

APPENDIX E

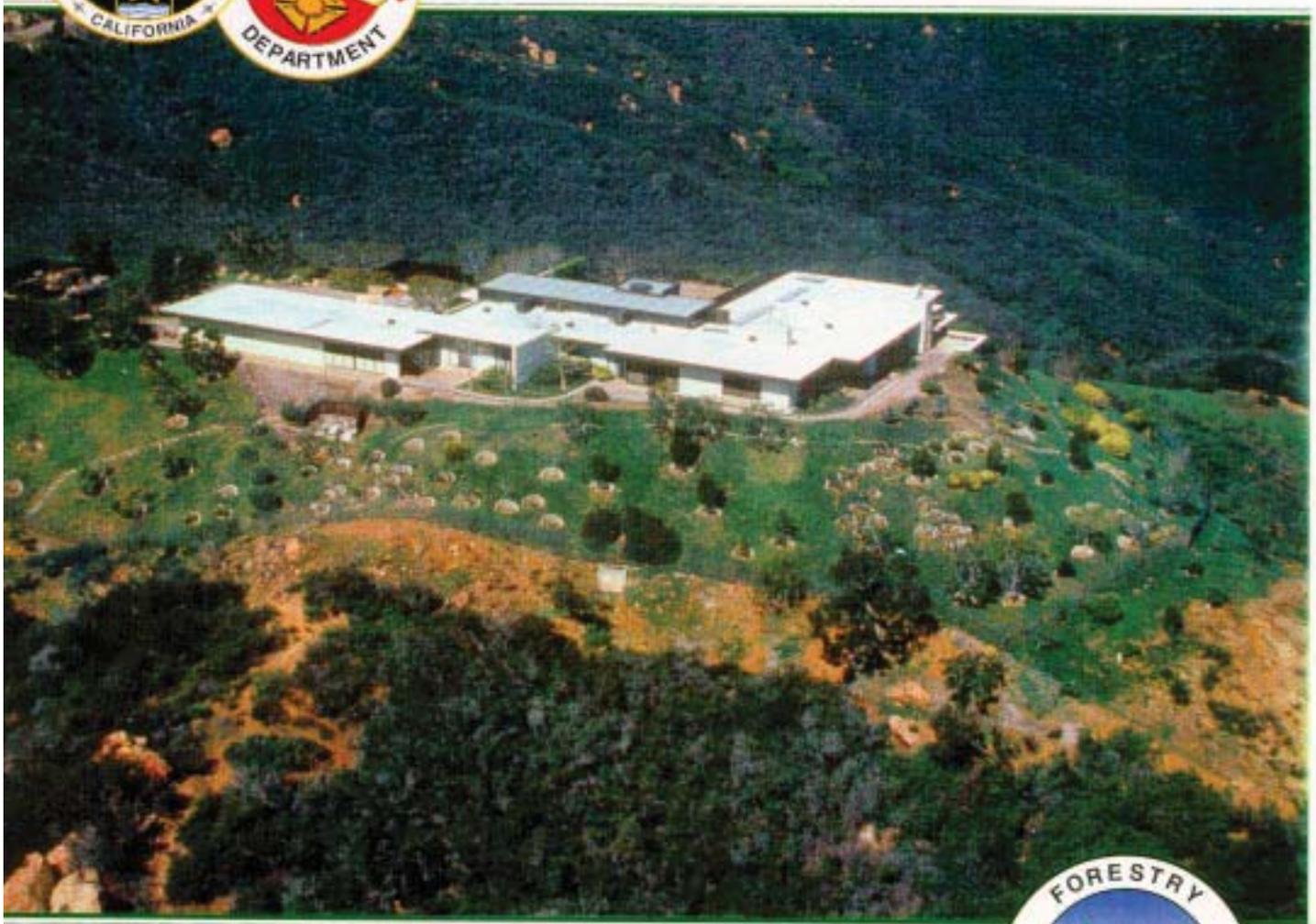
County of Los Angeles Fire Department Fuel Modification Plan Guidelines

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Fuel Modification Plan Guidelines



*County of Los Angeles
Fire Department*



Fuel Modification Unit

*Prevention Bureau
Forestry Division*



**FUEL MODIFICATION PLAN
GUIDELINES
FOR PROJECTS LOCATED IN
FIRE ZONE 4 OR
VERY HIGH FIRE HAZARD
SEVERITY ZONES**

ADOPTED

JANUARY 1998

County of Los Angeles Fire Department

Prevention Bureau

Forestry Division

Brush Clearance Section

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Introduction

Following the disastrous Southern California wildfires in 1993, the Board of Supervisors established the Wildfire Safety Panel to analyze and make recommendations on the hazardous conditions that existed for wildfires in the wildland and urban interface/intermix areas of Los Angeles County. The mission identified by the Wildfire Safety Panel at its onset was to enhance life safety concerns in Los Angeles County through the analysis and development of meaningful, cost-effective ways to improve fire safety. One of the recommendations adopted by the Wildfire Safety Panel was for the Fire Department to establish a set of guidelines and landscape criteria for all new construction that would implement ordinances relating to fuel modification planning and help reduce the threat of fires in high hazard areas.

The "Fuel Modification Guidelines" herein are administrative in nature and have been adopted by the County of Los Angeles Fire Department to provide procedural implementation of County Fire Code requirements previously adopted by the Board of Supervisors and already in effect for a Fuel Modification Plan for projects and or structures proposed within the Very High Fire Hazard Severity Zone(s) or Fire Zone 4. The submittal of fuel modification plans that meet the requirements of these guidelines will enable the Fire Department and other agencies to expedite processing and answer applicant's questions. These guidelines require compliance with existing codes and do not modify or change existing Fire Code clearance distances or any other code requirements.

Statute

Per Section 1117.2.1 of the 1996 County Fire Code: "A fuel modification plan, a landscape plan and an irrigation plan shall be submitted with any subdivision of land or prior to any new construction, remodeling, modification or reconstruction of a structure where such remodeling, modification or reconstruction of a structure increases the square footage of the existing structure by 50% or more within any 12-month period and where the structure or subdivision is located within areas designated as a Very High Fire Hazard Severity Zone or Fire Zone 4 in the Los Angeles County Building Code (Section 26.150, Los Angeles County Code Title 26 Building Code)."

Fuel modification plans are required for all projects and/or structures receiving tentative map approval or building permits on or after January 7, 1996. Tentative maps approved prior to January 7, 1996 are exempt from these requirements. In addition, any amendment or revisions to such maps which do not require public review would also be exempt.

Description of Fuel Modification Plan

A fuel modification plan identifies specific zones within a property which are subject to fuel modification. A fuel modification zone is a strip of land where combustible native or ornamental vegetation has been modified and/or partially or totally replaced with drought tolerant, fire resistant plants.

Fuel modification plans will vary in complexity and reflect the fire history of the area, the amount and type of vegetation, the arrangement of the fuels, topography, local weather patterns, and construction, design and placement of structures.

Purpose of Fuel Modification

Fuel modification reduces the radiant and convective heat, and provides fire suppression forces a defensible space in which to take action. Fuel modification zones are strategically placed as a buffer to open space, or areas of natural vegetation and generally would occur surrounding the perimeter of a subdivision, commercial development, or isolated development of a single-family dwelling. Modification of combustible vegetation within a development is handled under the "Clearance of Vegetative Growth" section of the Fire Code as it pertains to structures.

Protected Land - Any project located contiguous to protected lands, as defined in Government Code Section 51184, shall be handled on a case-by-case basis as identified within this code section.

Special Constraints - Information regarding physical, environmental, and legal constraints that may compromise the ability to complete the fuel modification requirements of the project should be addressed in the first stages of design and planning, at the time of preliminary review. Alternative solutions to conflicts may include modifications in the zone widths as a result of set backs, structure orientation, building design and materials selection, utilization of streets, parks, golf courses, natural barriers, existing development or increased irrigation zones.

Subdivision Requirements

Current code requirements for subdivisions including access, fire flow, fire sprinklers, water storage and fire resistive construction techniques will be considered and credited, as appropriate, by the Fire Department in establishing the final fuel modification requirements for a project. Alternative fuel modification proposals may be submitted to the Fire Department for review and approval.

Extreme Fire Hazard - If the Fire Department concludes an extreme fire hazard exists on the property, additional mitigation measures may be required. The Fire Department shall review each project on a case-by-case basis to identify the contributing extreme fire hazard conditions including, but not limited to: wind direction and velocity, fuel load, neighboring land uses, terrain, access for firefighting equipment, adequacy of water supply and delivery systems and construction standards. Generally, the Santa Monica Mountains and the south facing slopes of the San Gabriel Mountains are considered to be Extreme Fire Hazard areas.

Submittal Procedures

Fuel modification plans shall be reviewed and approved by the Forestry Division of the Fire Department for reasonable fire safety. Approval of the final fuel modification plan by the Fire Department is required prior to the issuance of a building permit. Property owners located along the perimeter of tracts must submit plans for additional structures for approval by the Fire Department in addition to the building department to ensure compliance with the underlying fuel modification plan (see Exhibit A for a complete checklist of submittal procedures).

Fuel Modification Zones

The size and type of the fuel modification zone(s) will be determined by the Fire Department upon review of the preliminary plans. Fuel modification distances are designed for typical fire weather scenarios and are not intended to be a blanket requirement for all fuel modification plans. Planting of low-volume, fire retardant, drought tolerant plants may also be required for erosion control (see Exhibit B Estimated Fuel Modification Distance Chart to compute the approximate total fuel modification zone distance for your project).

Per Section 1117.2.3 "Extra Hazard" of the County of Los Angeles 1996 Fire Code, "The governing body finds that in many cases of extra-hazardous situations, a firebreak around structures of only 30 feet (9144mm) is not sufficient and that a firebreak of 50 feet (15240mm) or more may be necessary. If the chief or commissioner finds that because of the location of any building or structure, and because of other conditions, a 30-foot (9144 mm) firebreak around such structure as required by Section 1117.2.2 is not sufficient, he may notify all affected owners of property that they must clear all flammable vegetation and other combustible growth or reduce the amount of fuel content for a distance greater than 30 feet (9144 mm), but not to exceed 200 feet (60960mm)." Fire Code distances are measured on the horizontal or straight out from the structure rather than on the slope.

Zone Delineation

The fuel modification plan shall identify one or more of the following zones: A-Setback Zone; B-Irrigated Zone; C-Thinning Zone; D- Interface Thinning Zone based upon preliminary plan review by the Forestry Division of the Fire Department (see Exhibit C). The actual width of zone(s) will depend on the ability to provide desirable clearance distances.

Zone A - Setback Zone

Purpose

- Provides defensible space for fire suppression forces.
- Offers protection from intense flames and sparks or embers carried by strong winds common to a wildfire by reducing the probability of ignition through increased moisture content of existing vegetation and removal of fine fuels.

General Requirements

- Zone in closest proximity to the structure.
- Minimum of 20 feet beyond the edge of combustible structures, attached accessory structures, or appendages and projections.
- For purposes of the fuel modification plan, all combustible accessory structures, appendages, or projections within 20 feet of the combustible structure will be considered as attached.
- Most vegetation in this zone is limited to ground covers, green lawns, and a limited number of selected ornamental plants.

Special Requirements

- Combustible structures, attached accessory structures, appendages or projections must comply with building code requirements for the Very High Fire Hazard Severity Zone or Fire Zone 4.
- Combustible detached accessory structures such as patio covers, decks, carports, trellises, or similar accessory structures within 20 feet of a combustible structure must comply with building code requirements for the Very High Fire Hazard Severity Zone or Fire Zone 4.
- Irrigation by automatic or manual sprinkler systems to maintain healthy vegetation with high moisture content.
- Irrigation away from native Oak trees and outside the dripline.
- Pruning of foliage to reduce fuel load, vertical continuity, removal of plant litter and dead wood.
- Complete removal of undesirable plant species (see Appendix I), minimal allowance for retention of selective native vegetation.
- Plants in this zone shall be highly fire resistant and selected from the approved planting list for the setback zone and given geographical area (see Appendix II).
- Target trees are not allowed within ten feet of combustible structures. Other tree species may be allowed pursuant to the Fire Code regarding clearance of brush and vegetative growth but are not recommended.
- Special consideration will be given for rare and endangered species, geologic hazards, tree ordinances, or other conflicting restrictions.

Maintenance

- Requires continual removal and/or thinning of undesirable combustible vegetation, replacement of dead/dying fire resistant plantings, maintenance of the operational integrity and programming of the irrigation system.
- Regular trimming to prevent ladder fuels.

Zone B Irrigation Zone

Purpose

- Provide defensible space for fire suppression forces.
- Augment irrigation and planting required by the County Department of Public Works and City Public Works Departments relating to remanufactured slopes and landscape ordinances.

General Requirements

- May have isolated detached accessory structures such as patio covers, decks, carports, trellises, and other similar accessory structures provided they meet building code requirements.
- Some native or existing vegetation may remain if spaced according to planting guidelines (see Appendix III) and maintained free of dead wood, and individual plants are thinned to a percentage as specified during the preliminary review to reduce the fuel load.
- A large percentage of existing vegetation may be removed and replaced with appropriate irrigated fire resistant and drought tolerant plant material.

Specific Requirements

- With the exception of specimen native vegetation approved for retention, irrigated surface fuels shall be maintained at a height not to exceed 18 inches.
- Irrigation shall be designed to supplement native vegetation, and establish and maintain planted natives and ornamentals.
- Any plants selected for planting in this zone shall be selected from the approved plant list for the setback, irrigated, or thinning zone for a given geographical area (see appendix II).
- Planting will be in accordance with planting guidelines and spacing standards established in these guidelines to avoid erosion (see Appendix III).
- Special consideration will be given for rare and endangered species, geologic hazards, tree ordinances, or other conflicting restrictions as identified in the environmental documents submitted for project approval, or upon further review.
- Removal of undesirable plant species (see Appendix I) as determined during preliminary review.

Maintenance

- Requires continual removal and/or thinning of undesirable combustible vegetation, replacement of dead/dying fire resistant plantings, maintenance of the operational integrity and programming of the irrigation system.
- Regular trimming to prevent ladder fuels.

- Compliance with the Fire Code is a year round responsibility. Enforcement will occur following inspection by the Fire Department annually or as needed. Annual inspections are generally conducted following natural drying of fine fuels. This occurs between the months of April and June.

Zone C Thinning Zone

Purpose

- Designed to slow the rate of spread, reduce flame lengths, and intensities of the fire prior to reaching the irrigated area.
- Designed to eliminate the spread of fire from one plant to another via ladder fuels and eliminate horizontal continuity by properly spacing remaining vegetation and limiting large masses of unbroken vegetation.
- Reduce the fuel load of a wildland area adjacent to a structure, thereby, reducing the radiant and convective heat of wildland fires.

General Requirements

- Predominantly existing vegetation with removal of the majority of undesirable plant species including trees and tree-form shrubs (see Appendix I).
- Reduce fuel loading by reducing the fuel in each remaining shrub or tree without substantial decrease in the canopy cover or removal of soil holding root systems.
- Some replacement planting with ornamental or less flammable native species to meet minimum slope coverage requirements of city or county public works, landscape or hillside ordinances.
- Natural vegetation is thinned by reduced amounts as the zone moves away from the development.

Specific Requirements

- Removal of all dead and dying vegetation, all fine fuels reduced to 3 inches in height.
- Any plants selected for planting in this zone will be chosen from the approved plant list for the setback, irrigated, or thinning zone for a given geographical area (see Appendix II).
- Special consideration will be given for rare and endangered species, geologic hazards, tree ordinances, or other conflicting restrictions as identified in the environmental documents submitted for project approval review.

Maintenance

- Requires annual removal and/or thinning of undesirable combustible vegetation, replacement of dead/dying fire resistant plantings, maintenance of the operational integrity and programming of the irrigation system.
- Compliance with the Fire Code is a year round responsibility. Enforcement will occur following inspection by the Fire Department annually or as needed. Annual inspections are generally conducted following natural drying of fine fuels. This occurs between the months of April and June.
- Debris and trimmings produced by thinning and pruning shall be removed from the site or chipped and evenly dispersed in the same area to a maximum depth of 5 inches.

Zone D Interface Thinning Zone

Purpose

- Designed to slow the rate of spread, reduce flame lengths, and intensities of the fire prior to reaching the irrigated area.
- Designed to eliminate the spread of fire from one plant to another via ladder fuels and eliminate horizontal continuity by properly spacing remaining vegetation and limiting large masses of unbroken vegetation.
- Reduce the fuel load of a wildland area adjacent to a structure, thereby, reducing the radiant and convective heat of wildland fires.

General Requirements

- Area serving as the initial interface between wildland areas and fuel modification zones.
- Consists of native vegetation individually thinned to reduce foliage mass or fuel loading. This does not necessarily require removing plants, but thinning those that exist.
- Proper thinning and spacing of remaining trees and tree-form native shrubs, reducing fuel load without overly exposing the soil to the threat of erosion.
- Natural vegetation is thinned by reduced amounts as the zone moves away from the development.

Specific Requirements

- Maintain sufficient cover to prevent erosion without requiring planting.
- Special consideration will be given for rare and endangered species, geologic hazards, tree ordinances, or other conflicting restrictions as identified in the environmental documents submitted for project approval.

- Any plants selected for planting in this zone shall be chosen from the approved plant list for the setback, irrigated, or thinning zone for a given geographical area (see Appendix II).
- Special consideration will be given for rare and endangered species, geologic hazards, tree ordinances, or other conflicting restrictions as identified in the environmental documents submitted for project approval review.

Maintenance

- Correct maintenance of this zone requires removal of overgrowth and major pruning every three to five years.
- Debris and trimmings produced by thinning and pruning shall be removed from the site or chipped and evenly dispersed in the same area to a maximum depth of 5 inches.
- Compliance with the Fire Code is a year round responsibility. Enforcement will occur following inspection by the Fire Department annually or as needed. Annual inspections are generally conducted following natural drying of fine fuels. This occurs between the months of April and June.

Off-Site Fuel Modification Option

Off-site fuel modification is generally not recommended due to problems inherent with enforcement of regulations on adjacent property and the potential for confusion regarding responsibility for fuel modification areas outside legal ownership. However, if the applicant should voluntarily request and obtain permission from neighboring property owners for fuel modification, it shall be taken into consideration by the Fire Department as part of the project's fuel modification plan.

The intent of these guidelines is to provide for fuel modification within the proposed project's or structure's property boundaries. If the fuel modification zones, consistent with these guidelines, cannot be fully contained on the subject property, on-site alternative means and methods should be sought to provide an equal level of protection from wildland fire. Alternative means and methods may include, but are not limited to, the following: 1) increasing the width of the setback or irrigated zones to reduce thinning zone dimensions, 2) enhancing fire protection construction techniques, 3) structure orientation, and 4) construction of non-combustible fencing material.

