



City of Anaheim
Fire Department
Fire Prevention Bureau



Specifications and Requirements

Subject: FUEL MODIFICATION PLANS AND MAINTENANCE

These guidelines provide information on how fuel modification zones are to be designed, installed and maintained in order to meet fire safety requirements. A typical fuel modification will consist of four (4) zones, as outlined below, and total approximately 170 lineal feet. All zone dimensions are measured on a horizontal plane.

**Zone A
Irrigated Setback Zone**

- Minimum of 20 feet of level grade beyond the edge of combustible structures, attached accessory structures, or appendages and projections.
- Irrigation by automatic or manual sprinkler systems to maintain healthy vegetation with high moisture content.

**Zone B
Irrigation Zone**

- Minimum of 50 feet of irrigated landscaping in this zone.

**Zone C
Thinning Zone**

- Minimum of 50 feet in this zone.
- Thin existing vegetation 50%.
- Remove all dead and dying growth.
- All fine fuels should be reduced to three inches in height.

**Zone D
Interface Thinning Zone**

- Minimum of 50 feet in this zone.
- Thin existing vegetation 30%.
- Remove all dead and dying vegetation.

Maintenance For All Zones

- Requires continual removal and/or thinning of undesirable combustible vegetation.
- Replacement of dead/dying fire resistant plants.
- Maintain the operational integrity and programming of the irrigation system.
- Irrigated surface fuels shall be maintained at a height not to exceed 18 inches.
- Trees shall be pruned to provide a minimum of 10' clearance from the under story.
- Debris and trimmings shall be removed from the site, or chipped and converted into mulch then evenly dispersed in the same area to a maximum depth of three inches.
- To ensure long-term identification and maintenance, each fuel modification zone shall be identified by an approved permanent marker system every 500 feet.

Maintenance Enforcement

All zones will be inspected by the Fire Department annually. Provisions for continuous maintenance must be documented on the fuel modification plans, i.e., by homeowners' associations, property owners, or other entities. *Maintenance* refers to anything needed to maintain the fuel modification area in a fire-safe condition as required by the Anaheim Fire Department. Enforcement of the provision of maintenance shall be accomplished through any legal remedies available, including fees, liens, prosecution, etc.

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Off-Site Fuel Modification

Every attempt should be made to include fuel modification on-site. If the fuel modification zones consistent with these guidelines cannot be fully contained on the subject property, off-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) Requiring enhanced fire protective construction techniques for developments,
- 3) A combination of construction improvements and adjustments to the fuel modification zones.

Only if on-site alternative means and methods fail to provide an equal level of protection should off-site fuel modification be considered.

Should off-site fuel modification be deemed appropriate, recorded instruments should be established which clearly state the responsibilities and rights of the parties involved relative to the establishment and maintenance of the fuel modification area. Appropriate recorded documents should include a recorded agreement between all parties and a grant of easement for the establishment and maintenance of the fuel modification area. It should be understood that the allowance of off-site fuel modification by an adjacent property owner might affect the rights and/or use of the off-site property. All agreements for any off-site fuel modifications shall be shown on plans with a letter from the adjoining property owner giving rights to maintain.

Plan Submittal and Approval Process

Plans must be submitted for all fuel modification areas and will be reviewed and approved by the City of Anaheim Fire Department. All plans submitted must be drawn to scale (1" = 40' minimum) and must include the following requirements:

- Property lines of proposed development
- Contour lines of proposed development
- Building lines of proposed development (closest to fuel modification area, if possible)
- Dimensions of each zone
- Character description of each zone
- Indication of types of permanent zone markers and their locations
- Access routes to fuel modification areas
- Delineation of impacted existing vegetation
- Plants and specifications, including a plant legend (botanical and common names) for existing and proposed plants
- Designation of irrigated areas
- Irrigation plans and specifications
- Statement on the plans, of ultimate maintenance responsibility
- On title sheet indicate tract/project conditions, CC&Rs and/or deed restrictions relative to fuel modification areas
- Submittal stamped by a licensed landscape architect

Final inspection and approval must be obtained prior to the issuance of certificates of use and occupancy for any structures adjacent to the fuel modification area.

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Guidelines For Planting in Developments Subject to Fuel Modification

- Limit the planting of large unbroken masses, especially trees and large shrubs, while at the same time trying to achieve the desired screening required by the City of Anaheim Planning Department. Groups should be two or three plants maximum, with mature foliage of any group separated horizontally by at least 30 feet.
- Avoid massing of shrubs at bases of trees or larger shrubs.
- Avoid massing of vegetation adjacent to structures, especially under eaves, overhangs, decks, etc.
- Limit the use of plants, which have the following characteristics:
 1. Are known to be especially combustible,
 2. Have dry or deciduous foliage during part of the year,
 3. Develop deciduous or shaggy bark,
 4. Develop dry or dead undergrowth.
- Avoid topping trees as this causes excessive branching, which can increase fire danger.

Undesirable Plant Species (Target Species)

Certain plants are considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be either physical or chemical.

Physical properties that would contribute to high flammability include large amounts of dead material retained within the plant, rough or peeling bark, and the production of copious amounts of litter.

Chemical properties include the presence of volatile substances such as oils, resins, wax, and pitch. Certain native plants are notorious for containing these volatile substances. Plants with these characteristics shall not be planted in any of the fuel modification zones. Should these species already exist within these areas, they should be removed because of the potential threat they pose to any structures.

	<u>Botanical Name</u>	<u>Common Name</u>
	Adenostoma Fasciculatum	Chamise
	Adenostoma Sparsifolium	Red Shanks
	Anthemix Tula	Mayweed
	Artemisia Californica	California Sagebrush
	Brassica Nigra	Black Mustard
	Brassica Rapa	Wild Turnip, Yellow Mustard, Field Mustard
	Cardaria Draba	Noary Cress, Perennial Peppergrass
	Cirsium Vulgare	Wild Artichoke
	Conyza Canadensis	Horseweed
	Cortaderia Selloana	Pampas Grass
	Cynara Cardunculus	Artichoke Thistle
	Eriogonum Fasciculatum	Common Buckwheat
	Heterothaca Grandiflora	Telegraph Plant
	Lactuca Serriola	Prickly Lettuce
	Nicotiana Bigelevel	Indian Tobacco
	Nicotiana Glauca	Tree Tobacco
	Ricinus Communis	Castor Bean Plant
	Sacsola Austails	Russian Thistle/Tumblewood
	Salvia Mellifera	Black Sage/White Sage
	Silybum Marianum	Milk Thistle
	Urtica Urens	Burning Nettle
Ornamental:	Corraders	Pampas Grass
	Cupressus SP	Cypress
	Eucalyptus SP	Eucalyptus
	Junipers SP	Juniper
	Pinups SP	Pine

For further information regarding these requirements contact: Fire Prevention Bureau at (714) 765-4040 between the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday.