard reduction. These fire-prone plant species include (but not limited to):

FIRE PRONE PLANT SPECIES (MANDATORY REMOVAL)

Botanical Name	Common Name
Cynara Cardunculus	Artichoke Thistle
Ricinus Communis	Castor Bean Plant
Cirsium Vulgare	Wild Artichoke
[~]	

Brassica Nigra **Black Mustard** Silybum Marianum Milk Thistle

Sacsola Austails Russian Thistle/Tumblewood Nicotiana Bigelevil Indian Tobacco Nicotiana Glauca Tree Tobacco Lactuca Serriola Prickly Lettuce Conyza Canadensis Horseweed Heterothaca Grandiflora Telegraph Plant Anthemix Cotula Mayweed

Burning Nettle Noary Cress, Perennial Peppergrass Cardaria Draba Wild Turnip, Yellow Mustard, Field Mustard Brassica Rapa

Adenostoma Fasciculatum Chamise Adenostoma Sparsifolium **Red Shanks** Cortaderia Selloana Pampas Grass Artemisia Californica California Sagebrush Common Buckwheat Eriogonum Fasciculatum

Salvia Mellifera Black Sage

Ornamental:

Urtica Urens

Cortaderia Pampas Grass Cypress Cupressus sp Eucalyptus sp Eucalyptus Juniperus sp Juniper Pinus sp Pine

Attachment 3

Colton Approved Plant List

Botanical Name	Common Name	Plant Form
Shrubs:		
Abelia x grandiflora	Glossy Abelia Flowering Maple/Chinese	Shrub
Abutilon hybridum	Lantern	Shrub
Acacia redolens	Desert Carpet	Shrub
Acanthus mollis	Bear's Breech	Shrub
Acer Macrophyllum	Big Maple Leaf	Tree
Achillea millefolium	Common Yarrow	Shrub
Achillea tomentosa	Wooly Yarrow	Shrub
Agapanthus species	Lily-Of-The-Nile	Shrub
Alocasia macrorrhiza	Elephant's Ear	Shrub
Aloe arborescens	Tree Aloe	Shrub
Alogyne huegeii	Blue Hibiscus	Shrub
Ambrosia chammissonis	Beach Bur-Sage	Shrub
Amorpha fruticosa	Western False Indigobush	Shrub
Anigozanthus flavidus	Kangaroo Paw	Shrub
Antirrhinum nuttalianum ssp.	No common name	Shrub
Arctostaphylos glandulosa ssp.	Eastwood Manzanita	Shrub
Arctostaphylos hookeri	Monterey Carpet Manzanita	Shrub
Arctostaphylos oungens	No common name	Shrub
Arctostaphylos refugioensis	Refugio Manzanita	Shrub
Arctostaphylos x 'Greensphere'	Greenshere Manzanita	Shrub
Artemisia pycnocephala	Beach Sagewort	Shrub
Atriplex canescens	Four-wing Saltbush	Shrub
Atriplex lentiformis ssp. breweri	Brewer Saltbush	Shrub
Baccharis emoyi	Emory Baccharis	Shrub
Bacharis pilularis ssp. Consanguinea	Chaparral Bloom	Shrub
Baccharis salicifolia	Mulefat	Shrub
Begonia species	Begonia	Shrub
Berberis thunbergii	Japanese Barberry	Shrub
Bergenia crassifolia	Winter Blooming Bergenia	Shrub
Bougainvillea spectabilis	Bougainvillea	Shrub
Brickellia californica	No common name	Shrub
Buddleja davidii	Buttergly Bush	Shrub
Buxus microphylla japonica	Japanese Boxwood	Shrub