Compliance

Construction Phase - Plan review and approval is required for issuance of a building permit(s). Implementation of the fuel modification plan (other than that which will be assigned to the home buyer) is required prior to the issuance of Certificate of Occupancy or building final.

Long-Term Maintenance/Enforcement - The builder/developer is responsible for providing new property owners with recorded CC&R's or disclosure statements identifying the responsibilities for maintaining the fuel modification zone(s) within their property as defined in the approved Fuel Modification Plan. Approved Fuel Modification Plans will be reviewed annually as part of the brush clearance inspection process, by local fire station personnel, brush clearance office personnel, fire prevention or forestry personnel.

EXHIBIT A
**CHECKLIST FOR PRELIMINARY REVIEW TO DETERMINE
REQUIRED FUEL MODIFICATION ZONES**

A preliminary review of your project will determine the site specific requirements necessary to assure reasonable fire safety. All required documents for a preliminary review shall be submitted to the Fuel Modification Unit of the County of Los Angeles Fire Department at the time of tentative map processing. The Preliminary Fuel Modification Plan review will be required prior to final map approval. Approved revisions to the fuel modification plans will be allowed up to the point of issuance of building permit. For information regarding fuel modification plans, please contact the Fuel Modification Unit of the Forestry Division at (909) 620-8287 or (213) 881-2481.

Tentative Map

1. The applicant shall submit three (3) sets of site plans indicating building envelopes to the Fire Department during the tentative map approval process. Additional copies may be submitted for stamp approval as the applicant deems necessary to meet the requirements of other agencies.
2. Indicate on an additional topographic map: project location, legal description, and tentative map.
3. Indicate existing land uses contiguous in all directions up to two hundred (200) feet outside of the project boundaries (i.e., construction, natural vegetation, roads, parks, etc.)
4. Provide photographs and a photo orientation map, of the area which show the type, size, and density of existing vegetation.
5. Indicate who will be responsible for the long-term maintenance of the fuel modification zones (property owner, adjacent property owner, landscape maintenance district, Homeowner's Association, etc.)
6. Submit copies of environmental documents which may disclose conflict with fuel modification plan requirements (i.e., endangered species habitat mitigation, Oak tree preservation, etc.)
7. After review by the Fire Department of all documents provided by the applicant, the Fire Department will meet with the applicant to discuss the recommended fuel modification requirements for the project and finalize the approval of the preliminary fuel modification plan.

NOTE: Documents prepared specifically to meet requirements of other agencies may be submitted, provided the necessary information is included. Approval of a fuel modification plan by the County of Los Angeles Fire Department does not eliminate the requirement or the responsibility of the applicant to obtain appropriate environmental, grading, building, and zoning clearances or permits from the agencies having jurisdiction.

CHECKLIST FOR FINAL FUEL MODIFICATION PLAN

Building Permit

1. Prior to the issuance of a building permit the applicant will submit three (3) sets of blue line plans to the Fire Department showing the final fuel modification requirements. Additional copies may be submitted for stamp approval as the applicant deems necessary to meet the requirements of other agencies. The plan package shall include the following:
 - a. **Irrigation Plan** - The irrigation plan should indicate the areas to be irrigated and the type of irrigation system to be installed.
 - b. **Landscape Plan** - The landscape plan should identify the location and type of all supplemental plantings and location type, and the size of plants remaining on site following modification. The plan should include a complete list of all plants identified by common and scientific name. The landscape plan should also include any specific maintenance intended for the site such as special pruning, mowing, etc.
 - c. **Zone Delineation** - Zone delineation and fuel modification actions planned and completed may be indicated on the landscape plan or a separate plan.
 - d. **Identification of Responsibility** - A letter identifying parties responsible for installation and/or maintenance such as homeowners, homeowner associations, or land management districts.
2. Prior to the issuance of a building permit, the Fire Department must review and approve the final fuel modification plan package submitted by the applicant. Applicants should expect review within 10 working days of the department's receipt of a complete package.

Certificate of Occupancy/Building Final

1. Final approval of fuel modification zone implementation will be obtained following inspection by the fire department. Applicants shall request inspection of the fuel modification requirements by the Fire Department three business days prior to anticipated issuance of a certificate of occupancy or building final. The Fire Department shall respond to an inspection request within three business days.
2. A copy of the recorded CC&R's pertaining to fuel modification maintenance requirements and responsibilities will be provided to the Forestry Division prior to issuance of Certificate of Occupancy.

NOTE: The review and approval process outlined in these guidelines is designed to assist an applicant through the fuel modification process. If questions or conflicts arise, applicants should request assistance from the Fire Department's Brush Clearance Section Manager. If additional clarification is necessary or special circumstances arise, applicants may seek assistance or policy interpretation from the Chief of the Forestry Division.

EXHIBIT B

ESTIMATED FUEL MODIFICATION DISTANCE CHART (EFMD)

STRUCTURE CONSTRUCTION			SCORE
GOOD/CURRENT FIRE ZONE 4 OR VHFHSZ REQUIREMENTS			1
MODERATE			5
POOR			10
FUELS			
PRIMARILY GRASSLAND			5
COASTAL SAGE SCRUB/OAK WOODLAND			10
CHAPARRAL			15
SLOPE*	DOWN-SLOPE	UP-SLOPE	
		0 - 20 DEGREES	1
	0 - 20 DEGREES	20 - 40 DEGREES	2
	20 - 40 DEGREES	40 - 60 DEGREES	4
	40 - 60 DEGREES	60 < DEGREES	8
	60 < DEGREES		16
ASPECT**			
NORTH			1
EAST			2
WEST			4
SOUTH			8
FIRE TOPOGRAPHY***			
- DISTANCE FROM SLOPE, CHIMNEYS, SADDLES, CANYONS			
250 - 300			1
200 - 250			2
150 - 200			3
100 - 150			4
50 - 100			5
30 - 50			10
< 30			15
FIRE HISTORY/ POTENTIAL			
- HISTORICAL FIRE PATTERNS/INTENSITY			
LOW			5
MODERATE			10
HIGH			15
TOTAL			

ESTIMATED FUEL MODIFICATION DISTANCE****		EFMD
TOTAL	DISTANCE	
14-24	50'	
25-34	100'	
35-49	150'	
50-69	200'	
70 +	300'	

* SELECT CATEGORY THAT CORRESPONDS TO THE LOCATION OF THE REQUIRED MODIFICATION

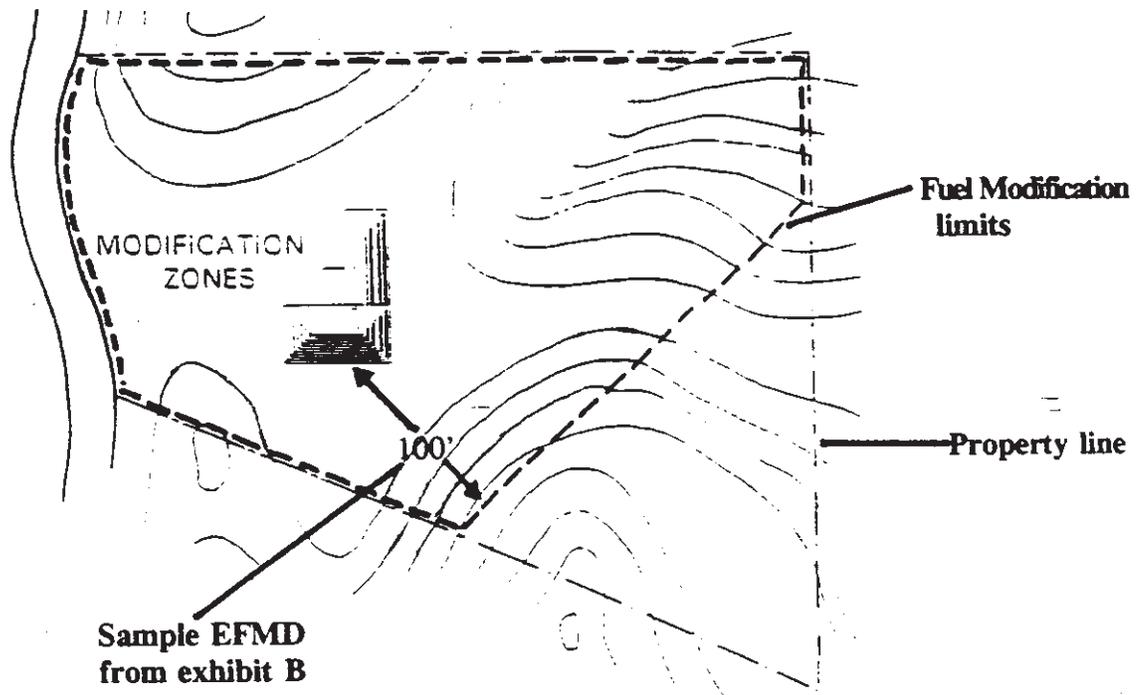
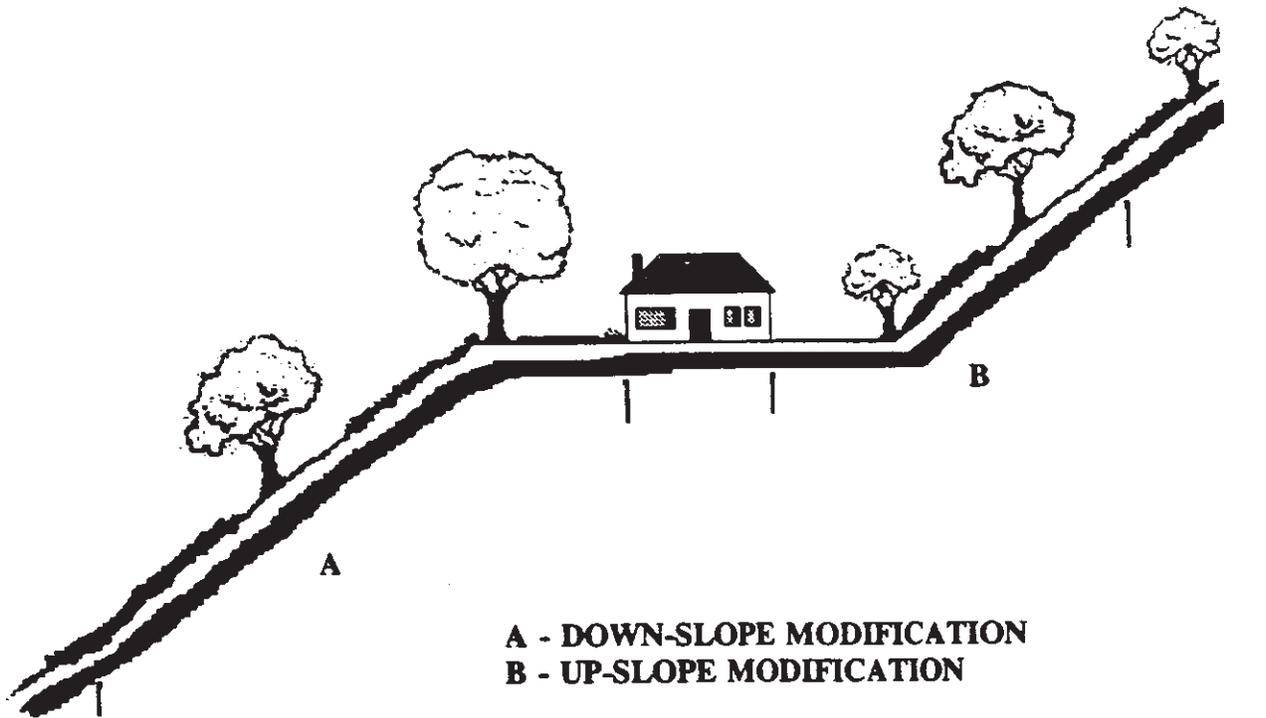
** VALUES ASSIGNED MAY VARY, BASED ON PREVAILING WEATHER PATTERN AND FIRE HISTORY

*** SUBDIVISIONS SHOULD ENTER A VALUE OF (5) FOR THIS CATEGORY

**** MEASUREMENT IN FEET TAKEN ALONG SLOPE (HYPOTENUSE)

EXHIBIT C

SAMPLE FUEL MODIFICATION DIAGRAMS



The actual amount of total fuel modification will be determined on a case by case basis utilizing Exhibit B, Estimated Fuel Modification Distance(EFMD). The necessary zone(s) and their width will be determined during the preliminary review process.

APPENDIX I UNDESIRABLE PLANT LIST

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, and pitch. Certain native plants are notorious for containing these volatile substances.

Plants with these characteristics should not be planted in fire hazard areas. Should these species already exist within these areas, they should be removed because of the potential threat they pose to any structures. They are referred to as target species since their complete or partial removal is a critical part of hazard reduction. The following is a partial list of plants that should be avoided near structures.

UNDESIRABLE PLANT SPECIES (TARGET SPECIES)

Natives:

Adenostoma fasciculatum - Chamise
Adenostoma sparsifolium - Red shank
Artemisia californica - California Sagebrush
Eriogonum fasciculatum - Common Buckwheat
Salvia spp.- Sage

Ornamentals:

Cortaderia spp. - Pampas Grass
Cupressus spp. - Cypress
Eucalyptus spp. - Eucalyptus*
Juniperus spp. - Juniper
Pinus spp. - Pine

* Except as permitted in the planting list

Others - Other plants may be considered to be undesirable because of their ability to naturalize and become a pest. These types of plants should be avoided, especially in sensitive riparian or coastal areas where they could become established and compete with native vegetation.

Plants should fit the location and situation. Avoid using shallow rooted ground covers on steep slopes. Iceplant, while an effective ground cover on flat surfaces would be undesirable on a steep slope because it's shallow rooted nature may cause it to slide off the slope if the root zone becomes saturated during a rain storm. This would expose the bare soil to erosion.

Care should be taken to avoid erosion problems created or exacerbated by total vegetation removal. In areas where target species comprise the total vegetation, partial removal is recommended, with replacement planting using desirable species as the long range goal.

APPENDIX II DESIRABLE PLANT LIST

Desirable Qualities for Landscape Plants

- Ability to store water in leaves or stems.
- Produces limited dead and fine material.
- Extensive root systems for controlling erosion.
- High levels of salt or other compounds within its tissues that can contribute to fire resistance.
- Ability to withstand drought.
- Prostrate or prone in form.
- Ability to withstand severe pruning.
- Low levels of volatile oils or resins.
- Ability to resprout after a fire.

PLANT LIST LEGEND

<u>Fuel Mod.Zone</u>	<u>Geographical Area</u>	<u>Water Needs</u>	<u>Evergreen/Deciduous</u>
A - Setback	C-Coastal	H-High	E-Evergreen
B - Irrigated	IV-Interior Valley	M-Moderate	D-Deciduous
C - Thinning	D-Deserts	L-Low	E/D-Partly or
D - Interface		VL-Very Low	Summer Deciduous

Comment Code

1	Not for use in coastal areas	13	Tends to be short lived.
2	Should not be used on steep slopes	14	High fire resistance.
3	May be damaged by frost.	15	Dead fronds or leaves need to be removed to maintain fire safety.
4	Should be thinned bi-annually to remove dead or unwanted growth	16	Tolerant of heavy pruning.
5	Good for erosion control.	17	Must be cut back after flowering.
6	Grows best in well drained soils.	18	May require partial shade in desert or valley areas.
7	Produces flowers or fruit that attracts birds and or butterflies.	19	Perennial
8	Adaptability can vary.	20	Tolerates saline soils.
9	Can be used as a lawn substitute.	21	Grows naturally in riparian areas.
10	Showy flowers.	22	Good tree for lawns.
11	Produces edible fruit.	23	Produces habitat or food for wildlife.
12	California native or native cultivar		

The following plant list is provided as a suggested guideline (not exclusive) for fuel modification landscapes within Los Angeles County. Plants not listed (grasses, annuals etc.) may be used if approved with the fuel modification plan.

The desirable planting list is based on comments from numerous professionals and public agencies, Sunset Western Garden Book, Bob Perry's Landscape Plants for Western Regions, and the California Department of Water Resources study entitled, WUCOLS (Water Use Classification of Landscape Species). The plant list is arranged by fuel modification zone, geographical area, and plant type and includes a comment code to assist in plant selection and maintenance requirements.

