

# **APPENDIX K**

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Wildland / Urban Interface: Fuel Modification Standards

# **WILDLAND/URBAN INTERFACE DEVELOPMENT STANDARDS**

## **PART II**

### **FUEL MODIFICATION STANDARDS**

**Originally Developed by the Orange County Wildland/Urban Interface  
Task Force Subcommittee on Fuel Modification  
July, 1994**

**Modified by the San Diego County Wildland/Urban Interface  
Task Force  
November 1995  
Revised August 1997**

**Chief Erwin L. Willis, Chairman**

## LAND DIVISION PROJECTS

### SUBMITTAL CRITERIA: PRELIMINARY FUEL MODIFICATION PLANS

Preliminary fuel modification plans must be submitted to and approved by the FAHJ and PAHJ concurrent with review and approval of any tentative map. This is usually in conjunction with the approval of an urban edge treatment plan by the jurisdictional building/planning department.

Preliminary fuel modification plans will show conceptually the areas of fuel modification necessary to achieve an acceptable level of risk regarding exposure of structures to combustible vegetation.

Submit three (3) sets of prints, preferably prepared by a licensed landscape architect. One to the FAHJ and two to the PAHJ (The local agency may require additional sets.)

The following shall be included on the preliminary fuel modification plan:

1. Delineation of Fuel Modification Zone with a general description of zone's dimensions and character, i.e., "100' Zone of modified vegetation, irrigated where necessary, and re-planted with drought-tolerant and fire-resistant plant material." Give actual linear ("daylight") dimension. This may be greater than 100 feet due to slope. Include 30 feet along both sides of any access roads on project. (See Figures 1 - 3 on pages 37 thru 40)
2. Indicate on the plans existing vegetation impacted by the required fuel modification and, if available, proposed vegetation to be planted in the fuel modification area. The preliminary plans should be sensitive to rare and endangered species and you must be prepared to address their disposition in the final plans. Note: all plant species listed on the "Undesirable Plants and Weeds" list attached must be removed for the 100' modification zone.
3. Indicate on the plans the design of the proposed development, showing all property lines, contour lines, and the proposed location of the building line closest to the fuel modification area, if available.
4. Include photographs of the area which show the type of vegetation that currently exists, including height and density, and the topography of the site.
5. Describe on the fuel modification plans the methods to be used for vegetation removal, if appropriate, i.e., mechanical or manual.
6. Indicate emergency and maintenance access easements on the plans.
7. Describe on the fuel modification plans exactly what exists one hundred (100) feet beyond the development property line in all directions, i.e., construction, natural vegetation, roads, parks, etc.
8. State, on the plans, who has ultimate maintenance responsibility.

Note: *Approval of a fuel modification plan by the fire department does not eliminate the requirement to obtain appropriate environmental, grading, and zoning clearance/permits from the appropriate agencies having jurisdiction.*

## LAND DIVISION PROJECTS

### SUBMITTAL CRITERIA: FINAL FUEL MODIFICATION PLANS

Final fuel modification plans must be submitted to and approved by the FAHJ and PAHJ prior to issuance of a grading permit, or where grading permits are not required, prior to the issuance of a building permit. Note that in all cases implementation of the Fuel Modification Plan will be required prior to issuance of a building permit.

Submit three (3) sets of prints of the final fuel modification plans (one inch equals forty feet scale minimum), preferably prepared by a licensed landscape architect, one to the FAHJ and two to the PAHJ (the local agency may require additional sets.)

The following shall be included on the final fuel modification plan:

1. Delineation of Fuel Modification Zone with a general description of zone's dimensions and character, i.e., Zone of modified vegetation, irrigated where necessary, and re-planted with drought-tolerant and fire-resistant plant material." Give actual linear ("daylight") dimension. This may be greater than 100 feet due to slope. Include 30 feet along both sides of any access roads on project. (See Figures 1 - 3 on pages 37 thru 40)
2. Indicate on the plans the location of the permanent zone markers.
3. Include the irrigation plans and specifications.
4. Attach the completed planting plans and specifications, including both the botanical and common names of existing vegetation within the fuel modification area and those plantings which are proposed. Clearly indicate on the plans the disposition of impacted existing vegetation. Note: all plant species listed on the "Undesirable Plants and Weeds" list attached must be removed for the 100' modification zone.
5. Describe on the fuel modification plans the methods to be used for vegetation removal, if appropriate, i.e., mechanical or manual.
6. Indicate on the plans the design of the proposed development, showing all property, contour, and building lines.
7. Indicate emergency and maintenance access easements on the plans.
8. Show on the fuel modification plans exactly what is one hundred (100) feet beyond the development property line in all directions, i.e., construction, natural vegetation, roads, parks, etc.
9. State, on the plans, who has ultimate maintenance responsibility.
10. Include on the title sheet any tract/project conditions, CC&Rs, and/or deed restrictions related to the project's fuel modification areas.
11. Include a copy of the approved preliminary fuel modification plans with the submittal.