Caesalpinia gilliesii	Bird of Paradise Bush	Shrub
Calliandra californica	Baja Fairy Duster	Shrub
Callistemon cutrunus'compacta'	Bottlebrush	Shrub
Calycanthus occidentalis	Spice Bush	Shrub
Camissonia cheiranthifiloa	Beach evening primrose	Shrub Ground
Carissa macrocarpa	Green carpet natal plum	cover/shrub
Carpenteria califonica	Bush Anemone	Shrub
Cassia (Senna) artemisiodes	Feathery Cassia	Shrub
Ceanothus gloriosus 'Point Reyes'	Point reyes ceanothus	Shrub
Ceanothus griseus 'Louis Edmunds'	Louis edmunds ceanothus	Shrub
Ceanothus griseus var. horizontalis	Carmel creeper ceanothus	Shrub
Ceanothus griseus var. horizontalis	Yankee Point ceanothus	Shrub
Ceanothus megarcarpus	Big pod ceanothus	Shrub
Ceanothus prostratus	Squaw carpet ceanothus	Shrub
Ceanothus spinosus	Green Bark ceanothus	Shrub
Ceanothus verrucosus	Wart-stem ceanothu	Shrub
	0 .	Ground
Cerastium tomentosum	Snow-in-summer	cover/Shrub
Cercis occidentalis	Western Redbud	Shrub/Tree
Choisya ternata	Mexican Orange	Shrub
Cistus hybridus	White Rockrose	Shrub
Cistus incanus	No common name	Shrub
Cistus incanus ssp. Corsicus	No common name	Shrub
Cistus salviifolius	Sageleaf Rockrose	Shrub
Cistus x purpureus	Orchid Rockrose	Shrub
Clivia miniata	Clivia	Shrub
Cneoridium dumosum	Bushrue	Shrub
Colocasia esculenta (caladium)	Talo, Elephant's Ear	Shrub
Comarostaphylis diversifolia	Summer Holly	Shrub
Convolvulus cneorum	Bush Morning Glory	Shrub Ground
Coprosma kirkii	Creeping Coprosma	Cover/Shrub
Coprosma pumila	Prostrate Coprosma	Shrub
Cotoneaster buxifolius	No common name	Shub
Cotoneaster aprneyi	no common name	Shrub
Cotyledon species	No common name	Shrub
Crassula ovata	Jade Tree	Shrub
Cuphea hyssopifolia	False Heather	Shrub
Cyrtomium falcatum	Holly Fern	Shrub
Dasylirion longissimum	Mexican Grass Tree	Shrub

Dendromecon rigida	Bush poppy	Shrub
Dichelostemma capitatum	Blue Dicks	Shrub
Dietes bicolor	Fortnight Lily, African Iris	Shrub
Dietes iridiodies	Fortnight Lily, African Iris	Shrub
Distinctis buccinatoria	Blood-Red Trumpet Vine	Shrub
Dodonaea viscosa	Hopseed Bush	Shrub
Elaeagnus pungens	Silverberry	Shrub
Encelia californica	California Encelia	Shrub
Epilobium canum [Zauschneria californica]	Hoary California Fuschia	Shrub
Eriodictycon crassifolium	Thuck Leaf Yerba Santa	Shrub
Eriodictycon trichocalyx	Yerba Santa	Shrub
Eriophyllum confertiflorum	No common name	Shrub
Escallonia species	Several varieties	Shrub
Eschscholzia californica	California Poppy	Shrub
Eschscholzia mexicana	Mexican Poppy	Shrub
Euphorbia species	Varies	Shrub
Euryops perctinatus	NCN	Shrub
Fatsia japonica	Japanese Aralia	Shrub
Feijoa sellowiana	Pineapple Guava	Shrub/Tree
Fouquieria splendens	Ocotillo	Shrub
Fremontondendron californicum	California Flannelbush	Shrub
Galvezia speciosa		Shrub
Gardenia augusta (jasminoides)	Bush Snapdragon Gardenia	Shrub
	Silktassel	Shrub
Garrya ellipta Gillia capitata	Globe Gilia	Shrub
Gilia leptantha		Shrub
Gilia tricolor	Showy Gilia Bird's Eyes	Shrub
	Grevillea	Shrub
Grevillea special & cultivars Grewia occidentalis	Starflower	Shrub
Hakea suaveolens	Starriower Sweet Jalea	Shrub
	Lilac Vine	Shrub
Hardenbergia comptoniana	Hebe	Shrub
Hebe species & cultivars	пере	Ground
Heliathemum muutabile	Sunrose	Cover/Shrub
Helianthemum scoparium	Rush Rose	Shrub
Helictotruchon sempervirens	Blue Oat Grass	Shrub
Hemerocallis hybrids	Daylily	Shrub
Hesperaloe parviflora	Red Yucca	Shrub
Heteromeles arbutifolia	Toyon	Shrub
Heuchera species	Coral Bells	Shrub

Hibiscus rose-sinensis	Chinese Hibiscus	Shrub
Hypericum calycimum	Aaron's Beard	Shrub
Illex species	Holly	Shrub
Iris species & varieties/cultivars	Bearded Iris	Shrub
Isocoma menziesii	Coastal Goldenbush	Shrub
Isomeris arborea	Bladderpod	Shrub
Juncus acutus	Spiny Rush	Shrub
Justicia brandegeeana	Shrimp Plant	Shrub
Keckiella antirrhinoides	Yellow Bush Penstemon	Shrub
Keckiella cordifolia	Heart Leaved Penstemon Blue Stemmed Bush	Shrub
Keckiella ternata	Penstemon	Shrub
Kniphofia uvaria	Red Hot Poker	Shrub
Lantana camara cultivars	Yellow Sage	Shrub
Lantana montevidensis	Trailiing Lantana	Shrub
Larrea tridentata	Creosote Bush	Shrub
Lavandula dentata	French Lavender	Shrub
Lavatera assurgentiflora	California Tree Mallow	Shrub
Leptospermum laevigatum	Australian Tea Tree	Shrub
Leonotis leonurus	Lion's Tail	Shrub
Leucophyllum frutescens	Texas Ranger	Shrub
Ligustrum japonicum	Texas privet	Shrub
Limonium perezii	Sea Lavender	Shrub
Lirope muscari	Big Blue Lily Turf	Shrub
Lobelia laxiflora	Mexican Bush Lobelia	Shrub
Lonicera japonica 'Halliana	Hall's Japanese Honeysuckle	Shrub
Lotus hermannii	Northern Wooly Lotus	Shrub
Lonicera subspicata	Wild Honeysuckle	Shrub
Lotus scoparius	Deerweed Golden Abundance Oregon	Shrub
Mahonia aquifolium 'Golden Abundance'	Grape	Shrub
Mahonia nevenii	Nevin Mahonia	Shrub
Malacothamnus fasciculatus	Chapparal Mallow	Shrub
Malva species	Mallow	Shrub
Melaleuca nesophila	Pink Melaleuca	Shrub
Mimulus species	Monkeyflower	Shrub
Mirabilis californica	Wishbone Bush	Shrub
Muhlenbergia rigens	Deer Grass	Shrub
Myrica californica	Pacific Wax Myrtle	Shrub
Myoporum debile	No common name	Shrub
Myoporum insulare	Boobyalla	Shrub

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Myrsine africana	African Boxwood	Shrub
Myrtus communis 'compacta'	Dwarf Myrtle	Shrub
Nandina domestica	Heavenly Bamboo	Shrub
Nerium Oleander	Oleander	Shrub
Nolina cismontana	Chapparal Nolina	Shrub
Nolina species	Mexican Grasstree	Shrub
Oenothera hookeri	California Evening Primrose	Shrub
Oenothera speciosa	Show Evening Primrose	Shrub
Opuntia littoralis	Prickly Pear	Shrub
Opuntia oricola	Oracle Cactus	Shrub
Opuntia prolifera	Coast Cholla	Shrub
Osmanthus fragrans	Sweet Olive	Shrub
Penstemon species	Beard Tongue	Shrub
Phlomis fruticosa	Jerusalem Sage	Shrub
Photinia fraseria	No common name	Shrub
Phormium tenax	New Zealand Flax	Shrub
Plumbago auritulata	Plumbago Cape	Shrub
Portulacaria afra	Elephant's Food	Shrub
Potentilla glandulosa	Sticky Cinquefoil	Shrub
Prunus caroliniana	Carolina Cherry Laurel	Shrub/Tree
Prunus ilicifolia ssp. Ilicifolia	Holly Leafed Cherry	Shrub
Prunus Iyonii	Catalina Cherry	Shrub/Tree
Punica granatum	Pomegranate	Shrub/Tree
Puya species	Puya	Shrub/Tree
Pyracantha species	Firethorn	Shrub
Quercus berberdifolia	California Scrub Oak	Shrub
Quercus dumosa	Coastal Scrub Oak	Shrub
Rhamnus alaternus	Italian Buckthorn	Shrub
Rhamnus californica	California Coffee Berry	Shrub
Rhamnus crocea	Redberry	Shrub
Rhamnus crocea ssp. Ilicifolia	Hollyleaf Redberry	Shrub
Rhaphiolepis species	Indian Hawthorne	Shrub
Rhus integrifolia	Lemonade Berry	Shrub
Rhus ovata	Sugarbush	Shrub
Ribes aureum	Golden Currant	Shrub
Ribes indecorum	White Flowering Currant Fuschia Flowering	Shrub
Ribes speciosum	Goosebberry	Shrub
Ribes viburnifolium	Evergreen currant	Shrub
Romneya coulteri	Matilija Poppy	Shrub
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Romneya coulteri 'White Cloud'	White Cloud Matilija Poppy	Shrub
Rosa species	Rose	Shrub
Rosmarinus officinalis	Rosemary	Shrub
Salvia greggii	Autums Sage	Shrub
Santolina virens	Green Lavender Cotton	Shrub
Satureja chandleri	San Migueal Savory	Shrub
Scirpis scutus	Hard Stem Bulrush	Shrub
Scirpus californicus	California Bulrush	Shrub
Simmondsia chinensis	Jojoba	Shrub
Solanum douglasii	Douglas Nightshade	Shrub
Solanum xantii	Purple Nightshade	Shrub
Strelitzia nicolai	Giant Bird of Paradise	Shrub
Strelitzia reginae	Bird of Paradise	Shrub
Symphoricarpos mollis	Creeping Snowberry	Shrub
Tecoma stans (Stenolobium stans)	Yellow Bells	Shrub/S

Small Tree

Tibouchina urvilleana Princess Flower Shrub Trachelospermum jasminoides Star Jasmine Shrub Trichosstems lanatum Woolly Blue Curls Shrub Tulbaghia violacea Society Garlic Shrub V erbena lasiostachys Western Vervain Shrub Viburnum species Viburnum Shrub Desert Wild Grape Vitis girdiana Shrub Westringia fruticosa No common name Shrub Xannithorrhoea species **Grass Tree** Shrub Shiny Xylosma Shrub Xylosma congestum Yucca Species Yucca Shrub Yucca whipplei Yucca Shrub

Zoysia tenuifolia Korean Grass **Ground Cover**

Calla Lilly

Shrub

Trees:

Zantedeschia aethiopica

Acer Macrophyllum	Big Maple Leaf	Tree
Aesculus californica	California Buckeye	Tree
Agonis flexuosa	Peppermint Tree	Tree
Albizia julibrissin	Silk Tree	Tree
Alnus cordata	Italian Alder	Tree
Alnus rhombifolia	White Alder	Tree
Bauhinia variegata	Purple Orchid Tree	Tree
Betula pendula	European White Birch	Tree
Brachychiton acerifolius	Flame Tree	Tree

Calocedrus decurrens Incense Cedar Tree Tree Calodrebdum capense Cape Chestnut Tree Carya illinoinensis Pecan Cendrus deodara Deodar Cedar Tree Ceratonia siliqua Carob Tree Cerciddium floridum Blue Palo Verde Tree

Cercis occidentalis Western Redbud Shrub/Tree

Chilopsis linearis Desert Willow Tree Chinese Fringe Tree Tree Chilonanthus retusus Chitalpa X tashkentensis Tree Chitalpa Shrub Choisya ternata Mexican Orange Cinnamomum camphora Camphor Tree Tree Cocculus laurifolius Laurel Leaf Snail Seed Tree Giant Dracaena Cordyline australis Tree Tree Cupressus macrocarpa Monterey Cypress Cyathea cooperi Australian Tree Fern Tree Dicksonia antarctica Tazmanian Tree Fern Tree Dracaena draco Dragon Tree Tree Eriobotrya japonica Loquat Tree Erythrina species Coral Tree Tree

Feijoa sellowiana Pineapple Guava Shrub/Tree

Tree Ficus species Fig Tree Fraxinus augustifolia Raywood Ash Geijera parviflora Australian Willow Tree Ginkgo biloba Maidenhair Tree Tree Honey Locust Tree Gleditisia triacanthos Tree Hymenosporum flavum Sweetshade Tree Jacaranda mimosifolia Jacaranda Tree Juglans californica California Black Walnut Tree Chinese Flame Tree Tree Koelreuteria bipinnata Lagerstroemia indica Crape Myrtle Tree Primrose Tree Tree Lagunaria patersonii Tree Laurus nobilis Sweet Bav American Sweet Gum Tree Liquidambar styraciflua Liriodendron tulipfera Tulip Tree Tree Lithocarpus densiflorus Tanbark Oak Tree Lophostemon (Tristania) confertus Brisbane Box Tree Fernleaf Ironwood Tree Lyonothamnus floribundus Macadamia integrifolia Macadamia Nut Tree

Southern Magnolia

Magnolia grandiflora

Tree

Maytenus boaria	Mayten Tree	Tree
Metasequoia glyptostroboides	Dawn Redwood	Tree
Metrosideros excelsus	New Zealand Christmas Tree	Tree
Morus alba	White Mulberry	Tree
Olea europaea	Olive- Fruitless varieties only	Tree
Parkinsonia aculeata	Mexican Palo Verde	Tree
Pistacia chinesis	Chinese Pistache	Tree
Pittosporum undulatum	Victorian Box	Tree
Plantanus racemosa	California Sycamore	Tree
Popolus fremontii	Western Cottonwood	Tree
Prunus caroliniana	Carolina Cherry Laurel	Shrub/
D	0 ()' 0	O

Prunus caroliniana Carolina Cherry Laurel Shrub/Tree
Prunus Iyonii Catalina Cherry Shrub/Tree
Punica granatum Pomegranate Shrub/Tree
Puya species Puya Shrub/Tree
Pyrus calleryana & cultivars Ornamental Pear Tree

Quercus agrifolia Coast Live Oak Tree Quercus engelmannii Engelmann Oak Tree Tree Quercus suber Cork Oak African Sumac Tree Rhus lancea Robinia ambigua Tree Locust Sambucus mexicana Mexican Elderberry Tree Tree Sapium sebiferum Chinese Tallow Tree Queensland Unbrella Tree Tree Schefflera actinophylla Sophora japonica Japanese Pagoda Tree Tree Tree Stenicarpus sinuatus Firewheel Tree Golden Trumpet Tree Tree Tabeuia chrysotricha Tree Taxodium mucronatum Montezuma Cypress

Tecoma stans (Stenolobium stans)

Yellow Bells

Shrub/Small Tree

Tipu Tree Tree Umbellularia californica California Laurel Tree Zelkova serrata Sawleaf Zelkova Tree Ziziphus jujuba Chinese Jujube Tree

Ground Covers:

Ground Cover Aeonium decorum Aeonium **Ground Cover** Aeonium simsii No common name Agave attenuata Century Plant Ground Cover Agave shawii Shaw's Century Plant **Ground Cover** No common name Agave victoriae-reginae **Ground Cover Ground Cover** Ajuga reptans Carpet Bugle

Aloe aristata	No common name	Ground Cover
Aloe brevifoli	No common name	Ground Cover
Aloe Vera	Medicinal Aloe	Ground Cover
Aptenia cordifolia	Red Apple Aptenia	Ground Cover
Arbutus unedo	Strawberry tree	Ground Cover
Arctostaphylos 'Pacific Mist'	Pacific Mist Manzanita	Ground Cover
Arctostaphylos edmundsii	Little Sur Manzanita	Ground Cover
• •		Ground Cover
Arctostaphylos uva-ursi Artemisia caucasica	Bearberry Caucasian Artesmisia	Ground Cover
Baccharis pilularis var. pilularis	Twin peaks #2	Ground Cover
Baileya Multiradiata	Desert Marigold	Ground Cover
Carpobrotus chilensis	Sea Fig Ice Plant	Ground Cover
Ceanothus griseus horizontalis	Yankee Point	Ground Cover Ground
Cerastium tomentosum	Snow-in-summer	cover/Shrub
Cercocarpus betuloides	Mountain Mahogany	Ground Cover
Chrysanthemum leucanthemum	Oxeye Daisy	Ground Cover
Clarkia bottae	Showy Fairwell to Spring	Ground Cover
Collinsia heterophyllia	Chinese Houses	Ground Cover
, ,		Ground
Coprosma kirkii	Creeping Coprosma	Cover/Shrub
Coreopsis californica	California Coreopsis	Ground Cover
Coreopsis lanceolata	Coreopis	Ground Cover
Corea pulchella	Australian Fuscia	Ground Cover
Cotoneaster congestus 'Likiang'	Likiang Cotoneaster	Ground Cover/Shrub
Crassula lactea	No common name	Ground Cover
Crassula multicava		
	No common name	Ground Cover
Crassula tetragona	No common name	Ground Cover
Croton californicus	California Croton	Ground Cover
Dalea Greggii	Trailing Indigo Bush	Ground Cover
Delosperma 'alba'	White trailing Ice Plant	Ground Cover
Drosanthemum floribundum	Rosea Ice Plant	Ground Cover
Drosanthemum hispidum	No common name	Ground Cover
Drosanthemum speciosus	Dewflower	Ground Cover
Duchesnea Indica	Indian Mock Strawberry	Ground Cover
Dudleya lanceolata	Lance-leaved Dudleya	Ground Cover
Dudleya pulverulenta	Chalk Dudleya	Ground Cover
Dymondia Margaretae	No common name	Ground Cover
Enogonum giganteum	St. Catherine's Lace	Ground Cover
Eriastrum Sapphirinum	Mojave Wooly Star	Ground Cover