GROUNDCOVERS

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Abelia grandiflora</i> 'Prostrata'	Prostrate Glossy Abelia	A,B	M	1 - 2'	3 - 4'	E	C,IV - 3
<i>Achillea tomentosa</i>	Woolly Yarrow	A,B,C	L	6 - 10"	6 - 12"	E	C,IV - 9,19
<i>Aeonium</i> species	NCN	A,B,C	L	Varies	Varies	E	C,IV - 2,3,8,14
<i>Ajuga reptans</i>	Carpet Bugle	A	H	4 - 6"	2 - 4"	E	C,IV - 2,18,19
<i>Aptenia cordifolia</i>	Red Apple Ice Plant	A,B	M,L	- 12"	varies	E	IV,D - 1,2,3,19
<i>Arctostaphylos</i> species	Manzanita	B,C,D	L,VL	Varies	Varies	E	Varies
<i>A. edmundsii</i>	Little Sur Manzanita	B,C,D	L,VL	1 - 2'	4 - 6'	E	C,IV - 4,6,12
<i>A. 'Emerald Carpet'</i>	Emerald Carpet Manzanita	B,C,D	L,VL	1'	4 - 6'	E	C,IV - 4,6,12
<i>Arctotheca calendula</i>	Cape Weed	A,B	M,L	-12"	-18"	E	C,IV,D - 3,7,10,19
<i>Artemisia californica</i> 'cultivars'	Sagebrush - Prostrate Forms	B,C,D	L,VL	varies	varies	E	C,IV,D - 4,6,8,12,23
<i>A. caucasica</i>	Silver Spreader	B,C,D	L,VL	3-6"	2'	E	C,IV,D - 4,6
<i>Asarum caudatum</i>	Wild Ginger	A	M,H	7-10"	2'	D	C,IV - 3,18,19
<i>Atriplex semibaccata</i>	Creeping Saltbrush	B	L,VL	1'	1-5'	E	C,IV,D - 13,20
<i>Baccharis pilularis</i>							
<i>B.p. 'Pigeon Point'</i>	Dwarf Coyote Brush	B,C,D	L,VL	12-24"	-6'	E	C,IV,D - 4,5,12
<i>B.p. 'Twin Peaks'</i>	Dwarf Coyote Brush	B,C,D	L,VL	12-24"	-6'	E	C,IV,D - 4,5,12
<i>Cerastium tomentosum</i>	Snow-in-Summer	A,B	M,L	6-8"	2-3'	E	C,IV,D - 10,19
<i>Chamaemelum nobile</i>	Chamomile	A,B	M	6-8"	-12"	E	C,IV,D - 9,16,19
<i>Cistus salviifolius</i>	Sageleaf Rockrose	B,C	L,VL	1-2'	6'	E	C,IV,D-4,5,6,7,10,16,20
<i>C. 'Sunset'</i>	Rockrose	B,C	L,VL	1-2'	6-8'	E	C,IV,D-4,5,6,7,10,16,20
<i>C. 'Warley rose'</i>	Rockrose	B,C	L,VL	1'	4'	E	C,IV,D-4,5,6,7,10,16,20
<i>Coprosma kirkii</i>	NCN	B	M,L	-2'	6-8'	E	C,IV - 3,4,5,8,18,20
<i>Coreopsis auriculata</i> 'Nana'	NCN	A,B,C	L,VL	5-8"	-2'	E/D	C,IV - 3,8,19
<i>Cotoneaster</i>							
<i>C. adpressus praecox</i>	Cotoneaster	B	M,L	-18"	-6'	D	C,IV,D - 2
<i>C. salicifolius</i> 'Emerald Carpet'	Prostrate Willowleaf Cotoneaster	B	M,L	12-15"	-8'	E	C,IV,D - 4
<i>C.s. 'Repens'</i>	Prostrate Willowleaf Cotoneaster	B	M,L	-6"	-6'	E	C,IV,D - 4
<i>Dalea greggii</i>	Trailing Indigo Bush	B	L,VL	12-18"	5-10'	E	C,IV - 6
<i>Dichondra micrantha</i>	Dichondra	A,B	H,M	-6"	-2'	E	C,IV - 9
<i>Duchesnea indica</i>	Indian Mock Strawberry	A,B	L	-8"	-4'	E	C,IV,D - 11,16,19
<i>Dymondia margaretae</i>	NCN	A,B	M,L	-3"	12-24"	E	C,IV - 3,8
<i>Epilobium californica</i>	California Fuchsia	B,C,D	L,VL	1-2'	3-5'	E/D	C,IV,D-4,5,7,10,12,13,23
<i>Erigeron glaucus</i>	Seaside Daisy	A,B,C,D	M,L	10-12"	-2'	E	C,IV-3,6,8,10,12,18,19,20
<i>E. karvinskianus</i>	Mexican Daisy	A,B,C,D	M,L	10-20"	-3'	E	C,IV-3,6,8,10,18,19,20
<i>Euonymus fortunei</i> 'Colorata'	Purple-Leaf Winter Creeper	B	M	1-2'	-6'	E	IV - 1,5,8,16
<i>Festuca cinerea</i> (ovina'Glaucua')	Blue Fescue	A,B	M,L	-12"	-2'	E	C,IV,D - 4
<i>F. rubra</i>	Red Fescue	A,B	M,L	-16"	-30"	E	C,IV,D - 4,9
<i>Fragaria chiloensis</i>	Wild Strawberry	A,B,C,D	L,VL	6-12"	-24"	E	C,IV,D - 4,10,11,12,20
<i>Gazania rigens</i> var <i>leucolaena</i>	Trailing Gazania	A,B	L	6-10"	-24"	E	C,IV,D - 10,19
<i>Glechoma hederacea</i>	Ground Ivy	A	M	3-6"	-18"	E/D	C,IV,D - 8,19
<i>Hedera helix</i> & varieties	English Ivy	A,B	M,L	6-18"	-4'	E	IV,D - 1,4,5,16
<i>Helianthemum nummularium</i>	Sunrose	B	L	6-8"	-3'	E	C,IV,D - 6,10
<i>Herniaria glabra</i>	Green Carpet	A	M	2-3"	-16"	E	C,IV,D - 8
<i>Hypericum calycinum</i>	Aaron's Beard	B	M,L	6-12"	-3'	E	C,IV,D - 4,5,7,16
<i>H. coris</i>	NCN	B	M,L	6-12"	-2'	E	C,IV,D - 4,5,7,16
<i>Iberis sempervirens</i>	Evergreen Candytuft	A,B	M	6-12"	-6-12"	E	C,IV,D - 10,19
<i>Iva hayesiana</i>	Poverty Weed	B,C,D	L,VL	2-3'	4-5'	E	C,IV,D - 4,5,12,16,23
<i>Laurentia fluvialilis</i>	Blue Star Creeper	A	M	2-4"	6-12"	E	C,IV - 8,19
<i>Lonicera japonica</i>	Japanese Honeysuckle	B	M	1-2'	6-10'	E	IV - 1,5,7,10,16
<i>Lysimachia nummularia</i>	Moneywort	A	H,M	2-6"	-2'	E	C,IV - 18,19

GROUNDCOVERS cont'd

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Mahonia aquifolium</i> 'Compacta'	Compact Oregon Grape	A,B	M,L	1-2'	2-3'	E	C,IV - 4,7,12,18,23
<i>M. repens</i>	Creeping Mahonia	A,B	M,L	2-3'	2-3'	E	C,IV - 4,7,12,18,23
<i>Myoporum</i> 'Pacificum'	Pacific Myoporum	B	M,L	2-3'	-30'	E	IV - 1,4,5,16
<i>M. parvifolium</i>	NCN	B	M,L	4-6"	9'	E	IV - 1,4
<i>Nandina domestica</i>							
'Harbour Dwarf'	Dwarf Heavenly Bamboo	A,B	M,L	1 1/2 -2'	2-3'	E	C,IV,D - 15
<i>Oenothera berlandieri</i>	Mexican Evening Primrose	B,C,D	L,VL	10-12"	4'	E	IV,D - 1,4,7,10,17,19
<i>O. stubbei</i>	Baja Evening Primrose	A,B,C,D	L,VL	5"	2'	E	IV,D - 7,19
<i>Ophiopogon japonicus</i>	Mondo Grass	A	M	8-12"	12-24"	E	C,IV - 18
<i>Osteospermum fruticosum</i>	Trailing African Daisy	A,B	M	-18"	-4'	E	IV - 1,10,19
<i>Pelargonium peltatum</i>	Ivy Geranium	A,B	M	-2'	-4'	E	IV - 1,3,7,10,19
<i>P. tomentosum</i>	Peppermint-Scented Geranium	A,B	M	-18"	2-4'	E	IV - 1,3,7,10,19
<i>Phyla nodiflora</i> (<i>Lippia repens</i>)	Lippia	A,B	M,L	2-15"	-3'	E/D	C,IV,D - 9,16,19
<i>Polygonum capitatum</i>	Pink Clover	A,B	M,L	-18"	-2'	E	IV,D - 1,10,19
<i>Potentilla tabernaemontanii</i>	Spring Cinquefoil	A,B	M,L	2-6"	-12"	E	C,IV,D - 9,10,19
<i>Ribes viburnifolium</i>	Catalina Perfume	A,B,C,D	L,VL	-3'	-3'	E	C,IV - 12,18,23
<i>Rosmarinus officinalis</i>							
R.o. 'Huntington Blue'	NCN	B	L	-18"	-4'	E	C,IV,D - 4,5,16
R.o. 'Prostratus'	Prostrate Rosemary	B	L	-24"	-6'	E	C,IV,D - 4,5,16
<i>Salvia sonomensis</i>	Creeping Sage	B,C,D	L	8-12"	3-4'	E	C,IV - 6,12,13,23
<i>Santolina chamaecyparissus</i>	Lavender Cotton	A,B	L	-24"	-3'	E	C,IV,D - 10
<i>S. rosmarinifolius</i> (<i>virens</i>)	Green Lavender Cotton	A,B	L	-24"	-3'	E	C,IV,D - 10
<i>Sedum</i> species	Stonecrops	A,B	L,VL	Varies	Varies	E	C,IV - 2,8,14
<i>Senecio mandraliscae</i>	NCN	A,B	M,L	-18"	-5'	E	C,IV - 3,14,19
<i>S. serpens</i>	Blue Chalkstics	A,B	M,L	-12"	-3'	E	C,IV - 3,14,19
<i>Scaevola</i> 'Mauve Clusters'	NCN	A,B	M,L	4-6"	3-4'	E	C,IV - 6,18,19
<i>Soleirolia soleirolii</i>	Baby's Tears	A	H,M	3-6"	-18"	E	C,IV - 3,18,19
<i>Teucrium chamaedrys</i>							
'Prostratum'	Prostrate Germander	A,B	M,L	4-6"	-3'	E	C,IV,D - 4,16
<i>T. cossonii</i>	NCN	A,B	L	4-6"	-2'	E	C,IV - 6,10
<i>Thymus praecox arcticus</i>	Mother of Thyme	A,B	M,L	2-6"	-18"	E	C,IV,D - 8
<i>T. pseudolanuginosus</i>	Woolly Thyme	A,B	M,L	2-3"	-12"	E	C,IV,D - 8
<i>Trachelospermum</i>							
<i>jasminoides</i>	Star Jasmine	B	M,L	-2'	4-5'	E	C,IV,D - 5,7,10,16
<i>Trifolium fragiferum</i>							
Var. O'connor's	O'Connor's Legume	B	M,L	6-15"	-6'	E	C,IV,D - 5,9,16,19
<i>Verbena hybrida</i>	Garden Verbena	A,B	L,VL	6-12"	1 1/2-3'	E	C,IV,D - 3,7,10,13
<i>V. peruviana</i>	NCN	A,B,C	L,VL	-8"	-2'	E	C,IV,D - 7, 10
<i>V. pulchella gracilior</i>	Moss Verbena	A,B	L,VL	12-15"	2-3'	E	C,IV,D - 8,10,19
<i>V. tenuisecta</i>	Moss Verbena	A,B	L,VL	12-15"	2-3'	E	C,IV,D - 8,10,19
<i>Wedelia trilobata</i>	Wedelia	B	M,L	-12"	4-6'	E	C,IV,D - 3,16, 20
<i>Zoysia tenuifolia</i>	Korean Grass	A	M,L	-6"	-18"	E	C,IV,D - 9

SHRUBS

PERENNIALS/SUCCULENTS

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Acanthus mollis</i>	Bear's Breech	A,D	H,M	-4'	4-6'	E/D	C,IV,D - 3,8,14,16,17,18,19
<i>Achillea filipendulina</i>	Fernleaf Yarrow	B,C	L,VL	4-5'	2'	E	C,IV,D - 10,16,17,19
<i>A. millefolium</i>	Common Yarrow	A,B,C	L,VL	-3'	2'	E	C,IV,D - 10,16,17,19
<i>Aeonium species</i>	NCN	A,B	L	varies	varies	E	C,IV - 3,8,14
<i>Agarathus species</i>	Lily-Of-The-Nile	A,B	M	varies	varies	E/D	C,IV - 3,4,7,10,14,19
<i>Agave species</i>	Agave	V,L,L	L,VL	varies	varies	E	C,IV,D - 3,10,14,17
<i>Aloe species</i>	Aloe	A,B	L,VL	varies	varies	E	C,IV, - 3,7,8,14
<i>Anigozanthos flavidus</i>	Kangaroo Paw	A,B	M,L	3-5'	3'	E	C,IV - 3,6,7,10,19
<i>A. manqlesii</i>	NCN	A,B	M,L	3'	-3'	E	C,IV - 3,6,7,19
<i>Arbutus unedo 'Compacta'</i>	Dwarf Strawberry Tree	B	M,L	6-8'	-8'	E	C,IV,D - 5,7,11,18,23
<i>A.u. 'Elfin King'</i>	NCN	B	M,L	3-5'	-6'	E	C,IV,D - 5,7,11,18,23
<i>A.u. 'Octoberfest'</i>	NCN	B	M,L	6-8'	-8'	E	C,IV,D - 5,7,11,18,23
<i>Arctostaphylos species</i>	Manzanita	B,C,D	L,VL	varies	varies	E	C,IV,D - 4,6,7,10,12
<i>Artemisia 'Powis Castle'</i>	NCN	B,C	L,VL	-3'	6'	E	C,IV - 4,6,12,23
<i>A. stellerana</i>	Beach Worm Wood	B,C	L,VL	-3'	-3'	E	C,IV - 4,6,12,19,23
<i>Aspidistra elatior</i>	Cast-Iron Plant	A,B	M,L	-30"	-3'	E	C,IV - 3,18,19
<i>Baccharis species</i>		B,C,D	L,VL	varies	varies	E	C,IV,D - 4,5,6,12,21,23
<i>Begonia species</i>	Begonia	A,B	H,M	varies	varies	E	C,IV - 3,8,10,14,18
<i>Berberis thunbergii</i>	Japanese Barberry	B	M,L	4-6'	4-6'	D	C,IV,D - 4
<i>B. thunbergii 'cultivars'</i>		A,B	M,L	varies	varies	D	C,IV,D - 4
<i>Bergenia crassifolia</i>	Winter Blooming Bergenia	A,B	M,L	-20"	-20"	E	C,IV - 3,18,19
<i>Buddleia davidii</i>	Butterfly Bush	B	M,L	-10'	-12'	E/D	C,IV,D - 7,10,16,17
<i>Buxus microphylla japonica</i>	Japanese Boxwood	B	M,L	4-6'	4-6'	E	C,IV,D - 16
<i>B.m. koreana</i>	Korean Boxwood	B	M,L	4-6'	4-6'	E	C,IV,D - 16
<i>Caesalpinia gilliesii</i>	Bird of Paradise Bush	B	L,VL	-10'	-10'	E/D	C,IV,D - 7,10
<i>C. mexicana</i>	Mexican Bird of Paradise	B	L,VL	10-12'	-15'	E/D	C,IV,D - 7,10
<i>C. pulcherrima</i>	Red Bird of Paradise	B	L,VL	-10'	-10'	E/D	C,IV,D - 7,10
<i>Calliandra californica</i>	Baja Fairy Duster	B,C,D	L,VL	-3'	4-5'	E/D	C,IV,D - 4,6,7,10
<i>C. eriophylla</i>	Fairy Duster	B,C,D	L,VL	-3'	4-5'	E/D	C,IV,D - 4,6,7,10,12
<i>Callistemon citrinus 'compacta'</i>	Bottlebrush	B	L,VL	-5'	-5'	E	C,IV,D - 5,7,10,20
<i>Calycanthus occidentalis</i>	Spice Bush	B,C,D	M,L	4-12'	-5'	D	C,IV - 12,18
<i>Carissa macrocarpa</i>							
<i>(grandiflora & 'cultivars')</i>	Natal Plum	A,B	M,L	-7'	-7'	E	C,IV - 4,11,16
<i>Cassia artemisioides</i>	Feathery Cassia	B	L,VL	3-6'	-6'	E	C,IV,D - 10,
<i>Ceanothus species</i>	Wild Lilac	B,C,D	L,VL	varies	varies	E/D	C,IV,D - 4,6,7,10,12,23
<i>Cercocarpus betuloides</i>	Mountain Mahogany	B,C,D	L,VL	5-12'	-10'	E	C,IV,D - 4,6,12,23
<i>Choisya ternata</i>	Mexican orange	B	M	6-8'	-8'	E	C,IV - 10,18
<i>Cistus species</i>	Rockrose	B	L,VL	varies	varies	E	C,IV,D - 4,5,6,10,17,20
<i>Clivia miniata</i>	Clivia	A,B	H,M	2'	2'	E	C,IV - 3,10,14,18,19
<i>Colocasia esculenta (caladium)</i>	Elephant's Ear	A,B	H	-6'	-6'	E/D	C,IV - 3,14,18,19
<i>Comarostaphylis diversifolia</i>	Summer Holly	B,C,D	L,VL	6-10' +	6-8' +	E	C,IV,D - 6,7,12,18,23
<i>Convolvulus cneorum</i>	Bush Morning Glory	B	L	2-4'	2-4'	E	C,IV,D - 6,10
<i>Coprosma pumila</i>	NCN	B	M	-3'	8'	E	IV - 1,4,16,20
<i>C. repens</i>	Mirror Plant	B	M	-10'	-6'	E	IV - 1,4,16,20
<i>Cotoneaster species</i>	Cotoneaster	B	M,L	2-18'	3-15'	E/D	C,IV,D - 4,10,16
<i>Cotyledon species</i>	NCN	A,B	L	1-3'	1-3'	E	C,IV - 3,8,14
<i>Crassula species</i>	NCN	A,B	L	1-9'	1-9'	E	C,IV - 3,8,14
<i>Cyrtomium falcatum</i>	Holly Fern	A,B	H,M	2-3'	3-4'	E	C,IV - 15
<i>Dasyliirion longissima</i>	Mexican Grass Tree	B	L,VL	-10'	8'	E	C,IV,D - 15
<i>D. wheeleri</i>	Sotoi	B	L,VL	-6'	-6'	E	C,IV,D - 15

SHRUBS cont' PERENNIALS/SUCCULENTS

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Dietes bicolor</i>	Fortnight Lily, African Iris	B	M,L	2-3'	2-3'	E	C,IV,D - 4,10,15,19
<i>D. vegeta</i> (iridioides)	Fortnight Lily	B	M,L	-4'	-4'	E	C,IV,D - 4,10,15,19
<i>Echium fatuosum</i>	Pride of Madeira	B	L,VL	-10'	-10'	E	C,IV - 4,6,7,10,19,20
<i>Elaeagnus pungens</i> & cultivars	Silverberry	B	M,L	6-15'	6-15'	E	C,IV,D - 16
<i>Encelia californica</i>	Coast Sunflower	B,C,D	L,VL	3-5'	3-5'	E/D	C,IV - 5,6,10,4,17
<i>E. farinosa</i>	Brittle Bush	B,C,D	L,VL	3-5	3-5	E/D	C,IV,D - 4,5,6,10,12,17
<i>Erigonum giganteum</i>	St. Catherine's Lace	B,C,D	L,VL	-8'	-8'	E	C,IV - 4,6,10,12,19,20
<i>Escallonia species</i>	Escallonia	B	M,L	2-15'	2-10'	E	C,IV - 4,10,16
<i>Euonymus japonica</i> & 'cultivars'	Evergreen Euonymus	B	M	2-10'	-6'	E	C,IV,D - 4,16
<i>Fatsia japonica</i>	Japanese Aralia	A,B	M	5-12'	6-10'	E	C,IV - 18
<i>Fouquieria splendens</i>	Ocotillo	A,B,C,D	VL	8-25'	8-15'	E	IV,D - 6,10,12
<i>Fremontodendron species</i> & 'cultivars'	Flannel Bush	B,C,D	L,VL	5-20'	-15'	E	C,IV,D - 4,6,10,12
<i>Gardenia jasminoides</i>	Gardenia	A,B	H	3-6'	3-5'	E	C,IV - 10,18
<i>Garrya species</i>	Silkassel	B,C,D	M,L	4-8'	4-8'	E	C,IV,D - 4,5,7,10,12
<i>Hakea suaveolens</i>	Sweet Hakea	B	L	10-20'	-15'	E	C,IV - 4,8
<i>Hebe species</i> & 'cultivars'	Hebe	B	M	3-6'	3-6'	E	C,IV - 4,5,7,10,16
<i>Hemerocallis hybrids</i>	Daylily	A,B	M,L	1-6'	2-6'	E/D	C,IV,D - 7,10,17,19
<i>Hesperaloe parviflora</i>	NCN	B,C	VL	3-4'	4-6'	E	IV,D - 6,7,19
<i>Hibiscus rosa-sinensis</i>	Chinese Hibiscus	B	M	-15'	-12'	E	C,IV - 3,7,10
<i>Iris species</i>	Bearded Iris	A,B	M	-30"	-2'	E	C,IV,D - 10
<i>I. douglasiana</i>	Douglas Iris	A,B,C	M,L	-2'	-2'	E	C,IV - 10,12,18
<i>Isomeris (Cleome) arborea</i>	Bladderpod	B,C,D	L,VL	3-6'	4-6'	E	C,IV,D - 4,6,10,12,20
<i>Justicia brandegeana</i>	Shrimp Plant	B	M	-3'	-4'	E	C,IV,D - 4,7,10
<i>J. californica</i>	Chuparosa	B,C,D	L,VL	2-5'	-4'	D	IV,D - 4,6,7,10,12
<i>Keckiella cordifolia</i>	Heart-Leaved Penstemon	B,C,D	L,VL	5-6'	8-10'	E/D	C,IV - 4,7,12
<i>Kniphofia uvaria</i>	Red-Hot Poker	A,B	L	2-3'	3-4'	E	C,IV,D - 3,7,10,19
<i>Larrea tridentata</i>	Creosote Bush	B,C,D	VL	4-8'	4-8'	E	IV,D - 6,12,23
<i>Lavandula angustifolia</i>	English Lavender	B	L	3-4'	3-4'	E	C,IV,D - 4,6,7,10,17
<i>L. dentata</i>	French Lavender	B	L	3'	3'	E	C,IV,D - 4,6,7,10,17
<i>L. intermedia</i>	Lavandin	B	L	1-2'	2-3'	E	C,IV,D - 4,6,7,10,17
<i>L. stoechas</i>	Spanish Lavender	B	L	2-3'	3'	E	C,IV,D - 4,6,7,10,17
<i>Leonotis leonurus</i>	Lion's Tail	B	L	3-6'	4-6'	E	C,IV,D - 3,7,10,17
<i>Leucophyllum candidum</i>	Violet Silverleaf	B	L,VL	4-5'	4-5'	E	IV,D - 4,6,7,10
<i>L. frutescens</i>	Texas Ranger	B	L,VL	6-8'	6-8'	E	IV,D - 4,6,7,10
<i>L. laevigatum</i>	Chihuahuan Sage	B	L,VL	3-4'	4-5'	E	IV,D - 4,6,7,10
<i>Limonium perezii</i>	Sea Lavender	A,B	L	-2'	-2'	E	C,IV - 3,10,15,19,20
<i>Liriope muscari</i>	Big Blue Lily Turf	A,B	M	1-2'	2'	E	C,IV - 18
<i>Lobelia laxiflora</i>	Mexican Bush Lobelia	B	L	2-3'	4-6'	E	C,IV,D - 4,7,10
<i>Lupinus species</i>	Lupine	B,C,D	L,VL	varies	varies	E/D	C,IV,D - 4,6,7,10,12,17
<i>Mahonia aquifolium</i>	Oregon Grape	B,C,D	M,L	6-8'	6-8'	E	IV,D - 4,6,11,12,18,23
<i>M. fremontii</i>	Desert Mahonia	B,C,D	L	3-12'	4-8'	E	C,IV,D-4,6,10,11,12,23
<i>M. 'Golden Abundance'</i>	NCN	B,C,D	M,L	5-6'	6'	E	IV,D-4,6,10,11,12,18,23
<i>M. lomarifolia</i>	Venetian Blind Mahonia	B,C	M,L	6-10'	6-10'	E	C,IV,D - 4,6,11,18,23
<i>M. nevinii</i>	Nevin Mahonia	B,C,D	L	3-10'	6-12'	E	C,IV,D-4,6,10,11,12,23
<i>M. pinnata</i>	California Holly Grape	B,C,D	M,L	4-5'	4-6'	E	C,IV-4,6,10,11,12,18,23
<i>Malva sp.</i>	Mallow	B,C	L	varies	varies	E/D	C,IV,D - 6,7,10,13
<i>Mimulus sp. (Diplacus)</i>	Monkey Flower	B,C,D	L	1-4'	1-4'	E	C,IV,D - 4,6,7,10,12
<i>Myrtus communis 'compacta'</i>	Dwarf Myrtle	B	M	5-8'	5-8'	E	C,IV,D - 16
<i>Nandina domestica</i>	Heavenly Bamboo	B	M	6-8'	4-5'	E	C,IV,D - 4,15

SHRUBS cont' PERRENIAL/SUCCULENTS

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
N.d. 'Compacta'	NCN	B	M	4-5'	3-4'	E	C,IV,D - 4,15
Nephrolepis cordifolia	Southern Sword Fern	A,B	M,L	2-3'	3-6'	E	C,IV - 4,15
Nerium oleander	Oleander	B	M,L	8-20'	10-20'	E	C,IV,D - 10,16
N.o. 'Petite Salmon'	NCN	B	M	3-4'	5-7'	E	C,IV - 3,10,16
Opuntia species	Prickly Pear, Cholla etc.	A,B,C,D	L,VL	varies	varies	E	C,IV,D - 8,12,14,23
Pelargonium species	Geranium	A,B	M,L	varies	varies	E	C,IV - 3,10,19
Penstemon species	Beard Tongue	A,B,C,D	L	varies	varies	E/D	C,IV,D - 7,10,12,17,19
Phlomis fruticosa	Jerusalem Sage	B	M,L	3-4'	3-5'	E	C,IV,D - 6,7,10,17,19
Phormium tenax	New Zealand Flax	B	M	5-9'	6'	E	C,IV,D - 4,19
P.t. 'cultivars'	NCN	B	M	varies	varies	E	C,IV,D - 4,19
Photinia fraseri	Common Photinia	B	M,L	10-15'	10-20'	E	C,IV,D - 4,7,10,16
Pittosporum tobira	Tobira	B	M,L	6-15'+	8-15'	E	C,IV,D - 5,16
P.t. 'Variegata'	NCN	B	M	5-8'	6-8'	E	C,IV,D - 5,16
P.t. 'Wheeler's Dwarf'	Dwarf Pittosporum	A,B	M	1-3'	2-4'	E	C,IV,D - 16
Portulacaria afra	Elephant's Food	B	L	5-12'	6-12'	E	C,IV - 3,14
Punica granatum 'Nana'	Dwarf Pomegranate	A,B	L	3'	4'	D	C,IV,D - 7,11,20
Pyracantha species	Firethorn	B	M	varies	varies	E/D	C,IV,D - 4,16
Rhamnus californica	Coffeeberry	B,C,D	M,L	3-15'	4-15'	E/D	C,IV,D - 12,21,23
R. crocea	Redberry	B,C,D	M,L	2-3'	3'	E	IV - 5,12,23
R.c. ilicifolia	Hollyleaf Redberry	B,C,D	M,L	3-15'	3-15'	E	IV - 5,12,23
Rhaphiolepis indica	India Hawthorn	B	M,L	4-8'	4-8'	E	C,IV,D - 4,5,10
R.i. 'cultivars'	NCN	B	M,L	varies	varies	E	C,IV,D - 5,10
Rhus integrifolia	Lemonade Berry	B,C,D	L	3-10'+	6-20'	E	C,IV - 4,5,12,23
R.(Malosma) laurina	Laurel Sumac	B,C,D	L	6-15'+	6-15'	E	C,IV - 4,5,12,23
R. ovata	Sugar Bush	B,C,D	L	3-15'	6-15'	E	C,IV,D - 4,5,12,23
Ribes aureum	Golden Currant	B,C,D	L	3-6'	3-6'	D	C,IV,D - 7,10,12,23
R. malvaceum	Chaparral Currant	B,C,D	L	6-8'	6-8'	D	IV - 7,10,12,23
R. sanguineum & 'cultivars'	Red Flowering Currant	B,C,D	M,L	4-12'	4-8'	D	C,IV,D - 7,10,12,23
R. speciosum	Fuchsia-Flowering Gooseberry	B,C,D	L	3-6'	3-6'	D	C,IV,D - 4,7,10,12,23
R. viburnifolium	Catalina Perfume	B,C,D	L	3'	12'	E	C,IV - 7,10,12,23
Romneya coulteri	Matilija Poppy	B,C	L	-8'	4'	D	C,IV,D - 5,6,10,12,17
Rosa species	Rose	A,B	M	varies	varies	E/D	C,IV,D - 10,16,17
Salvia species	Sage	B,C,D	L	varies	varies	E/D	C,IV,D - 4,7,10,12,17,23
Simmondsia chinensis	Jojoba	B,C,D	L,VL	3-8'+	4-8'	E	C,IV,D - 4,6,11,23
Strelitzia reginae	Bird of Paradise	B	M	5'	4'	E	C,IV - 3,4,10,18
Trichostema lanatum	Woolly Blue Curls	B,C,D	L,VL	3-5'	5'	E	C,IV,D - 6,7,10,12,17
Tulbaghia violacea	Society Garlic	A,B	M	18'	2'	E/D	C,IV,D - 3,10,19
Viburnum species	Viburnum	B	M	varies	varies	E/D	C,IV,D - 3,7,10
Westringia fruticosa	Coast Rosemary	B	M,L	5-7'	6-12'	E	C,IV,D - 4,6,18
Xylosma congestum	Shiny Xylosma	B	M,L	15'+	15'+	E	C,IV,D - 5,16,18
X.c. 'Compacta'	Compact Xylosma	B	M,L	8-12'	8-12'	E	C,IV,D - 5,16,18
Yucca species	Yucca	B,C,D	L,VL	varies	varies	E	C,IV,D - 6,10,12,15

TREES

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT FT	SPREAD FT	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Acacia farnesiana</i>	Sweet Acacia	B	L	15-20'	15-20'	D	IV,D - 10
<i>A. greggii</i>	Catclaw Acacia	B,C,D	L,VL	15-25'	15-25'	E	IV,D - 10,12,21,23
<i>A. saligna</i>	Willow Acacia	B	L	15-35'	12-25'	E	C,IV,D - 10
<i>A. smallii</i>	NCN	B,C,D	L,VL	15-20'	15-20'	D	C,IV,D - 10,21,23
<i>A. stenophylla</i>	Shoestring Acacia	B	M,L	20-45'	10-20'	E	C,IV,D - 10,22
<i>Acer macrophyllum</i>	Bigleaf Maple	B,C,D	M	30-95'	30-95'	D	C,IV - 12,21,23
<i>A. negundo</i>	Box Elder	B	M,L	-60'	-50'	D	IV,D - 12,23
<i>A. palmatum</i>	Japanese Maple	B	M	-20'+	-20'	D	C,IV - 6
<i>A. saccharinum</i>	Silver Maple	B	M	40-100'	40-100'	D	C,IV,D - 22
<i>Aesculus californica</i>	California Buckeye	B,C,D	M,L	20+	30'	D	C,IV,D - 6,7,10,12,23
<i>Agonis flexuosa</i>	Peppermint Tree	B	M,L	25-35'	25-35'	E	C,IV - 3,22
<i>Albizia julibrissin</i>	Silk Tree	B	M	-40'	40'+	D	C,IV,D - 7,10,22
<i>Alnus cordata</i>	Italian Alder	B	M	40'	25'	D	C,IV,D - 22
<i>A. rhombifolia</i>	White Alder	B	H,M	50-90'	40'	D	IV - 12,21,23
<i>Arbutus 'Marina'</i>	NCN	B	M,L	-40'	-40'	E	C,IV,D - 5,7,10,11,23
<i>A. unedo</i>	Strawberry Tree	B	M,L	12-35'	20-35'	E	C,IV,D - 5,7,10,11,23
<i>Archontophoenix</i>							
<i>cunninghamiana</i>	King Palm	B	M	50'	10-15'	E	C,IV - 3,10,15
<i>Bauhinia variegata</i>	Purple Orchid Tree	B	M	20-35'	35'	E/D	C,IV - 4,10
<i>Betula pendula</i>	European White Birch	B	M	30-40'	30'	D	C,IV,D - 6,22
<i>Brachychiton acerifolius</i>	Flame Tree	B	L	60'	45-50'	D	C,IV,D - 10,22
<i>B. populneus</i>	Kurrajong Bottle Tree	B	L	30-50'	30'	E	C,IV,D - 10,22
<i>Brahea armata</i>	Blue Hesper Palm	B	L,VL	40'	10'	E	C,IV,D - 6,10,15
<i>B. edulis</i>	Guadalupe Palm	B	L,VL	30'	10'	E	C,IV,D - 6,15
<i>Callistemon citrinus</i>	Lemon Bottlebrush	B	M,L	-25'	-15'	E	C,IV,D - 4,7,10
<i>C. viminalis</i>	Weeping Bottlebrush	B	M,L	20-30'	-15'	E	C,IV - 4,7,10
<i>Calodendrum capense</i>	Cape Chestnut	B	M	30'	25-40'	D	C,IV - 7,10
<i>Carya illinoensis</i>	Pecan	B	M,L	70'	70'	D	C,IV,D - 6,11
<i>Cercidium floridum</i>	Blue Palo Verde	B,C,D	L,VL	30'	30'	D	IV,D - 6,10,12,21,23
<i>C. microphyllum</i>	Littleleaf Palo Verde	B,C,D	L,VL	25'	25'	D	IV,D - 6,7,10,12,21,23
<i>Cercis occidentalis</i>	Western Redbud	B,C,D	M,L	20'	20'	D	C,IV,D - 7,10,12,23
<i>Chamaerops humilis</i>	Mediterranean Fan Palm	B	M	20'	20'	E	C,IV,D - 15
<i>Chilopsis linearis</i>	Desert Willow	B,C,D	L	-35'	-35'	D	IV,D - 6,7,10,12,23
<i>Chionanthus retusus</i>	Chinese Fringe Tree	B	M	20'	20'	D	C,IV - 10
<i>Chitalpa tashkentensis</i>	Chitalpa	B	M,L	20-30'	20-30'	D	C,IV,D - 7,10
<i>Chorisia speciosa</i>	Floss Silk Tree	B	M	30-60'	30-40'	D	C,IV,D - 10,22
<i>Cinnamomum camphora</i>	Camphor Tree	B	M,L	50'+	60'+	E	C,IV,D - 22
<i>Cocculus laurifolius</i>	Laurel Leaf Snail Seed	B	M	25'	30'+	E	C,IV,D - 4
<i>Cordyline australis</i>	Giant Dracaena	B	M	30'	15'	E	C,IV,D - 15
<i>Cupaniopsis anacardioides</i>	Carrot Wood	B	M	40'	40'	E	C,IV,D - 20
<i>Dracaena drago</i>	Dragon Tree	B	M,L	20'	20'	E	C,IV - 3,10,14,15
<i>Eriobotrya deflexa</i>	Bronze Loquat	B	M,L	20'	20'	E	C,IV,D - 10
<i>Erythrina species</i>	Coral Tree	B	M,L	Varies	Varies	D	C,IV,D - 3,7,8
<i>Eucalyptus citriodora</i>	Lemon-scented Gum	B	M,L	75-100'	-40'	E	IV,D - 1,7,22
<i>E. maculata</i>	Spotted Gum	B	M,L	60-80'	-40'	E	IV,D - 1,7,22
<i>E. nicholii</i>	Willow Peppermint	B	M,L	-40'	-30'	E	IV,D - 1,7,22
<i>E. sideroxylon</i>	Red Ironbark	B	M,L	35-80'	-35'	E	IV,D - 1,7,10
<i>E. torquata</i>	Coral Gum	B	M,L	-25'	-20'	E	IV,D - 1,6,7,10,20
<i>Feijoa sellowiana</i>	Pineapple Guava	B	M,L	18-25'	-25'	E	C,IV,D - 3,7,8,10,11,16
<i>Ficus species</i>	Fig	B	M,L	Varies	Varies	E,D	C,IV,D - 3,8