Note: *Approval of a fuel modification plan by the fire department does not eliminate the requirement to obtain appropriate environmental, grading, and zoning clearance/permits from the appropriate agencies having jurisdiction.*

## FUEL MODIFICATION PLAN REVISIONS

Revisions to fuel modification plans shall follow procedures as established by the PAHJ.

### PROJECTS REQUIRING BUILDING PERMITS ONLY (NOT A PART OF A LAND DIVISION PROJECT)

#### SUBMITTAL CRITERIA: FINAL FUEL MODIFICATION PLANS

Final fuel modification plans must be submitted to and approved by the FAHJ and PAHJ prior to issuance of a grading permit, or where grading permits are not required, prior to the issuance of a building permit. Note that in all cases implementation of the Fuel Modification Plan will be required prior to issuance of certificates of use and occupancy (final inspection by FAHJ).

Submit three (3) sets of prints of the final fuel modification plans (one inch equals forty feet scale minimum), preferably prepared by a licensed landscape architect, one to the FAHJ and two to the PAHJ. (The local agency may require additional sets.)

The following shall be included on the final fuel modification plan:

1. Delineation of Fuel Modification Zone with a general description of zone's dimensions and character, i.e., "100' Zone with all existing vegetation removed, irrigated, and re-planted with drought-tolerant and fire-resistant plant material." Give actual linear ("daylight") dimension. This may be greater than 100 feet due to slope. Include 30 feet along both sides of any access roads on project. (See Figures 1 - 3 on pages 37 thru 40)
2. Indicate on the plans the location of the permanent zone markers.
3. Include the irrigation plans and specifications.
4. Attach the completed planting plans and specifications, including both the botanical and common names of existing vegetation within the fuel modification area and those plantings which are proposed. Clearly indicate on the plans the disposition of impacted existing vegetation.
5. Describe on the fuel modification plans the methods to be used for vegetation removal, if appropriate, i.e., mechanical or manual.
6. Indicate on the plans the design of the proposed development, showing all property, contour, and building lines.
7. Indicate emergency and maintenance access easements on the plans, if applicable.
8. Show on the fuel modification plans exactly what is one hundred (100) feet beyond the development property line in all directions, i.e., construction, natural vegetation, roads, parks, etc.
9. State, on the plans, who has ultimate maintenance responsibility.
10. Include on the title sheet any tract/project conditions, CC&Rs, and/or deed restrictions related to the project's fuel modification areas.

Note: *Approval of a fuel modification plan by the FAHJ does not eliminate the requirement to obtain appropriate environmental, grading, and zoning clearance/permits from the appropriate agencies having jurisdiction.*

# FUEL MODIFICATION PLAN SUBMITTAL CHECKLIST

(for Land Division Projects only)