Erigeron Glaucus	Seaside Daisy	Ground Cover
Euonymus fortunei	Winter Creeper Euonymus	Ground Cover
	Wild Strawberry/Sand	0 10
Fragaria chiloensis	Strawberry	Ground Cover
Frankenia salina	Alkali Health	Ground Cover
Gaillardia x grandiflora	Blanketflower	Ground Cover
Gazania hybrids	South African Daisy	Ground Cover
Gazania rigens leucolaena	Training Gazania	Ground Cover
Geranium incanum	Cranesbill	Ground Cover
Glechoma Hederacea	Ground Ivy	Ground Cover
Gnaphalium californicum	California Everlasting	Ground Cover
Grindelia stricta	Gum Plant	Ground Cover
Heliathemum muutabile	Sunrose	Ground Cover/Shrub
Heliotropium curassavicum	Salt Heliotrope	Ground Cover
Helix Canariensis	English Ivy	Ground Cover
Herniaria Glabra	Green Carpet	Ground Cover
Iberis sempervirens	Edging Candytuft	Ground Cover
Iberis umbellatum		Ground Cover
	Globy Candytuft	Ground Cover
Iva hayesiana	Poverty Weed	
Juniperus conferta & cultivars	Shore Junipers	Ground Cover
Lamprathus aurantiacus	Bush Ice Plant	Ground Cover
Lampranthus filicaulis	Redondo Creeper	Ground Cover
Lampranthus spectabilis	Trailing Ice Plant	Ground Cover
Lasthenia californica	Dwarf Goldfields	Ground Cover
Laurentia Fluviatilis	Blue Star Creeper	Ground Cover
Leymus condensatus	Giant Wild Rye	Ground Cover
Limonium pectinatum	No common name	Ground Cover
Lotus corniculatus	Bird's Foot Trefoil	Ground Cover
Lupinus arizonicus	Desert Lupine	Ground Cover
Lupinus benthamii	Spider Lupine	Ground Cover
Lupinus bicolor	Sky Lupine	Ground Cover
Lupinus sparsiflorus	Loosely Flowered Annual Lupine	Ground Cover
Lysimachia nummularia	Moneywort	Ground Cover
Malephora luteola	Training Ice Plant	Ground Cover
Myoporum parvilfolium	No common name	Ground Cover
Myoporum 'Pacificum'	No common name	Ground Cover
Nassella (stipa) lepidra	Foothill Needlegrass	Ground Cover
Nassella (stipa) pulchra	Purple Needlegrass	Ground Cover
Nemophilia menziesii	Baby Blue Eues	Ground Cover
110/110prillia 1110/12/00/1	Daby Diao Eaco	Stourid Gover

Oenothera belandieri Mexican Evening Primrose **Ground Cover** Ophiopogon japonicus Mondo Grass **Ground Cover** Osteospermum fruticosum Training African Daisy **Ground Cover** Ivy Geranium **Ground Cover** Pelargonium peltatum Perscicaria capitata Pink Clover **Ground Cover** Phyla nodiflora Lippia **Ground Cover** Plantago erecta California Plantain Ground Cover Plantago insularis Wooly Plantain **Ground Cover Ground Cover** Plantago sempervirens Evergreen Plantain Potentilla tabernaemontanii **Ground Cover** Spring Cinquefoil Ground Puya species Puya Cover/Tree **Ground Cover** Salvia sonomensis Creeping Sage **Ground Cover** Santolina chamaecyparissus **Lavender Cotton** Scaevola 'Mauve Clusters' No common name **Ground Cover** Sedum acre Goldmoss Sedum **Ground Cover** Sedum album Green Stonecrop **Ground Cover** Sedum confusum **Ground Cover** No common name Sedum lineare No common name **Ground Cover** Sedum x rubrotinctum Pork and Beans **Ground Cover** No common name **Ground Cover** Senecio serpens **Ground Cover** Sisyrinchium bellum Blue Eyed Grass Soleirolia soleirolii Baby's Tears **Ground Cover Ground Cover** Tecomaria capensis Cape Honeysuckle **Ground Cover** Teucarium chamedrys Germander Thymus serpyllum Lemon Thyme **Ground Cover** Trifolium hirtum 'Hyron' Hyron Rose Clover Ground Cover Trifolium fragerum 'O'Connor's' **Ground Cover** O'Connor's Legume **Ground Cover** V erbena peruviana No common name V erbena species Verbena Ground Cover Vinca minor Dwarf Periwinkle **Ground Cover** Zorro Annual Fescue Vulpia myuros 'Zorro' **Ground Cover** Wedelia trilobata Wedelia **Ground Cover**

Korean Grass

Ground Cover

Zovsia tenuifolia