TREES cont'd

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT FT	SPREAD FT	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Fraxinus augustifolia</i>	Raywood Ash	B	M	25+35'	30'	D	C,IV,D - 22
<i>F. dipetala</i>	Foothill Ash	B,C,D	L,VL	18-20'	20-30'	D	C,IV,D - 12,21,22,23
<i>F. latifolia</i>	Oregon Ash	B	M	40-80'	40-60'	D	C,IV,D - 12,22,23
<i>F. velutina</i>	Arizona Ash	B,C	M,L	20-50'	30-50'	D	C,IV,D - 22,23
<i>F.v. coriacea</i>	Montebello Ash	B,C,D	M,L	20-40'	20-40'	D	C,IV,D - 12,22,23
<i>Geijera parviflora</i>	Australian Willow	B	M,L	25-30'	20-30'	E	C,IV,D - 6
<i>Ginkgo biloba</i>	Maidenhair Tree	B	M,L	35-80'	30-60'	D	C,IV,D - 6,22
<i>Gleditsia triacanthos</i>	Honey Locust	B	M,L	35-70'	-30'	D	IV,D - 6,22
<i>Heteromeles arbutifolia</i>	Toyon	B,C,D	L,VL	15-30'	15-30'	E	C,IV,D - 5,7,10,12,23
<i>Hymenosporum flavum</i>	Sweetshade Tree	B	M,L	20-40'	15-20'	E	IV - 10
<i>Jacaranda mimosifolia</i>	Jacaranda	B	M,L	25-40'	-30'	D	C,IV,D - 10,22
<i>Juglans californica</i>	Southern California Black Walnut	B,C,D	L	20-35'	30-45'	D	C,IV, - 5,6,12,23
<i>Koelreuteria bipinnata</i>	Chinese Flame Tree	B	M	20-40'	-45'	D	C,IV,D - 6,22
<i>K. paniculata</i>	Golden Rain Tree	B	M,L	20-35'	-40'	D	IV,D - 20,22
<i>Lagerstroemia indica</i>	Crape Myrtle	B	M,L	-30	-20	D	IV,D - 10,22
<i>Liquidambar formosana</i>	Chinese Sweet Gum	B	M	40-60'	25'	D	C,IV,D - 7
<i>L. styraciflua</i>	American Sweet Gum	B	M	60'	-25'	D	C,IV,D - 7
<i>Liriodendron tulipifera</i>	Tulip Tree	B	M	60-80'	40'	D	C,IV,D - 22
<i>Lithocarpus densiflorus</i>	Tanbark Oak	B,C,D	L	-60'	-40'	E	C,IV - 6,12,23
<i>Magnolia species</i>	Magnolia	B	M	Varies	Varies	E,D	C,IV,D - 6,8,10,22
<i>Maytenus boaria</i>	Mayten Tree	B	M,L	30-50'	30'	E	IV - 6,22
<i>Metasequoia glyptostroboides</i>	Dawn Redwood	B	H,M	-80'	-40'	D	C,IV - 22
<i>Metrosideros excelsus</i>	New Zealand Christmas Tree	B	L,VL	-30'	-30'	E	C,IV - 5,6,7,10
<i>Morus alba</i>	White Mulberry	B	M,L	20-60'	30-50'	D	IV,D - 11,16
<i>Olea europea</i>	Olive	B	L,VI	-35'	20-30'	E	C,IV,D - 11,16,20
<i>Parkinsonia aculeata</i>	Jerusalem Thorn	B	L,VL	15-30'	15-30'	D	C,IV,D - 3,6,7,10,22,
<i>Pistacia chinensis</i>	Chinese Pistache	B	M,L	-60'	-50'	D	C,IV,D - 22
<i>Pittosporum phillyraeoides</i>	Willow Pittosporum	B	L	15-25'	10-15'	E	C,IV,D - 10
<i>P. rhombifolium</i>	Queensland Pittosporum	B	M	15-35'	-25'	E	C,IV,D - 22
<i>P. undulatum</i>	Victorian Box	B	M	-25'	-25'	E	C,IV - 22
<i>Platanus acerifolia</i>	London Plane Tree	B	L	40-80'	30-40'	D	C,IV,D - 22
<i>P. racemosa</i>	California Sycamore	B,C,D	L	50-100'	50-100'	D	C,IV,D - 12,21,22,23
<i>Podocarpus gracilior</i>	Fern Pine	B	M	-60'	-60'	E	C,IV,D - 16,22
<i>P. macrophyllus</i>	Yew Pine	B	M	-50'	-45'	E	C,IV,D - 16,22
<i>Populus fremontii</i>	Fremont Cottonwood	B,C,D	M	40-60'	40-60'	D	C,IV,V - 12,21,22,23
<i>Prosopis glandulosa</i>	Honey Mesquite	B	L,VL	25-30'	25-30'	D	C,IV,D - 5,7,22,23
<i>P. g. var. 'torreyana'</i>	Mesquite	B	L,VL	40-50'	40-50'	D	C,IV,D - 5,7,12,22,23
<i>Prunus species & 'cultivars'</i>	Cherry	B	varies	varies	varies	E,D	C,IV,D - 7,8,10,11,16
<i>P. ilicifolia</i>	Hollyleaf Cherry	B,C,D	L,VL	15-30'	15-30'	E	C,IV,D - 7,11,12,16,23
<i>P. lyonii</i>	Catalina Cherry	B,C,D	L,VL	20-45'	30'+	E	C,IV,D - 7,11,12,16,23
<i>Punica granatum</i>	Pomegranate	B	L	12-18'	-20'	D	C,IV,D - 7,11,20
<i>Quercus agrifolia</i>	Coast Live Oak	B,C,D	L,VL	30-70'	70'+	E	C,IV,D - 6,12,23
<i>Q. chrysolepis</i>	Canyon Live Oak	B,C,D	M,L	30-60'	20-60'	E	C,IV - 6,12,36
<i>Q. douglasii</i>	Blue Oak	B,C,D	M	50'	>50	D	C,IV,D - 6,12,23
<i>Q. engelmannii</i>	Engelmann Oak	B,C,D	I	60'	>60'	E	IV,D - 6,12,23
<i>Q. ilex</i>	Holly Oak	B	M	40-70'	40-70'	E	C,IV,D - 6,23
<i>Q. kelloggii</i>	California Black Oak	B,C,D	M	30-80'	-60'	D	IV - 6,12,23
<i>Q. lobata</i>	Valley Oak	B,C,D	L,VL	70'+	70'+	D	C,IV - 6,12,23
<i>Q. palustris</i>	Pin Oak	B	H,M	50-80'	5-70'	D	C,IV,D - 6,22,23
<i>Q. rubra</i>	Red Oak	B	H,M	-90'	90'	D	C,IV - 6,23

TREES cont'd

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT FT	SPREAD FT	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Q. suber</i>	Cork Oak	B	M	70-100'	-100'	E	C,IV,D - 6,23
<i>Q. virginiana</i>	Southern Live Oak	B	M,H	60'	100'	E/D	C,IV,D - 22
<i>Q. wislizenii</i>	Interior Live Oak	B,C,D	M,L	30-75'	75'+	E	IV,D - 6,12,23
<i>Rhus lancea</i>	African Sumac	B	L	20-30'	20-30'	E	C,IV,D - 20,22
<i>Robinia ambigua</i>	Locust	B	M,L	30-50'	-30'	D	IV,D - 1,7,10,22
<i>R. pseudoacacia</i>	Black Locust	B	L	-75'	30-40'	D	IV,D - 1,5,7,10,20,22
<i>Sapium sebiferum</i>	Chinese Tallow Tree	B	M	-35'	-35'	D	IV,D - 22
<i>Schefflera actinophylla</i>	Queensland Umbrella Tree	A,B	H,M	20'+	20'+	E	C - 3,8,18
<i>S. pueckleri</i>	Tupidanthus	A,B	H,M	20'+	20'+	E	C - 3,8,18
<i>Syagrus romanzoffianum</i>	Queen Palm	B	M	50'	-20'	E	C,IV - 15
<i>Tabebuia chrysotricha</i>	Golden Trumpet Tree	B	M	25-30'	-30'	E	C,IV - 6,10,22
<i>T. impetiginosa</i>	Pink Trumpet Tree	B	M	35'	-30'	E	C,IV - 6,10,22
<i>Taxodium mucronatum</i>	Montezuma Cypress	B	H-L	75'	35'	E/D	IV - 22
<i>Tipuana tipu</i>	Tipu Tree	B	M	-50'	-50'	D	C,IV - 10,22
<i>Trachycarpus fortunei</i>	Windmill Palm	B	M	-30'	-6'	E	C,IV,D - 15
<i>Tristania conferta</i>	Brisbane Box	B	L,VL	30-60'	-40'	E	C,IV - 22
<i>Umbellularia californica</i>	California Bay	B,C,D	L,VL	30-75'	30-75'	E	C,IV,D - 5,12,23
<i>Zelkova serrata</i>	Sawleaf Zelkova	B	M	60'	60'	D	IV,D - 22
<i>Ziziphus jujuba</i>	Chinese Jujube	B	M,L	20-30'	20-30'	D	C,IV,D - 11,20,22

APPENDIX III PLANTING, SPACING, AND MAINTENANCE GUIDELINES

Information:

- Utilize slope distances for all measurements.
- Maintenance includes irrigation and annual removal of weeds, dead materials, and other undesirable flammable vegetation required to keep the fuel modified area in a fire safe condition as required by the approved fuel modification plan.
- During early stages of revegetation, plants are small and may be planted in increased densities to establish erosion control measures; however, as these plants mature and increase in size they must be thinned to meet fuel modification standards.
- The term "fire resistant" may be misleading. All plants will burn if there is enough heat and other conditions are right. Vegetative fire resistance may be enhanced through consistent irrigation.

General Requirements:

- Select plant material which will produce a coverage of permanent planting effectively controlling erosion.
- Consider utilizing deep-rooted plant material needing limited watering.
- Limit use of plants which are known to be especially flammable throughout your property.
- Limit use of plants which develop large volumes of foliage and branches.
- Limit use of plants which develop deciduous or shaggy bark.
- Limit use of plants which develop dry or dead undergrowth.
- **Recommended** minimum spacing is 30 feet between canopies for trees, and 15 feet or three times the diameter of the individual crowns for large shrubs. Limited grouping or alternative spacing may be approved.

Specific Requirements:

- Plants and trees must be individually planted, spaced and maintained in such a manner that they do not form a means of transmitting fire from native growth to the structure.
- Select plant species from the approved plant list for each zone and geographical area. Other species will be reviewed on a case by case basis. Except for dwarf varieties or mature trees small in stature, trees are generally not **recommended** within Zone A for reasons which go beyond fire issues and are therefore not included in the planting guide. Tree canopies may extend into Zone A when planted outside the zone.

- Limit massing of vegetation adjacent to structures; especially under eaves, overhangs, decks, etc.
- Provisions for continuous maintenance must be documented on the fuel modification plan and CCR's, i.e., by homeowner associations, property owners, or other entities.
- Conduct yearly maintenance to reduce fuel volumes, eliminate weeds, remove dead vegetation, etc. prior to annually brush inspections.
- Irrigation shall be designed to supplement native vegetation and establish planted natives and ornamentals.
- Irrigation shall be directed away from native oaks and be placed outside the dripline.

APPENDIX IV

GLOSSARY

CONDUCTION: Direct transfer of heat by objects touching each other.

CONVECTION HEAT: Transfer of heat by atmospheric currents and is most critical under windy conditions and in steep terrain.

CROWN: Upper part of a 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 or developments in the wildland which are key points of defense/attack against encroaching wildfires or escaping structure fires.

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 TOLERANCE: Ability of a plant or tree to survive on little water.

FINE FUELS: Fuels such as grass, leaves, and draped pine needles, which, when dry, ignite readily and are consumed rapidly. Also called flash fuels.

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.

FIRE ZONE 4: Any geographic area designated pursuant to Section 6402 and Chapter 26.150 of Title 26, County Building Code to contain the type and condition of vegetation, topography, weather, and structure density to increase the possibility of conflagration fires.

FUELBREAK: 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 area, 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 retardant 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 provide vertical continuity between strata. Fire is able to carry from surface fuels by convection into the crowns with relative ease.

LITTER: The uppermost layer of loose debris composed of freshly fallen or slightly decomposed organic materials 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 firebrand (glowing or flaming) will cause a fire, providing it lands on receptive fuels. It is calculated from air temperature, fuel shading, and fuel moisture.

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.

SUBDIVISION: A parcel of land that is subdivided to create multiple individual lots for residential purposes in accordance with The State of California Subdivision Map Act.

TARGET SPECIES: Undesirable species which 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 flammable. 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.

URBAN INTERFACE: That line, area, or zone where structures and other human development meets or intermingles.

VERTICAL CONTINUITY: The proximity of fuels to each other that governs the fire's capability to sustain itself. Vertical continuity applies to the relationship of aerial fuels to surface fuels or fuels low to the ground.

VERY HIGH FIRE HAZARD SEVERITY ZONE: Any geographic area designated pursuant to Government Code Section 51178 to contain the type and condition of vegetation, topography, weather, and structure density to increase the possibility of conflagration fires.

APPENDIX V

SUBMITTAL AND ROUTING PROCEDURES

SUBDIVISION AND ACCESS UNIT:

1. Applicants submitting proposed tract or parcel maps for projects located in the Very High Fire Hazard Severity Zone (VHFHSZ) or Fire Zone 4, will be referred to the Fuel Modification Unit for approval of their Preliminary Fuel Modification Plan. Notification will be given to the applicant by use of Form #266, "Conditions of Approval for Subdivisions - Incorporated," or by use of Form #267, "Conditions of Approval for Subdivisions - Unincorporated" during Subdivision Committee meetings. A representative from the Fuel Modification Unit will attend the subdivision meetings.
 - a. Fuel Modification Plan Guidelines are available from the Fire Prevention Office, Forestry Division Office, Regional Planning One-Stop, Fuel Modification Unit, Area Prevention Office, Building and Safety, and Contract Cities.
 - b. Fuel Modification Plans may be submitted by mail or in person to the Fuel Modification Unit.
2. The Subdivision and Access Unit will notify the Fuel Modification Unit in writing, using Form #266 or Form #267 regarding the impending tract/parcel map.
3. The Fuel Modification Unit will return a copy of the Preliminary Fuel Modification Plan Approval Letter to the applicant and the Subdivision and Access Unit before final map clearance is approved.

FIRE PREVENTION ENGINEERING:

1. Applicants submitting proposed building plans for projects located in the Very High Fire Hazard Severity Zone (VHFHSZ) or Fire Zone 4, will be referred to the Fuel Modification Unit for approval of their Preliminary and/or Final Fuel Modification Plan. Notification will be given to the applicant in the form of the "Very High Fire Hazard Severity Zone/Fire Zone 4" plan check sheet, during the initial review.
 - a. Fuel Modification Plan Guidelines are available from the Fire Prevention Office, Forestry Division Office, Regional Planning One-Stop, Fuel Modification Unit, Area Prevention Office, Building and Safety, and Contract Cities.

- b. Fuel Modification Plans may be submitted by mail or in person to the Fuel Modification Unit.

2. The following verbatim note will be required to be blueprinted on the final building plans, prior to obtaining approval. "This property is located within an area designated by the Fire Department as Very High Fire Hazard Severity Zone (VHFHSZ) or Fire Zone 4. A Final Fuel Modification Plan shall be submitted and approved, prior to building permit approval. Implementation of the approved Final Fuel Modification Plan and final inspection will be required prior to approval of occupancy." Submit three sets of plans to the Fuel Modification Unit.

3. Fire Prevention, Engineering will notify the Fuel Modification Unit in writing, using the Very High Fire Hazard Severity Zone (VHFHSZ) or Fire Zone 4 Building Requirement Checklist regarding the impending building permit request.

4. The Fuel Modification Unit will return a copy of the Final Fuel Modification Plan Approval Letter to the applicant and the Fire Prevention, Engineering Unit, before building permit clearance is approved.

5. The Fuel Modification Unit will return a copy of the Final Inspection and Receipt of CCR's approval letter to the applicant and the Fire Prevention Unit before final occupancy is approved.

APPENDIX F

Updated County of Los Angeles Fire Department Plant Lists

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APPENDIX I UNDESIRABLE PLANT LIST

TARGET 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 would 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, and pitch. Certain native plants are notorious as species containing these volatile substances.

Plants with these characteristics should not be planted in fire hazard areas. Should these species already exist within these areas, they should be removed because of the potential threat they pose to structures. They are referred to as target species since their complete or partial removal is a critical part of hazard reduction. The following is a partial list of plants that should be avoided near structures.

UNDESIRABLE PLANT SPECIES (TARGET SPECIES)

Natives:

Adenostoma fasciculatum - Chamise
Adenostoma sparsifolium - Red shank
Artemisia californica - California Sagebrush
Eriogonum fasciculatum - Common Buckwheat
Salvia sp. – Sage

Ornamentals:

Cortadera sp.- Pampas Grass
Cupressus sp. - Cypress
Eucalyptus sp. - Eucalyptus*
Jasminum humile – Italian Jasmine
Juniperus sp. – Juniper*
Pinus sp. – Pine
Plumbago auriculata – Cape Plumbago
Tecoma capensis – Cape Honeysuckle

* Except as permitted in the planting list

INVASIVE PLANT SPECIES - Other plants may be considered to be undesirable due to their ability to naturalize in wildland areas and become pests, because they are invasive in the landscape, or because they are an aggressive spreading or climbing species that out compete other plants. These types of plants should be avoided, especially in sensitive riparian or coastal areas where they may become established and compete with native vegetation. The following is a list of commonly used plant species that should not be planted due to their invasive nature. Applicants may be required to remove these plants where they occur. For a more complete list, visit the California Invasive Plant Council website at www.cal-ipc.org.

UNDESIRABLE PLANT SPECIES (INVASIVE SPECIES)

Arctotheca calendula – Capeweed
Atriplex semibaccata – Australian Saltbush
Carpobrotus chilensis – Sea Fig, Ice Plant
Carpobrotus edulis – Hottentot Fig
Cortadera sp. – Pampas Grass
Cytisus sp. – Broom
Elaeagnus angustifolia – Russian Olive
Ficus carica – Edible Fig
Eucalyptus globulus – Blue Gum
Hedera canariensis – Algerian Ivy
Hedera helix – English Ivy
Myoporum laetum - Myoporum
Pennisetum setaceum – Fountain Grass – including all cultivars and varieties
Phoenix canariensis – Canary Island Date Palm
Plumbago auriculata – Cape Plumbago
Robinia pseudoacacia – Black Locust
Schinus molle – California Pepper Tree
Schinus teribinthifolius – Brazilian Pepper Tree
Tecoma capensis – Cape Honeysuckle
Vinca major – Periwinkle
Washingtonia robusta – Mexican Fan Palm

Plants should fit the location and situation. Large trees should not be planted under or near utility lines. Low branching and wide trees should not be planted near roads or driveways where they could interfere with emergency vehicles. Typically, trees should be planted no closer than a distance of one half of their expected mature width away from roads or driveways. Avoid using shallow rooted ground covers on steep slopes. Acceptable forms of Ice Plant, while an effective ground cover on flat surfaces, would be undesirable on a steep slope because its shallow rooted nature may cause it to slide off the slope if the root zone becomes saturated during a rain storm. This would expose the bare soil to erosion.

Care should be taken to avoid erosion problems created or enhanced by total vegetation removal. In areas where target species comprise the total vegetation, partial removal is recommended with replacement planting using desirable species as the long range goal.

APPENDIX II DESIRABLE PLANT LIST

Desirable Qualities for Landscape Plants

1. Ability to store water in leaves or stems.
2. Produces limited dead and fine material.
3. Extensive root systems for controlling erosion.
4. High levels of salt or other compounds within its tissues that can contribute to fire resistance.
5. Ability to withstand drought.
6. Prostrate or prone in form.
7. Ability to withstand severe pruning.
8. Low levels of volatile oils or resins.
9. Ability to resprout after a fire.

PLANT LIST LEGEND

<u>Geographical Area</u>	<u>Water Needs</u>	<u>Evergreen/Deciduous</u>
C-Coastal	H-High.....	E-Evergreen
IV-Interior Valley.....	M-Moderate....	D-Deciduous
D-Deserts	L-Low	E/D-Partly or
	.....	VL -Very Low Summer Deciduous

ZONE: A number on the list denotes the minimum distance allowed from any structure.
 Example: A,B-15 would indicate the plant should be planted no closer than 15 feet. Trees should typically be planted no closer than one half their expected mature spread away from roads or driveways.

A - Setback Zone – to 20 feet from structure.

B – Irrigated Zone – from Zone A up to 100 feet from structure.

C – Thinning Zone – thinned native vegetation up to 200 feet from structure.

Comment Code

- | | | | | |
|----|---|----|-------|---------------------------------------|
| 1 | Not for use in coastal areas. ... | 13 | ..... | Tends to be short lived. |
| 2 | Should not be used on steep slopes..... | 14 | ..... | High fire resistance. |
| 3 | May be damaged by frost. | 15 | ..... | Dead fronds or leaves need to be |
| 4 | Should be thinned bi-annually to ..... |  | ..... | removed to maintain fire safety. |
| | remove dead or unwanted growth..... | 16 | ..... | Tolerant of heavy pruning. |
| 5 | Good for erosion control. | 17 | ..... | Must be cut back after flowering. |
| 6 | Grows best in well drained soils. | 18 | ..... | May require partial shade in desert |
| 7 | Produces flowers or fruit that. .... |  | ..... | or valley areas. |
| | attracts birds and or butterflies. | 19 | ..... | Perennial |
| 8 | Adaptability can vary. | 20 | ..... | Tolerates saline soils. |
| 9 | Can be used as a lawn substitute..... | 21 | ..... | Grows naturally in riparian areas. |
| 10 | Showy flowers. | 22 | ..... | Good tree for lawns. |
| 11 | Produces edible fruit... .. | 23 | ..... | Produces habitat or food for wildlife |
| 12 | Native or native cultivar. | X | ..... | May be invasive in some areas |

The following plant list is provided as a suggested guideline, not exclusive, for Fuel Modification landscaping within Los Angeles County. Plants not listed (grasses, annuals etc.) may be used if approved with the Fuel Modification plan.