SUBMITTAL AND APPROVAL PLANS	PRELIMINARY PLANS	FINAL
<input type="checkbox"/> Concurrent with review and approval of tentative map	X	
<input type="checkbox"/> Prior to issuance of grading permit. (If no grading permit is required, prior to issuance of building permit.)		X
<input type="checkbox"/> To the Fire Authority Having Jurisdiction.	1 set	1 set
<input type="checkbox"/> To the Planning Agency Having Jurisdiction.	2 sets	2 sets
<b>PLANS REQUIREMENTS</b>		
Delineation of each zone:		
<input type="checkbox"/> • Dimensions. X	X	
<input type="checkbox"/> • Character description.	X	X
<input type="checkbox"/> • Photographs of area with emphasis on existing vegetation and topography.	X	
<input type="checkbox"/> • Indication of permanent zone marker locations.		X
<input type="checkbox"/> Delineation of impacted existing vegetation.	X	X
<input type="checkbox"/> Description of vegetation removal methodology.	X	X
<input type="checkbox"/> Proposed vegetation list, if available.	X	
<input type="checkbox"/> Planting plans & specifications, including a plant legend (Botanical & common names) for existing and proposed plants (1" = 40' min.).		X
<input type="checkbox"/> Designation of irrigated areas.	X	
<input type="checkbox"/> Irrigation plans & specifications (1" = 40' min.).		X
Delineation of proposed development:		
<input type="checkbox"/> • Property lines. X		X
<input type="checkbox"/> • Contour lines. X		X
<input type="checkbox"/> • Building lines (closest to fuel modification area, if possible).	X	
<input type="checkbox"/> • Building lines.		X
<input type="checkbox"/> • Emergency & maintenance access easements.	X	X
<input type="checkbox"/> Description of existing improvements, land uses, & vegetation for 100' beyond property lines in all directions.	X	X
<input type="checkbox"/> Statement, on the plans, of ultimate maintenance responsibility.	X	X
<input type="checkbox"/> On title sheet, indicate tract/project conditions, CC&R, and/or deed restrictions relative to fuel modification areas.		X
<input type="checkbox"/> Include in the submittal a copy of the approved preliminary fuel modification plan.		X

## LAND DIVISION PROJECTS

### REQUIREMENTS FOR PRELIMINARY AND FINAL PLANS

#### DELINEATION

Fuel modification plans must depict fuel modification activities to scale. Minimum dimensional requirements for fuel modification necessitate evaluation by a FAHJ representative in consultation with the appropriate jurisdictional authority. Exact delineation of the fuel modification zones with respect to topographical features and wildland exposure is required. All zone dimensions are measured on a horizontal plane; however, the actual dimensions of the zones on a slope will vary from the horizontal dimensions on the plans.

On large developments, fuel modification zones should be located within lots owned and maintained by associations representing common ownership, e.g., homeowners' associations. The integrity and longevity of the fuel modification zones shall be maintained with sufficient tract/project conditions and CC&Rs to specifically identify the restrictions within the fuel modification areas. Likewise, when fuel modification zones are located on private property, deed restrictions are required to specifically identify the restrictions on any portions of the property subject to fuel modification. (See Figures 1 and 2 on pages 27 and 28 for fuel modification designs.)

#### FUEL MODIFICATION ZONE

The first one hundred (100) feet (as measured horizontally from the proposed structure) of fuel modification consists of irrigated landscaping/agriculture or areas with flammable native vegetation removed and/or replaced by drought-tolerant, fire resistive plants. The plans must delineate that portion of the fuel modification area which will be permanently irrigated. Plant material selection, irrigation system design, and the landscape maintenance management plan shall sensitively address water conservation practices and include methods of erosion control to protect against slope failure. All irrigation shall be kept a minimum of twenty (20) feet from the drip line of any Quercus (oak) species. Exceptions to save desirable species may be submitted to the FAHJ. Drought-tolerant, fire-resistant, and irrigated plant materials are also required within this zone to control soil erosion and reduce vegetation mass near the development/wildland interface. Combustible construction may not be allowed within this zone.

Included as part of the required Fuel Modification Zone would be all areas within thirty (30) feet of both sides of all access roadways.

Debris and trimmings produced by the removal process shall be removed from the site, or if left, shall be converted into mulch by a chipping machine and evenly dispersed to a maximum depth of six (6) inches.

In the Fuel Modification Zone, sensitive and/or protected plant species shall be identified by a qualified biologist as approved by the County of San Diego. These species must be noted on the fuel modification plans and tagged in the field for further disposition. Plant or animal species that are listed by the

Department of Fish and Game (the Department) or the United States Fish and Wildlife Service (the Service) as rare, threatened, or endangered, and that are reported on the property must be addressed. Any proposed impacts shall be addressed in CEQA document(s) and appropriately mitigated by the project before clearing vegetation on the property. The Department and Service shall determine if the proposed abatement or clearance activities are in accordance with the state's California Endangered Species Act and federal Endangered Species Act, respectively. The Department and Service shall require alternative clearance or abatement measures of the landowner, including mitigation as necessary, to conform to the state and federal laws.

If the jurisdiction holds an applicable take authorization such as an approved Natural Community Conservation Plan (NCCP), then the jurisdiction shall determine if the activity is consistent with the authorization. The jurisdiction shall require alternative clearance or abatement measures of the landowner, including mitigation as necessary, to conform to the take authorization. All mitigation conditions that affect the take of listed and sensitive species shall be described in the final environmental document(s) that are prepared for the project, and included in the development approval(s) for the project.

Trees and large tree-form shrubs (e.g., oaks, sumac, toyon) which are being retained with the approval of the FAHJ shall be pruned to provide clearance of three times the height of the understory plant material or ten (10) feet, whichever is higher (see figures 4 & 5 page 30). Dead and excessively twiggy growth shall also be removed.

Any existing plants or plant groupings allowed to remain, with the exception of cacti, succulents, trees, and tree-form shrubs shall be separated by a distance of least twenty (20) feet (See Figure 4 page 40).

## OFF-SITE FUEL MODIFICATION

Due to the variable and sometimes considerable amount of land necessary for fuel modification, development proposals often include a request to have the required fuel modification zones extend onto adjacent properties to meet 100 foot fuel modification zone requirements. However, off-site fuel modification is to be avoided to the maximum extent practical due to problems inherent with enforcement of regulations on adjacent property and the potential for confusion regarding responsibility for fuel modification on areas outside of legal ownership. This is especially critical in areas of habit preserves. Proper on-site fuel modification design should determine where development can safely be located and should be an integral part of the development proposal.

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, on-site alternative means and methods should be sought to provide an equal level of protection from vegetation fires. Alternative means and methods may include, but are not limited to, the following: 1) increasing the width of the setback or irrigated zone dimensions, 2) requiring enhanced fire protective construction techniques for development, and 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. Jurisdictions may want to consider requiring that special findings or criteria be met in order to permit off-site fuel modification.



Should the required fuel modification zone extend off-site, appropriate recorded instruments shall 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 may affect the rights and/or use of the off-site property.

#### **ADDITIONAL FINAL PLAN REQUIREMENT: PLANT LIST**

A plant list must be submitted containing both the botanical and common names of all plant materials that are to be used. In the irrigated zone areas (which commonly serve as a screening buffer between development and open space/park land), plants must be fire resistant and drought tolerant, or irrigated. Plant materials used outside of the irrigated zones must be fire resistant.

Plants from the undesirable plants and weeds list in the appendix shall not be introduced into the fuel modification areas. All plants introduced into the fuel modification area shall be selected from an approved plant list such as the one in the appendix. Irrigated plants used in production agriculture may be used in these areas. Those parties wishing to add plants not found on approved lists may do so if the plants are reviewed and approved by the agencies having jurisdiction, prior to implementation.

Note: There is no such thing as a plant that will not burn. The term fire resistant may be misleading. All plants will burn given sufficient heat and low moisture content. Vegetative fire resistance may be enhanced through adequate irrigation or precipitation.

**BUILDING PERMIT PROJECTS  
(NOT A PART OF A LAND DIVISION PROJECT)  
REQUIREMENTS FOR FINAL PLANS**

**DELINEATION**

Fuel modification plans must depict fuel modification activities to scale. Minimum width requirements for fuel modification necessitate evaluation by an FAHJ representative in consultation with the appropriate jurisdictional authority. Exact delineation of the fuel modification zones with respect to topographical features and wildland exposure is required. All zone dimensions are measured on a horizontal plane; however, the actual dimensions of the zones on the slope will vary from the horizontal dimensions on the plans.

When fuel modification zones are located on private property, deed restrictions may be required to specifically identify the restrictions on any portions of the property subject to fuel modification. (See Figures 1 and 2 on pages 37 and 38 for optional fuel modification designs.)