The desirable planting list is based on comments from numerous professionals and public agencies, Sunset Western Garden Book, Bob Perry's Landscape Plants for Western Regions, and the California Department of Water Resources study entitled, WUCOLS (Water Use Classification of Landscape Species). The plant list is arranged by plant type and includes categories for the acceptable Fuel Modification Zone, water needs, size, and appropriate geographical area for planting. A comment code is included to assist in plant selection and maintenance requirements.

GROUNDCOVERS - REVISED 8/16/2007

Groundcovers in Zone A, especially woody species, should typically maintained at a height of 6 inches or less.

Groundcovers in Zone B and within 50 of the structure, should be maintained at a height of 12 inches or less.

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Abelia grandiflora</i> 'Prostrata'	Prostrate Glossy Abelia	A,B	M	1 - 2'	3 - 4'	E	C,IV - 3
<i>Acacia redolens</i> 'desert carpet'	Desert Carpet Acacia	B-30	L	2'	10-15'	E	C,IV,D-3,5,6,10
<i>A. r.</i> 'Low Boy'	Low Boy Acacia	B-30	L	3'	10-15'	E	C,IV,D-3,5,6,10
<i>Achillea tomentosa</i>	Woolly Yarrow	A,B	L	6 - 10"	6 - 12"	E	C,IV - 7,9,19
<i>Aeonium</i> species	NCN	A,B	L	varies	varies	E	C,IV-2,3,8,14
<i>Ajuga reptans</i>	Carpet Bugle	A,B	H	4 - 6"	2 - 4"	E	C,IV - 2,18,19
<i>Aptenia cordifolia</i>	Red Apple Ice Plant	A,B	M,L	- 12"	varies	E	IV,D - 1,2,3,19
<i>Arctostaphylos edmundsii</i>	Little Sur Manzanita	B-30	L,VL	1 - 2'+	4 - 6'	E	C,IV - 4,6,12
<i>A.</i> 'Emerald Carpet'	Emerald Carpet Manzanita	B	L,VL	1'	4 - 6'	E	C,IV - 4,6,12
<i>A. hookeri</i> 'Monterey Carpet'	Monterey Manzanita	B	L	1-2'	8-12'	E	C,IV-6,7,12,23
<i>A.</i> 'Pacific Mist'	NCN	B	L	1-2'	8-10'	E	C,IV-6,7,12,23
<i>A. uva-ursi</i>	Bearberry	B	L	6-12"+	10-15'	E	C,IV-5,6,7,12,23
<i>Artemisia californica</i> 'cultivars'	Sagebrush - Prostrate Forms	B-30	L,VL	varies	varies	E	C,IV,D - 4,6,8,12,23
<i>A. caucasica</i>	Silver Spreader	A,B	L,VL	3-6"	2'	E	C,IV,D-4,6,12
<i>Asarum caudatum</i>	Wild Ginger	A	M,H	7-10"	2'	D	C,IV-3,18,19
<i>Baccharis pilularis</i> 'Pigeon Point'	Dwarf Coyote Brush	B	L,VL	12-24"	-6'	E	C,IV,D-4,5,12
<i>B.p.</i> 'Twin Peaks'	Dwarf Coyote Brush	B	L,VL	12-24"	-6'	E	C,IV,D-4,5,12
<i>Ceanothus gloriosus</i>	Point Reyes Ceanothus	B	L	1-2'	12-16'	E	C-6,7,10,12
<i>Cerastium tomentosum</i>	Snow-In-Summer	A,B	M,L	6-8"	2-3'	E	C,IV,D-10,14,19
<i>Chamaemelum nobile</i>	Chamomile	A,B	M	6-8"	-12"	E	C,IV,D-9,16,19
<i>Cistus salviifolius</i>	Sageleaf Rockrose	B	L,VL	1-2'	6'	E	C,IV,D-4,5,6,7,10,16,20
<i>C.</i> 'Sunset'	Rockrose	B	L,VL	1-2'	6-8'	E	C,IV,D-4,5,6,7,10,16,20
<i>C.</i> 'Warley rose'	Rockrose	B	L,VL	1'	4'	E	C,IV,D-4,5,6,7,10,16,20
<i>Coprosma kirkii</i>	NCN	B	M,L	-2'	6-8'	E	C,IV-3,4,5,8,18,20
<i>Coreopsis auriculata</i> 'Nana'	NCN	A,B	L,VL	5-8"	-2'	E/D	C,IV-3,8,19
<i>Cotoneaster adpressus praecox</i>	Cotoneaster	B	M,L	-18"	-6'	D	C,IV,D-2
<i>C. salicifolius</i> 'Emerald Carpet'	Prostrate Willowleaf Contoneaster	B	M,L	12-15"	-8'	E	C,IV,D-4
<i>Dalea greggii</i>	Trailing Indigo Bush	B	L,VL	12-18"	5-10'	E	IV,D - 6
<i>Delosperma alba</i>	White Training Ice Plant	A,B	L	-12"	2'	E	C,IV-10
<i>Dichondra micrantha</i>	Dichondra	A,B	H,M	-6"	-2'	E	C,IV-9,14,18
<i>Drosanthemum floribundum</i>	Rosea Ice Plant	A,B	L	-12"	1'-2'	E	C,IV-3,5,10
<i>Duchesnea indica</i>	Indian Mock Strawberry	A,B	L	-8"	-4'	E	C,IV,D-11,16,19
<i>Dymondia margaretae</i>	NCN	A,B	M,L	-3"	12-24"	E	C,IV-3,8
<i>Erigeron glaucus</i>	Seaside Daisy	A,B	M,L	10-12"	-2'	E	C,IV-3,6,8,10,12,18,19,20
<i>E. karvinskianus</i>	Santa Barbara Daisy	A,B	M,L	10-20"	-3'	E	C,IV-3,6,8,10,12,18,19,20
<i>Euonymus fortunei</i> 'Colorata'	Purple-Leaf Winter Creeper	B	M	1-2'	-6'	E	IV-1,5,8,16
<i>Festuca cinerea</i> (ovina'Glauca')	Blue Fescue	A,B	M,L	-12"	-2'	E	C,IV,D-4
<i>F. rubra</i>	Red Fescue	A,B	M,L	-16"	-30"	E	C,IV,D-4,9
<i>Fragaria chiloensis</i>	Wild Strawberry	A,B	L,VL	6-12"	-24"	E	C,IV,D-4,10,11,12,14,20
<i>Gazania</i> Hybrids	Trailing Gazania	A,B	M,L	6-10"	-24"	E	C,IV,D-10,19
<i>Geranium incanum</i>	Cranesbill	A,B	M,L	-12"	2'	E	C,IV-4,10,19,X
<i>Glechoma hederacea</i>	Ground Ivy	A,B	M	3-6"	-18"	E/D	C,IV,D-8,19
<i>Helianthemum nummularium</i>	Sunrose	A,B	M	6-8"	-3'	E	C,IV,D - 6,10
<i>Herniaria glabra</i>	Green Carpet	A,B	M	2-3"	16"	E	C,IV,D-6,8,9,19
<i>Hypericum calycinum</i>	Aaron's Beard	B	M,L	6-12"	-3'	E	C,IV,D-4,5,7,16
<i>H. coris</i>	St. Johnswort	B	M,L	6-12"	-2'	E	C,IV,D-4,5,7,16
<i>Iberis sempervirens</i>	Evergreen Candytuft	A,B	M	6-12"	-6-12"	E	C,IV,D-10,19
<i>Iva hayesiana</i>	Poverty Weed	B-30	L,VL	2-3'	4-5'	E	C,IV,D-4,5,12,16,23
<i>Juniperus conferta</i> & cultivars	Shore Juniper	B	L	1'	6-8'	E	C,IV,D-5,8,20
<i>J. horizontalis</i> & cultivars		B	L	1'	6-8'	E	C,IV,D-5,8,20

GROUNDCOVERS cont'd

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Laurentia fluviatilis</i>	Blue Star Creeper	A	M	2-4"	6-12"	E	C,IV-8,19
<i>Lonicera japonica</i>	Japanese Honeysuckle	B	M	1-2'	6-10'	E	IV-1,5,7,10,16
<i>Lysimachia nummularia</i>	Moneywort	A	H,M	2-6"	-2'	E	C,IV -18,19
<i>Liriope muscari</i>	Big Blue Lily Turf	A,B	M	18"	2-3'	E	C,IV,D-14,18
<i>L. spicata</i>	Creeping Lily Turf	A,B	M	12"	3'	E	C,IV,D-14,18
<i>Mahonia aquifolium 'Compacta'</i>	Compact Oregon Grape	A,B	M,L	1-2'	2-3'	E	C,IV-4,7,12,18,23
<i>M. repens</i>	Creeping Mahonia	A,B	M,L	2-3'	2-3'	E	C,IV-4,7,12,18,23
<i>Myoporum 'Pacificum'</i>	Pacific Myoporum	A,B	M,L	2-3'	-30'	E	IV-1,4,5,16
<i>M. parvifolium</i>	NCN	A,B	M,L	-6"	9'	E	C,IV-3,5,
<i>M. p. 'Putah Creek'</i>	NCN	A,B	M,L	1'	8'	E	C,IV-3,5,
<i>Nandina domestica 'Harbour Dwarf'</i>	Dwarf Heavenly Bamboo	A,B	M,L	1 1/2 -2'	2-3'	E	C,IV,D-15
<i>Oenothera berlandieri</i>	Mexican Evening Primrose	B	L,VL	10-12"	4'	E	IV,D-1,4,7,10,17,19
<i>O. stubbei</i>	Baja Evening Primrose	A,B	L,VL	5"	2'	E	IV,D-7,12,19
<i>Ophiopogon japonicus</i>	Mondo Grass	A,B	M	8-12"	12-24"	E	C,IV-14,18
<i>Osteospermum fruticosum</i>	Trailing African Daisy	A,B	M	-18"	-4'	E	IV-1,10,19
<i>Pelargonium peltatum</i>	Ivy Geranium	A,B	M	-2'	-4'	E	IV - 1,3,7,10,19
<i>P. tomentosum</i>	Silver Spreader	A,B	M	-18"	2-4'	E	IV-1,3,7,10,19
<i>Persicaria capitata</i>	Pink Clover	A,B	M,L	-18"	3'	E	IV,D -1,10,19,X
<i>Phyla nodiflora (Lippia repens)</i>	Lippia	A,B	M,L	2-15"	-3'	E/D	C,IV,D-9,16,19
<i>Potentilla tabernaemontanii</i>	Spring Cinquefoil	A,B	M,L	2-6"	-12"	E	C,IV,D-9,10,19
<i>Ribes viburnifolium</i>	Catalina Perfume	A,B	L,VL	-3'	-3'	E	C,IV - 12,18,23
<i>Rosmarinus officinalis</i>							
<i>R.o. 'Huntington Blue'</i>	NCN	B	L	-18"	-4'	E	C,IV,D - 4,5,16
<i>R.o. 'Prostratus'</i>	Prostrate Rosemary	B-30	L	-24"	-6'	E	C,IV,D - 4,5,16
<i>Scaevola 'Mauve Clusters'</i>	NCN	A,B	M,L	4-6"	3-4'	E	C,IV - 6,18,19
<i>Salvia sonomensis</i>	Creeping Sage	B	L	8-12"	3-4'	E	C,IV-6,12,13,23
<i>Sedum species</i>	Stonecrops	A,B	L,VL	varies	varies	E	C,IV - 2,8,14
<i>Senecio mandraliscae</i>	Chalksticks	A,B	M,L	-18"	-5'	E	C,IV - 3,14,19
<i>S. serpens</i>	Blue Chalksticks	A,B	M,L	-12"	-3'	E	C,IV-3,14,19
<i>Soleirolia soleirolii</i>	Baby's Tears	A	H,M	3-6"	-18"	E	C,IV - 3,14,18,19
<i>Teucrium cossonii majoricum</i>	NCN	A,B	L	8"	-2'	E	C,IV - 6,10
<i>T. X lucidrys 'Prostratum'</i>	Prostrate Germander	A,B	M,L	4-6"	-3'	E	C,IV,D - 4,16
<i>Thymus praecox arcticus</i>	Mother of Thyme	A,B	M,L	2-6"	-18"	E	C,IV,D - 8
<i>T. pseudolanuginosus</i>	Woolly Thyme	A,B	M,L	2-3"	-12"	E	C,IV,D - 8
<i>Trachelospermum jasminoides</i>	Star Jasmine	A,B	M,L	-2'	4-5'	E	C,IV,D - 5,7,10,16
<i>Trifolium fragiferum</i>	White Clover	A,B	M,L	6-15"	-6'	E	C,IV,D-5,9,16,19
<i>Verbena X hybrida</i>	Garden Verbena	A,B	L,VL	6-12"	1 1/2-3'	E	C,IV,D - 3,7,10,13
<i>V. peruviana</i>	NCN	A,B	L,VL	-8"	-2'	E	C,IV,D - 7, 10
<i>V. pulchella gracilior</i>	Moss Verbena	A,B	L,VL	12-15"	2-3'	E	C,IV,D-8,10,19
<i>Vinca minor</i>	Dwarf Periwinkle	A,B	M,L	12"	3'	E	IV,D - 1,5,16,18, X
<i>Wedelia trilobata</i>	Wedelia	B	M,L	1-2'	4-6'	E	C,IV- 3,16, 20
<i>Zoysia tenuifolia</i>	Korean Grass	A	M,L	-6"	-18"	E	C,IV,D - 9

SHRUBS - REVISED 8/16/2007

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Abelia grandiflora</i>	Glossy Abelia	A,B-5	M	8'	8'	E	C,IV,D - 4, 10
<i>A. g. 'Prostrata'</i>	Prostrate Glossy Abelia	A,B-5	M	2'	4'	E/D	C,IV,D - 10
<i>Abutilon hybridum</i>	Flowering Maple, Chinese Lantern	A,B-10	M	10'	10'	E	C,IV - 4
<i>Acanthus mollis</i>	Bear's Breech	A,B	H,M	-4'	4-6'	E/D	C,IV,D - 3,8,14,16,17,18,19
<i>Achillea filipendulina</i>	Fernleaf Yarrow	A,B	L,VL	4-5'	2'	E	C,IV,D - 10,16,17,19
<i>A. millefolium</i>	Common Yarrow	A,B	L,VL	-3'	2'	E	C,IV,D - 10,16,17,19
<i>Aeonium species</i>	NCN	A,B	L	varies	varies	E	C,IV - 3,8,14
<i>Agapanthus species</i>	Lily-Of-The-Nile	A,B	M	varies	varies	E/D	C,IV - 3,4,7,10,14,19
<i>Agave species</i>	Agave	A,B	L,VL	varies	varies	E	C,IV,D - 3,10,14,17
<i>Alocasia macrorrhiza</i>	Elephant's Ear	A,B	H	5'	8'	E/D	C,IV - 3,14,18,19
<i>Aloe species</i>	Aloe	A,B	L,VL	varies	varies	E	C,IV, - 3,7,8,14,15
<i>Alyogyne huegelii</i>	Blue Hibiscus	A,B-5	M,L	5-8'	6'	E	C,IV - 3,4,10
<i>Anigozanthos flavidus</i>	Kangaroo Paw	A,B	M,L	3-5'	3'	E	C,IV - 3,6,7,10,19
<i>A. manqlesii</i>	NCN	A,B	M,L	3'	-3'	E	C,IV - 3,6,7,19
<i>Arbutus unedo 'Compacta'</i>	Dwarf Strawberry Tree	A,B-5	M,L	6-8'	-8'	E	C,IV,D-5,7,11,18,23
<i>A.u. 'Elfin King'</i>	Elfin King	A,B-5	M,L	3-5'	-6'	E	C,IV,D - 5,7,11,18,23
<i>A.u. 'Octoberfest'</i>	NCN	A,B-5	M,L	6-8'	-8'	E	C,IV,D-5,7,11,18,23
<i>Arctostaphylos species</i>	Manzanita	B	L,VL	varies	varies	E	C,IV,D - 4,6,7,10,12
<i>Artemisia 'Powis Castle'</i>	NCN	B	L,VL	-3'	6'	E	C,IV - 4,6,12,23
<i>A. stellerana</i>	Beach Worm Wood	B	L,VL	-3'	-3'	E	C,IV - 4,6,12,19,23
<i>Aspidistra elatior</i>	Cast-Iron Plant	A,B	M,L	-30"	-3'	E	C,IV -3,18
<i>Aucuba japonica</i>	Japanese Aucuba, Gold Dust Plant	A,B-5	M,L	6-15'	6-15'	E	C,IV,D - 18
<i>Baccharis species</i>	Various	B	L,VL	varies	varies	E	C,IV,D-4,5,6,12,21,23
<i>Begonia species</i>	Begonia	A,B	H,M	varies	varies	E	C,IV - 3,8,10,14,18
<i>Berberis thunbergii</i>	Japanese Barberry	B	M,L	4-6'	4-6'	D	C,IV,D - 4
<i>B. thunbergii 'cultivars'</i>		A,B	M,L	varies	varies	D	C,IV,D - 4
<i>Bergenia crassifolia</i>	Winter Blooming Bergenia	A,B	M,L	-20"	-20"	E	C,IV - 3,18,19
<i>Bougainvillea sp.</i>	Bougainvillea	B	L	varies	varies	E/D	C,IV - 3,4,10
<i>Buddleja davidii</i>	Butterfly Bush	B	M,L	-10'	-12'	E/D	C,IV,D - 7,10,16,17,X
<i>Buxus microphylla japonica</i>	Japanese Boxwood	A,B-5	M,L	4-6'	4-6'	E	C,IV,D -16
<i>B.m. koreana</i>	Korean Boxwood	A,B-5	M,L	4-6'	4-6'	E	C,IV,D -16
<i>Caesalpinia gilliesii</i>	Bird of Paradise Bush	A,B	L,VL	-10'	-10'	E/D	C,IV,D - 7,10
<i>C. mexicana</i>	Mexican Bird of Paradise	A,B	L,VL	10-12'	-15'	E/D	C,IV,D - 7,10
<i>C. pulcherrima</i>	Red Bird of Paradise	A,B	L,VL	-10'	-10'	E/D	C,IV,D - 7,10
<i>Calliandra californica</i>	Baja Fairy Duster	B	L,VL	-3'	4-5'	E/D	C,IV,D -4,6,7,10,12
<i>C. eriophylla</i>	Fary Duster	B	L,VL	-3'	4-5'	E/D	C,IV,D -4,6,7,10,12
<i>Callistemon citrinus'compacta'</i>	Bottlebrush	B	L,VL	8'	8'	E	C,IV,D-5,7,10,20
<i>C. viminalis "Little John"</i>	NCN	A,B-10	L	5'	8	E	C,IV,D-5,7,10,20
<i>Calycanthus occidentalis</i>	Spice Bush	B	M,L	4-12'	-5'	D	C,IV-12,18
<i>Carissa macrocarpa (grandiflora)</i>	Natal Plum	A,B-10	M,L	7+	7+	E	C,IV - 4,11,16
<i>C. m. 'cultivars'</i>	Natal Plum	A,B-5	M,L	varies	varies	E	C,IV - 4,11,16
<i>Carpenteria californica</i>	Bush Anemone	A,B-10	L,VL	6-8'	6-8'	E	C,IV - 6,7,10,12
<i>Cassia artemisioides</i>	Feathery Cassia	B	L,VL	3-6'	-6'	E	C,IV,D - 10,
<i>Ceanothus species</i>	Wild Lilac	B-30	L,VL	varies	varies	E/D	C,IV,D - 4,6,7,10,12,23
<i>Cercocarpus betuloides</i>	Mountain Mahogany	B-30	L,VL	5-12'	-10'	E	C,IV,D - 4,6,12,23
<i>Choisya ternata</i>	Mexican orange	B	M	6-8'	-8'	E	C,IV - 10,18
<i>Cistus species</i>	Rockrose	A,B-10	L,VL	varies	varies	E	C,IV,D - 4,5,6,10,17,20
<i>Clivia miniata</i>	Clivia	A,B	H,M	2'	2'	E	C,IV - 3,10,14,18,19
<i>Colocasia esculenta (caladium)</i>	Taro, Elephant's Ear	A,B	H	-6'	-6'	E/D	C,IV - 3,14,18,19
<i>Comarostaphylis diversifolia</i>	Summer Holly	B	L,VL	6-10'+	6-8'+	E	C,IV,D-6,7,12,18,23
<i>Convolvulus cneorum</i>	Bush Morning Glory	B	L	2-4'	2-4'	E	C,IV,D-6,10
<i>Coprosma pumila</i>	NCN	B	M	-3'	8'	E	IV - 1,4,16,20

SHRUBS cont'd

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>C. repens</i>	Mirror Plant	B	M	-10'	-6'	E	IV - 1,4,16,20
Cotoneaster species & cultivars	Cotoneaster	B	M,L	varies	varies	E/D	C,IV,D - 4,10,16,X
Cotyledon species	NCN	A,B	L	1-3'	1-3'	E	C,IV - 3,8,14
Crassula species	NCN	A,B	L	1-9'	1-9'	E	C,IV - 3,8,14
<i>Cuphea hyssopifolia</i>	False Heather	A,B	M	2'	3'	E	V,IV - 3,7,10,
<i>Cycas revoluta</i>	Sago Palm	A,B	M	8'	10'	E	C,IV,D - 3,8,15,18
<i>Cyrtomium falcatum</i>	Holly Fern	A,B	H,M	2-3'	3-4'	E	C,IV - 15
<i>D. wheeleri</i>	Sotol	B	L,VL	-6'	-6'	E	C,IV,D-15
<i>Dasyliirion quadrangulatum(longissima)</i>	Mexican Grass Tree	B	L,VL	-10'	8'	E	C,IV,D-15
<i>D. wheeleri</i>	Sotol	B	L,VL	-6'	-6'	E	C,IV,D-15
<i>Dendromecon harfordii</i>	Island Bush Poppy	B	L,VL	8-20'	10-20'	E	C,IV - 5,10,12,23
<i>Dietes bicolor</i>	Fortnight Lily, African Iris	A,B	M,L	2-3'	2-3'	E	C,IV,D - 4,10,15,19
<i>Dietes iridioides</i>	Fortnight Lily, African Iris	A,B	M,L	3'	3'	E	C,IV,D - 4,10,15,19
<i>Dodonea viscosa</i>	Hopseed Bush	A,B-10	M,L	12-18'	10+	E	C,IV,D - 3,4
<i>D. v. 'Purpurea'</i>	Purple Hopseed Bush	A,B-10	M,L	12-18'	10+	E	C,IV,D - 3,4
<i>Echium candicans (fastuosum)</i>	Pride of Madeira	B	L,VL	-10'	-10'	E	C,IV - 4,6,7,10,19,20,X
<i>Elaeagnus pungens & cultivars</i>	Silverberry	B	M,L	6-15'	6-15'	E	C,IV,D - 16
<i>Encelia californica</i>	Coast Sunflower	A,B-10	L,VL	3-5'	3-5'	E/D	C,IV-5,6,10,4,17
<i>E. farinosa</i>	Brittle Bush	B	L,VL	3-5	3-5	E/D	C,IV,D - 4,5,6,10,12,17
<i>Erigonum giganteum</i>	St. Catherine's Lace	B	L,VL	- 8'	- 8'	E	C,IV - 4,6,10,12,19,20
<i>Escallonia species</i>	Escallonia	A,B-5	M,L	2-15'	2-10'	E	C,IV - 4,10,16
<i>Euonymus japonica & cultivars</i>	Evergreen Euonymus	A,B	M	2-10'	-6'	E	C,IV,D - 4,16
<i>Euphorbia species</i>	Varies	A,B	M,L,VL	varies	varies	E/D	C,IV- 1(varies),3,6,8,10,14,18
<i>Euryops pectinatus</i>	NCN	A,B	M,L	6'	6'	E	C,IV,D - 3,4,6,7,10
<i>Fatsia japonica</i>	Japanese Aralia	A,B	M	5-12'	6-10'	E	C,IV - 15,18
<i>Fouquieria splendens</i>	Ocotillo	A,B	VL	8-25'	8-15'	E	IV,D - 6,10,12
<i>Fremontodendron species</i>							
& cultivars	Flannel Bush	B	L,VL	5-20'	-15'	E	C,IV,D - 4,6,10,12
<i>Gardenia jasminoides</i>	Gardenia	A,B	H	3-6'	3-5'	E	C,IV - 10,18
<i>Garrya elliptica</i>	Coast Silktassel	B	M,L	4-8'	4-8'	E	C,IV,D - 4,5,7,10,12
<i>Grevillea species</i>	Grevillea	B	L,VL	varies	varies	E	C,IV,D - 3,4,5,7,8,10
<i>Grewia occidentalis</i>	Lavender Starflower	A,B-10	M	6-10'	6-10'	E	C,IV,D - 4
<i>Hakea suaveolens</i>	Sweet Hakea	B	L	10-20'	-15'	E	C,IV - 4,8
<i>Hebe species & cultivars</i>	Hebe	A,B-10	M	3-6'	3-6'	E	C,IV - 4,5,7,10,16
<i>Helictotrichon sempervirens</i>	Blue Oat Grass	A,B-15	M	2-3'	2-3'	E/D	C,IV,D - 15,19
<i>Hemerocallis hybrids</i>	Daylily	A,B	M,L	1-6'	2-6'	E/D	C,IV,D - 7,10,17,19
<i>Hesperaloe parviflora</i>	Red Yucca	A,B	VL	3-4'	4-6'	E	IV,D - 6,7,15,19
<i>Heuchera Species</i>	Coral Bells	A,B	M,L	6"-2'	2'	E/D	C,IV,D - 6,7,8,10,12,15,18,19
<i>Hibiscus rosa - sinensis</i>	Chinese Hibiscus	A,B-5	M	-15'	-12'	E	C,IV - 3,4,7,10,18
<i>Ilex species</i>	Holly	B	M	varies	varies	E	C,IV,D - 7,16,X
<i>Iris species</i>	Bearded Iris	A,B	M	-30"	-2'	E	C,IV,D - 10,19,X
<i>I.douglasiana</i>	Douglas Iris	A,B	M,L	-2'	-2'	E	C,IV - 10,12,18,19
<i>Juniperus species</i>	Juniper	B	M,L,VL	varies	varies	E	C,IV,D - 4, 7, 23
<i>Justicia brandegeana</i>	Shrimp Plant	A,B	M	-3'	-4'	E	C,IV,D - 4,7,10
<i>J. californica</i>	Chuparosa	B	L,VL	2-5'	-4'	D	IV,D - 4,6,7,10,12
<i>Keckiella cordifolia</i>	Heart-Leaved Penstemon	B	L,VL	5-6'	8-10'	E/D	C,IV-4,7,12
<i>Kniphofia uvaria</i>	Red-Hot Poker	A,B	L	2-3'	3-4'	E	C,IV,D-3,7,10,19,X
<i>Lantana Camara & hybrids</i>	Lantana	A,B-10	M	varies	varies	E	C,IV,D - 4,7,10
<i>Larrea tridentata</i>	Creosote Bush	B	VL	4-8'	4-8'	E	IV,D-6,12,23
<i>Lavandula angustifolia</i>	English Lavender	A,B-10	L	3-4'	3-4'	E	C,IV,D-4,6,7,10,17
<i>L. dentata</i>	French Lavender	A,B-10	L	3'	3'	E	C,IV,D-4,6,7,10,17
<i>L. intermedia</i>	Lavandin	A,B	L	1-2'	2-3'	E	C,V,D-4,6,7,10,17

SHRUBS cont'd

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
L. stoechas	Spanish Lavender	A,B-10	L	2-3'	3'	E	C,IV,D-4,6,7,10,17
Lavatera assurgentiflora	California Tree Mallow	B	L,VL	8-12'	8-12'	E	C,IV- 4,5,6,7,12,16,20
L. Maritima	Tree Mallow	A,B-10	M,L	8-12'	8-12'	E	C,IV- 4,7,8,10,18
Leonotis leonurus	Lion's Tail	A,B-10	L	3-6'	4-6'	E	C,IV,D-3,7,10,17
Leucophyllum candidum	Violet Silverleaf	A,B-10	L,VL	4-5'	4-5'	E	IV,D-4,6,7,10
L. frutescens	Texas Ranger	A,B-10	L,VL	6-8'	6-8'	E	IV,D-4,6,7,10
L. laevigatum	Chihuahuan Sage	A,B-5	L,VL	3-4'	4-5'	E	IV,D-4,6,7,10
Ligustrum japonicum	Wax-leaf Privet	A,B-10	M,L	10-12'	10	E	C,IV,D-7,10,15,X
Limonium perezii	Sea Lavender	A,B	L	-2'	-2'	E	C,IV - 3,10,15,19,20,X
Lobelia laxiflora	Mexican Bush Lobelia	A,B-5	M,L	2-3'	4-6'	E	C,IV,D-4,7,10,19,X
Lupinus species	Lupine	B	L,VL	varies	varies	E/D	C,IV,D-4,6,7,10,12,17
Mahonia aquifolium	Oregon Grape	A,B-10	M,L	6-8'	6-8'	E	IV,D-4,6,11,12,18,23
M. fremontii	Desert Mahonia	B	L	3-12'	4-8'	E	C,IV,D-4,6,10,11,12,23
M. 'Golden Abundance'	NCN	A,B-5	M,L	5-6'	6'	E	IV,D-4,6,10,11,12,18,23
M. lomariifolia	Venetian Blind Mahonia	A,B	M,L	6-10'	6-10'	E	C,IV,D-4,6,7,11,15,18,23
M. nevinii	Nevin Mahonia	B-30	L	3-10'	6-12'	E	C,IV,D-4,6,10,11,12,23
M. pinnata	California Holly Grape	B	M,L	4-5'	4-6'	E	C,IV-4,6,7,10,11,12,18,23
Malosma - See Rhus							
Malva species	Mallow	A,B	L	varies	varies	E/D	C,IV,D-6,7,10,13
Melaleuca nesophila	Pink Melaleuca	A,B-10	L,VL	10-20'	10-20	E	C,IV - 4,5,7,10,16
Mimulus species (Diplacus)	Monkey Flower	B	L	1-4'	1-4'	E	C,IV,D-4,6,7,10,12
Muhlenbergia rigins	Deer Grass	A,B-10	L,VL	4'	4'	D	C,IV,D- 12,15,17,19
Myrica californica	Pacific Wax Myrtle	B	M,L	10-15'+	10-15'+	E	C,IV - 4,5,7,12,20,23
Myrsine africana	African Boxwood	A,B-5	M	3-8'	3-8'	E	C,IV,D - 16,18
Myrtus communis 'compacta'	Dwarf Myrtle	A,B-10	M	5-8'	5-8'	E	C,IV,D-16
Nandina domestica	Heavenly Bamboo	A,B	M	6-8'	4-5'	E	C,IV,D-4,15
N.d. 'Compacta'	NCN	A,B	M	4-5'	3-4'	E	C,IV,D-4,15
Nephrolepis cordifolia	Southern Sword Fern	A,B	M,L	2-3'	3-6'	E	C,IV-4,15
Nerium oleander	Oleander	B	M,L	8-20'	10-20'	E	C,IV,D-10,16,X
N.o. 'Petite Salmon'	NCN	A,B-10	M	3-4'	5-7'	E	C,IV-3,10,16
Opuntia species	Prickly Pear, Cholla etc.	A,B	L,VL	varies	varies	E	C,IV,D-8,12,14,23
Pelargonium species	Geranium	A,B	M,L	varies	varies	E	C,IV-3,10,19
Penstemon species	Beard Tongue	A,B	L	varies	varies	E/D	C,IV,D-7,10,12,17,19
Phlomis fruticosa	Jerusalem Sage	A,B	M,L	3-4'	3-5'	E	C,IV,D-6,7,10,17,19
Phoenix roebelenii	Pygmy Date Palm	A,B	M,L	6-10'	6-10'	E	C,IV - 3,15,18
Phormium tenax	New Zealand Flax	A,B	M	5-9'	6'	E	C,IV,D-4,15,19
P.t 'cultivars'	NCN	A,B	M	varies	varies	E	C,IV,D-4,15,19
Photinia fraseri	Photinia	B	M,L	10-15'	10-20'	E	C,IV,D-4,7,10,16
Pittosporum tobira	Tobira	A,B-10	M,L	6-15'+	8-15'	E	C,IV,D-5,16
P.t.'Variegata'	NCN	A,B-5	M	5-8'	6-8'	E	C,IV,D-5,16
P.t.'Wheeler's Dwarf'	Dwarf Pittosporum	A,B	M	1-3'	2-4'	E	C,IV,D-16
Portulacaria afra	Elephant's Food	A,B	L	5-12'	6-12'	E	C,IV-3,14
Punica granatum 'Nana'	Dwarf Pomegranate	A,B	L	3'	4'	D	C,IV,D-7,11,20
Pyracantha species	Firethorn	B	M	varies	varies	E/D	C,IV,D-4,16,X
Rhamnus californica	Coffeeberry	B	M,L	3-15'	4-15'	E/D	C,IV,D-12,21,23
R. crocea	Redberry	B	M,L	2-3'	3'	E	IV-5,12,23
R.c. ilicifolia	Hollyleaf Redberry	B	M,L	3-15'	3-15'	E	IV-5,12,23
Rhaphiolepis indica	India Hawthorn	A,B-5	M,L	4-8'	4-8'	E	C,IV,D-4,5,10
R.i 'cultivars'	NCN	A,B	M,L	varies	varies	E	C,IV,D-5,10
Rhus integrifolia	Lemonade Berry	B-40	L	3-10'+	6-20'	E	C,IV-4,5,12,23
R.(Molosma) laurina	Laurel Sumac	B-40	L	6-15'+	6-15'	E	C,IV-4,5,12,23
R. ovata	Sugar Bush	B-30	L	3-15'	6-15'	E	C,IV,D-4,5,12,23

SHRUBS cont'd

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT	SPREAD	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Ribes aureum</i>	Golden Currant	A,B	L	3-6'	3-6'	D	C,IV,D-7,10,12,23
<i>R. malvaceum</i>	Chaparral Currant	A,B	L	6-8'	6-8"	D	IV-7,10,12,23
<i>R. sanguineum</i> & cultivars	Red Flowering Currant	A,B	M,L	4-12'	4-8'	D	C,IV,D-7,10,12,23
<i>R. speciosum</i>	Fuchsia-Flowering Gooseberry	A,B	L	3-6'	3-6'	D	C,IV,D-4,7,10,12,23
<i>R. viburnifolium</i>	Catalina Perfume	A,B	L	3'	12'	E	C,IV-7,10,12,23
<i>Romneya coulteri</i>	Matilija Poppy	B	L	-8'	4'	D	C,IV,D-5,6,10,12,17
<i>Rosa</i> species	Rose	A,B	M	varies	varies	E/D	C,IV,D-10,16,17
<i>Rosmarinus officinalis</i> & cultivars	Rosemary	B	M,L	varies	varies	E	C,IV,D- 4, 5, 7
<i>Salvia</i> species - native varieties	Sage	B	L,VL	varies	varies	E/D	C,IV,D-4,7,10,12,17,23
<i>Salvia</i> species - ornamental varieties	Sage	A,B	M,L	varies	varies	E/D	C,IV,D-4,7,10,17,23
<i>S. greggii</i>	Autumn Sage	A,B	M,L	3-4'	3-4'	E	C,IV,D - 4,7,10
<i>S. leucantha</i>	Mexican Bush Sage	A,B	L,VL	3-4'	4-6'	E	C,IV- 7, 10,17
<i>Santolina chamaecyparissus</i>	Lavender Cotton	A,B	L	-24"	-3'	E	C,IV,D - 10
<i>S. rosmarinifolius</i> (virens)	Green Lavender Cotton	A,B	L	-24"	-3'	E	C,IV,D - 10
<i>Simmondsia chinensis</i>	Jojoba	B	L,VL	3-8'+	4-8'	E	C,IV,D-4,6,11,23
<i>Strelitzia nicolai</i>	Giant Bird of Paradise	A,B	M	-30'	-20'	E	C,IV-3,4,10,15,18
<i>S. reginea</i>	Bird of Paradise	A,B	M	5'	4'	E	C,IV-3,4,10,15,18
<i>Tibouchina urvilleana</i>	Princess Flower	A,B-10	M	5-18'	5-10'	E	C,IV -3,4, 6,10
<i>Trichostema lanatum</i>	Wooly Blue Curls	B	L,VL	3-5'	5'	E	C,IV,D-6,7,10,12,17
<i>Tulbaghia violacea</i>	Society Garlic	A,B	M	18'	2'	E/D	C,IV,D-3,10,19
<i>Viburnum</i> species	Viburnum	A,B-10	M	varies	varies	E/D	C,IV,D-3,7,10
<i>Westringia fruticosa</i>	Coast Rosemary	A,B-10	M,L	5-7'	6-12'	E	C,IV,D-4,6,18
<i>Xylosma congestum</i>	Shiny Xylosma	A,B-10	M,L	15'+	15'+	E	C,IV,D-5,16,18
X.c. 'Compacta'	Compact Xylosma	A,B-5	M,L	8-12'	8-12'	E	C,IV,D-5,16,18
<i>Yucca</i> species	Yucca	B	L,VL	varies	varies	E	C,IV,D - 6,10,15
<i>Zantedeschia aethiopica</i>	Calla Lilly	A,B	H,M	2-4'	3'	E/D	C,IV,D - 3,10,14,18,X
<i>Zauschneria californica</i>	California Fuchsia	B	L,VL	1-3'	3-5'	E/D	C,IVD-4,5,7,10,12,13,23

TREES - REVISED 8/16/2007

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT FT	SPREAD FT	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>Acacia farnesiana</i>	Sweet Acacia	A,B-15	L	15-20'	15-20'	D	IV,D-10
<i>A. greggii</i>	Catclaw Acacia	A,B-15	L,VL	15-25'	15-25'	E	IV,D-10,12,21,23
<i>A. salicina</i>	Willow Acacia	A,B-15	L	15-35'	12-25'	E	C,IV,D-10,X
<i>A. smallii</i>	NCN	A,B-15	L,VL	15-20'	15-20'	D	C,IV,D-10,12,21,23
<i>A. stenophylla</i>	Shoestring Acacia	A,B-15	M,L	20-45'	10-20'	E	C,IV,D-10,22,X
<i>Acer macrophyllum</i>	Bigleaf Maple	B	M	30-95'	30-95'	D	C,IV-12,21,23
<i>A. negundo</i>	Box Elder	B	M,L	-60'	-50'	D	C,IV,D-12,23
<i>A. palmatum</i>	Japanese Maple	A,B	M	-20'+	-20'	D	C,IV-6
<i>A. saccharinum</i>	Silver Maple	B-30	M	40-100'	40-100'	D	C,IV,D-22
<i>Aesculus californica</i>	California Buckeye	B	M,L	20+	30'	D	C,IV,D-6,7,10,12,23
<i>Agonis flexuosa</i>	Peppermint Tree	B	M,L	25-35'	25-35'	E	C,IV-3,22
<i>Albizia julibrissin</i>	Silk Tree	B	M	-40'	40'+	D	C,IV,D-7,10,22,X
<i>Alnus cordata</i>	Italian Alder	A,B-15	M	40'	25'	D	C,IV,D-22
<i>A. rhombifolia</i>	White Alder	B	H,M	50-90'	40'	D	IV-12,21,23
<i>Arbutus 'Marina'</i>	NCN	A,B-15	M,L	-40'	-40'	E	C,IV,D-5,7,10,11,23
<i>A. unedo</i>	Strawberry Tree	A,B-10	M,L	12-35'	20-35'	E	C,IV,D-5,7,10,11,23
<i>Archontophoenix cunninghamiana</i>	King Palm	A,B	M	50'	10-15'	E	C,IV-3,10,15
<i>Bauhinia variegata</i>	Purple Orchid Tree	B	M	20-35'	35'	E/D	C,IV-4,10
<i>Betula pendula</i>	European White Birch	A,B-10	M	30-40'	30'	D	C,IV,D-6,22
<i>Brachychiton acerifolius</i>	Flame Tree	B	L	60'	45-50'	D	C,IV,D-10,22
<i>B. populneus</i>	Kurrajong Bottle Tree	A,B-10	L	30-50'	30'	E	C,IV,D-10,22
<i>Brahea armata</i>	Blue Hesper Palm	A,B	L,VL	40'	10'	E	C,IV,D-6,10,15
<i>B. edulis</i>	Guadalupe Palm	A,B	L,VL	30'	10'	E	C,IV,D-6,15
<i>Butia capitata</i>	Pindo Palm	A,B-10	M,L	10-20'	10-15'	E	C,IV,D-10,11,15
<i>Callistemon citrinus</i>	Lemon Bottlebrush	B	M,L	-25'	-15'	E	C,IV,D-4,7,10
<i>C. viminalis</i>	Weeping Bottlebrush	A,B-10	M,L	20-30'	-15'	E	C,IV-4,7,10
<i>Calocedrus decurrens</i>	Incense Cedar	B	L,VL	75+	30+	E	IV,D-6,12
<i>Calodendrum capense</i>	Cape Chestnut	B	M	30'	25-40'	D	C,IV-7,10
<i>Carya illinoensis</i>	Pecan	B	M,L	70'	70'	D	C,IV,D-6,11
<i>Cedrus deodara</i>	Deodar Cedar	B-30	M,L	60-80'	40+	E	C,IV,D-6
<i>Ceratonia siliqua</i>	Carob	B-30	M,L	30-40'	40+	E	C,IV,D-6
<i>Cercidium floridum</i>	Blue Palo Verde	A,B	L,VL	30'	30'	D	IV,D-6,10,12,21,23
<i>C. micropyllum</i>	Littleleaf Palo Verde	A,B	L,VL	25'	25'	D	IV,D-6,7,10,12,21,23
<i>Cercis occidentalis</i>	Western Redbud	A,B-10	M,L	20'	20'	D	C,IV,D-7,10,12,23
<i>Chamaerops humilis</i>	Mediterranean Fan Palm	A,B	M	20'	20'	E	C,IV,D-15
<i>Chilopsis linearis</i>	Desert Willow	A,B-15	L	-35'	-35'	D	IV,D-6,7,10,12,23
<i>Chionanthus retusus</i>	Chinese Fringe Tree	A,B	M	20'	20'	D	C,IV-10
<i>Chitalpa tashkentensis</i>	Chitalpa	A,B	M,L	20-30'	20-30'	D	C,IV,D-7,10,12
<i>Chorisia speciosa</i>	Floss Silk Tree	B	M	30-60'	30-40'	D	C,IV,D-10,22
<i>Cinnamomum camphora</i>	Camphor Tree	B-30	M,L	50'+	60'+	E	C,IV,D-22
<i>Citrus species</i>	Citrus	A,B	M	varies	varies	E	C,IV,D-3,6,10,11
<i>Cocculus laurifolius</i>	Laurel Leaf Snail Seed	B	M	25'	30'+	E	C,IV,D-4
<i>Cordyline australis</i>	Giant Dracaena	A,B	M	30'	15'	E	C,IV,D-15,X
<i>Cupaniopsis anacardioides</i>	Carrot Wood	A,B-10	M	40'	40'	E	C,IV,D-20
<i>Cupressus macrocarpa</i>	Monterey Cypress	B-30	M	40'+	40'	E	C-6,12,23,X
<i>Cyathea cooperi</i>	Australian Tree Fern	A,B	M	20'	12'	E	C,IV-3,15,18
<i>Dicksonia antarctica</i>	Tazmanian Tree Fern	A,B	M	15'	12'	E	C,IV-15,18
<i>Dracaena draco</i>	Dragon Tree	A,B	M,L	20'	20'	E	C,IV-3,10,14,15
<i>Eriobotrya deflexa</i>	Bronze Loquat	A,B-10	M,L	20'	20'	E	C,IV,D-10
<i>Erythrina species</i>	Coral Tree	B	M,L	varies	varies	D	C,IV,D-3,7,8
<i>Eucalyptus citriodora</i>	Lemon-scented Gum	B	M,L	75-100'	-40'	E	C,IV,D-1,7,22
<i>E. maculata</i>	Spotted Gum	B	M,L	60-80'	-40'	E	C,IV,D-1,7,22

TREES cont'd

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT FT	SPREAD FT	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>E. nicholii</i>	Willow Peppermint	B	M,L	-40'	-30'	E	C,IV,D-1,7,22
<i>E. sideroxylon</i>	Red Ironbark	B	M,L	35-80'	-35'	E	C,IV,D-1,7,10
<i>E. torquata</i>	Coral Gum	A,B-15	M,L	-25'	-20'	E	C,IV,D-1,6,7,10,20
<i>Feijoa sellowiana</i>	Pineapple Guava	A,B	M,L	18-25'	-25'	E	C,IV,D-3,7,8,10,11,16
<i>Ficus species</i>	Fig	B	M,L	varies	varies	E,D	C,IV,D-3,*
<i>Fraxinus augustifolia</i>	Raywood Ash	B	M	25+35'	30'	D	C,IV,D-22
<i>F. dipetala</i>	Foothill Ash	B	L,V,L	18-20'	20-30'	D	C,IV,D-12,21,22,23
<i>F. latifolia</i>	Oregon Ash	B	M	40-80'	40-60'	D	C,IV,D-12,22,23
<i>F. velutina</i>	Arizona Ash	B	M,L	20-50'	30-50'	D	C,IV,D-22,23
<i>F.v. Coriacea</i>	Montebello Ash	B	M,L	20-40'	20-40'	D	C,IV,D-12,22,23
<i>Geijera parviflora</i>	Australian Willow	A,B-15	M,L	25-30'	20-30'	E	C,IV,D-6
<i>Ginkgo biloba</i>	Maidenhair Tree	A,B-15	M,L	35-80'	30-60'	D	C,IV,D-6,22
<i>Gleditsia triacanthos</i>	Honey Locust	A,B-15	M,L	35-70'	-30'	D	C,IV,D-6,22,X
<i>Grevillea robusta</i>	Silk Oak	B	M	60'+	30'+	E	C,IV,D-3,7,10
<i>Heteromeles arbutifolia</i>	Toyon	A,B-15	L,V,L	15-30'	15-30'	E	C,IV,D-5,7,10,12,23
<i>Hymenosporum flavum</i>	Sweetshade Tree	A,B	M,L	20-40'	15-20'	E	C,IV-10
<i>Jacaranda mimosifolia</i>	Jacaranda	B	M,L	25-40'	-30'	D	C,IV,D-10,22
<i>Juglans californica</i>	Southern California Black Walnut	B	L	20-35'	30-45'	D	C,IV,-5,6,12,23
<i>Koelreuteria bipinnata</i>	Chinese Flame Tree	B	M	20-40'	-45'	D	C,IV,D-6,22
<i>K. paniculata</i>	Golden Rain Tree	B	M,L	20-35'	-40'	D	C,IV,D-20,22
<i>Lagersiroemia indica</i>	Crape Myrtle	A,B	M,L	-30	-20	D	IV,D-10,22
<i>Laurus nobilis</i>	Sweet Bay	B	M	20-40'	20-40	E	C,IV-3,16
<i>Leptospermum laevigatum</i>	Australian Tea Tree	A,B-15	L,V,L	10-30	10-30'	E	C,IV-5,10,16
<i>Liquidambar formosana</i>	Chinese Sweet Gum	A,B	M	40-60'	25'	D	C,IV,D-7
<i>L. styraciflua</i>	American Sweet Gum	A,B	M	60'	-25'	D	C,IV,D-7
<i>Liriodendron tulipifera</i>	Tulip Tree	B	M	60-80'	40'	D	C,IV,D-22
<i>Lithocarpus densiflorus</i>	Tanbark Oak	B	L	-60'	-40'	E	C,IV-6,12,23
<i>Lyonothamnus floribundus</i>	Catalina Ironwood	A,B-15	M	20-35	15'	E	C,IV-6,10,12,15,23
<i>Magnolia grandiflora</i>	Southern Magnolia	B	M	60-80'	40-60'	E	C,IV,D-10,22
<i>M. X soulangeana</i>	Saucer Magnolia	A,B	M	15-25'	25'+	D	C,IV,D-10
<i>Maytenus boaria</i>	Mayten Tree	A,B	M,L	30-50'	30'	E	C,IV-6,22,X
<i>Melaleuca quinquenervia</i>	Cajeput Tree	A,B-15	M,L	20-40'	15-25'	E	C,IV,D-10
<i>Metasequoia glyptostroboides</i>	Dawn Redwood	A,B-15	H,M	-80'	-40'	D	C,IV-22
<i>Metrosideros excelsus</i>	New Zealand Christmas Tree	A,B	L,V,L	-30'	-30'	E	C,IV-5,6,7,10
<i>Morus alba</i>	White Mulberry	B	M,L	20-60'	30-50'	D	C,IV,D-11,16
<i>Olea europea</i>	Olive	A,B-10	L,VI	-35'	20-30'	E	C,IV,D-11,16,20,X
<i>Parkinsonia aculeata</i>	Jerusalem Thorn	A,B-10	L,V,L	15-30'	15-30'	D	C,IV,D-3,6,7,10,22,X
<i>Phoenix dactylifera</i>	Date Palm	B	M,L	80'	30'	E	C,IV,D-7,11,15,X
<i>Pinus species</i>	Pine	B-30	L,V,L	varies	varies	E	C,IV,D-15,23
<i>Pistacia chinensis</i>	Chinese Pistache	B	M,L	-60'	-50'	D	C,IV,D-22,X
<i>Pittosporum phillyraeoides</i>	Willow Pittosporum	A,B	L	15-25'	10-15'	E	C,IV,D-10
<i>P. rhombifolium</i>	Queensland Pittosporum	A,B	M	15-35'	-25'	E	C,IV,D-22
<i>P. undulatum</i>	Victorian Box	A,B-15	M	-25'	-25'	E	C,IV-22,X
<i>Platanus acerifolia</i>	London Plane Tree	A,B-15	L	40-80'	30-40'	D	C,IV,D-22
<i>P. racemosa</i>	California Sycamore	B	L	50-100'	50-100'	D	C,IV,D-12,21,22,23
<i>Podocarpus gracilior</i>	Fern Pine	B	M	-60'	-60'	E	C,IV,D-16,22
<i>P. macrophyllus</i>	Yew Pine	B	M	-50'	-45'	E	C,IV,D-16,22
<i>Populus fremontii</i>	Fremont Cottonwood	B	M	40-60'	40-60'	D	C,IV,V-12,21,22,23
<i>Prosopis chilensis</i>	Chilean Mesquite	B	L	30-50'	30-50'	E/D	C,IV,D-10,23
<i>P. glandulosa</i>	Honey Mesquite	A,B-15	L,V,L	25-30'	25-30'	D	C,IV,D-5,7,21,22,23
<i>Prunus cerasifera 'Atropurpurea'</i>	Purple-leaf Plum	A,B-10	M,L	25'	25'	D	C,IV,D-10,11,22
<i>P. ilicifolia</i>	Hollyleaf Cherry	A,B-15	L,V,L	15-30'	15-30'	E	C,IV,D-7,11,12,16,23

TREES cont'd

BOTANICAL NAME	COMMON NAME	ZONE	WATER NEEDS	HEIGHT FT	SPREAD FT	E/D	GEOGRAPHICAL AREA-COMMENTS
<i>P. lyonii</i>	Catalina Cherry	A,B-15	L,VL	20-45'	30'+	E	C,IV,D-7,11,12,16,23
<i>Punica granatum</i>	Pomegranate	A,B-10	L	12-18'	-20'	D	C,IV,D-7,11,20
<i>Pyrus calleryana</i> & cultivars	Ornamental Pear	A,B-15	M	varies	varies	D	C,IV,D-10
<i>P. Kawakamii</i>	Evergreen Pear	A,B-10	M	15-30'	15-30'	E,D	C,IV,D-10
<i>Quercus agrifolia</i>	Coast Live Oak	B-30	L,VL	30-70'	70'+	E	C,IV,D-6,12,23
<i>Q. chrysolepis</i>	Canyon Live Oak	B-30	M,L	30-60'	20-60'	E	C,IV-6,12,36
<i>Q. douglasii</i>	Blue Oak	B-30	M	50'	50+	D	C,IV,D-6,12,23
<i>Q. engelmannii</i>	Engelmann Oak	B-30	I	60'	60+	E	IV,D-6,12,33,23
<i>Q. ilex</i>	Holly Oak	B-30	M	40-70'	40-70'	E	C,IV,D-6,23
<i>Q. kelloggii</i>	California Black Oak	B	M	30-80'	-60'	D	IV-6,12,23
<i>Q. lobata</i>	Valley Oak	B-30	L,VL	70'+	70'+	D	C,IV-6,12,23
<i>Q. palustris</i>	Pin Oak	B-30	M	50-80'	5-70'	D	C,IV,D-6,22,23
<i>Q. rubra</i>	Red Oak	B-30	M	60-75'	50'	D	C,IV,D-6,23
<i>Q. suber</i>	Cork Oak	B-30	M	70-100'	-100'	E	C,IV,D-6,23
<i>Q. virginiana</i>	Southern Live Oak	B-30	M,L	60'	100'	E/D	C,IV,D-22
<i>Q. wislizenii</i>	Interior Live Oak	B	M,L	30-75'	75'+	E	IV,D-6,12,23
<i>Rhus lancea</i>	African Sumac	A,B-15	L	20-30'	20-30'	E	C,IV,D-20,22
<i>Robinia ambigua</i>	Locust	B	M,L	30-50'	-30'	D	IV,D-1,7,10,22
<i>R. pseudoacacia</i>	Black Locust	B	L	-75'	30-40'	D	IV,D-1,5,7,10,20,22,X
<i>Sapium sebiferum</i>	Chinese Tallow Tree	B	M	-35'	-35'	D	IV,D-22,X
<i>Schefflera actinophylla</i>	Queensland Umbrella Tree	A,B	H,M	20'+	20'+	E	C-3,8,18
<i>S. pueckleri</i>	Tupidanthus	A,B	H,M	20'+	20'+	E	C-3,8,18
<i>Sophora japonica</i>	Japanese Pagoda Tree	B	M	30-50'	30-50'	D	C,IV,D-22
<i>Stenocarpus sinuatus</i>	Firewheel Tree	A,B-10	M	30'	15'+	E	C,IV-6,10,22
<i>Syagrus romanzoffianum</i>	Queen Palm	A,B	M	50'	-20'	E	C,IV-15
<i>Tabebuia chrysotricha</i>	Golden Trumpet Tree	B	M	25-30'	-30'	E	C,IV-6,10,22
<i>T. impetiginosa</i>	Pink Trumpet Tree	B	M	35'	-30'	E	C,IV-6,10,22
<i>Taxodium mucronatum</i>	Montezuma Cypress	B	H-L	75'	35'	E/D	C,IV-22
<i>Tipuana tipu</i>	Tipu Tree	B	M	-50'	-50'	D	C,IV-10,22
<i>Trachycarpus fortunei</i>	Windmill Palm	A,B	M	-30'	-6'	E	C,IV,D-15
<i>Tristania conferta</i>	Brisbane Box	A,B-15	L,VL	30-60'	-40'	E	C,IV-22
<i>Ulmus parvifolia</i>	Chinese Elm	B-30	M,L	40-60'	50-70'	E'D	C,IV,D-22,X
<i>Umbellularia californica</i>	California Bay	B	L,VL	30-75'	30-75'	E	C,IV,D-5,12,23
<i>Washingtonia filifera</i>	California Fan Palm	B-30	M-VL	60'	20'	E	C,IV,D-3,7,10,12,15,21,X
<i>Zelkova serrata</i>	Sawleaf Zelkova	B	M	60'	60'	D	C,IV,D-22
<i>Ziziphus jujuba</i>	Chinese Jujube	A,B-15	M,L	20-30'	20-30'	D	C,IV,D-11,20,22

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