**FUEL MODIFICATION ZONE**

The first one hundred (100) feet of fuel modification consists of irrigated landscaping/agriculture or areas with native flammable vegetation removed and/or replaced by drought-tolerant, fire resistive plants. The plans must delineate that portion of the fuel modification area which will be permanently irrigated. Plant material selection, irrigation system design, and the landscape maintenance management plan shall sensitively address water conservation practices and include methods of erosion control to protect against slope failure. All irrigation shall be kept a minimum of twenty (20) feet from the drip line of any Quercus (oak) species. This zone shall be cleared of all existing vegetation, irrigated, and planted. Exceptions to save desirable species may be submitted to the FAHJ. Drought-tolerant, fire-resistant and/or irrigated plant materials are also required in this zone to control soil erosion and reduce vegetation mass near the development/wildland interface. Combustible construction may not be allowed within the Fuel Modification Zone.

Included as part of the required Fuel Modification Zone would be all areas within thirty (30) feet of both sides of all access roadways.

Debris and trimmings produced by the removal process shall be removed from the site, or if left, shall be converted into mulch by a chipping machine and evenly dispersed to a maximum depth of six (6) inches.

If biological information is required as part of the project plan submittal, then the presence of any listed or sensitive species on the property shall be described in the final plan document. If the Department or Service has notified the landowner of the presence of any state or federal listed species (rare, threatened, or endangered) on the property, then this information shall be described in the final plan document. The final plan document also will describe all proposed clearing and abatement activities, including any mitigation that may be required.

If the project is within the purview of a jurisdiction that holds a take authorization such as an approved

Natural Community Conservation Plan (NCCP), then the jurisdiction shall require alternative clearing or abatement activities, and mitigation if necessary, to conform to the take authorization. For projects that are not within a jurisdiction with a approved take authorization, then the Department or Service shall require alternative clearing or abatement, and mitigation if necessary, to conform to state and federal laws.

Failure by the landowner to provide the required notification is subject to prosecution by the Department and/or the Service.

Trees and large tree-form shrubs (e.g., oaks, sumac, toyon) which are being retained with the approval of the FAHJ shall be pruned to provide clearance of three times the height of the understory plant material or ten (10) feet, whichever is higher (see figures 4 & 5 page 30). Dead and excessively twiggy growth shall also be removed.

Any existing plants or plant groupings allowed to remain, with the exception of cacti, succulents, trees, and tree-form shrubs shall be separated by a distance of least twenty (20) feet (See Figure 4 page 30).

#### **OFF-SITE FUEL MODIFICATION**

Due to the variable and sometimes considerable amount of land necessary for fuel modification, a requirement may be made to have the required fuel modifications zones extend onto adjacent properties. However, off-site fuel modification is to be avoided to the maximum extent practicable due to problems inherent with enforcement of regulations on adjacent property and the potential for confusion regarding responsibility for fuel modification on areas outside of legal ownership. This is especially critical in areas of habit preserves or park areas. Proper on-site fuel modification design should determine where development can safely be located and should be an integral part of the development proposal.

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, on-site alternative means and methods should be sought to provide an equal level of protection from vegetation fires. Alternative means and methods may include, but are not limited to, the following: 1) increasing the width of the setback or irrigated zone dimensions, 2) requiring enhanced fire protective construction techniques for development, and 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. Jurisdictions may want to consider requiring that special findings or criteria be met in order to permit off-site fuel modification.

Should the required fuel modification zone extend off-site, appropriate recorded instruments shall 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 may affect the rights and/or use of the off-site property.

## **ADDITIONAL FINAL PLAN REQUIREMENT: PLANT LIST**

A plant list must be submitted containing both the botanical and common names of all plant materials that are to be used. In the irrigated zone areas (which commonly serve as a screening buffer between development and open space/park land), plants must be fire resistant and drought tolerant, or irrigated. Plant materials used outside of the irrigated zones must be fire resistant.

Plants from the undesirable plants and weeds list in the appendix shall not be introduced into the fuel modification areas. All plants introduced into the fuel modification area shall be selected from an approved plant list such as the one in the appendix. Irrigated plants used in production agriculture may be used in these areas. Those parties wishing to add plants not found on approved lists may do so if the plants are reviewed and approved by the agencies having jurisdiction, prior to implementation.

Note: There is no such thing as a plant that will not burn. The term fire resistant may be misleading. All plants will burn given sufficient heat and low moisture content. Vegetative fire resistance may be enhanced through adequate irrigation or precipitation.

## LAND DIVISION AND BUILDING PERMIT PROJECTS FUEL MODIFICATION IMPLEMENTATION

### INSTALLATION OF FUEL MODIFICATION

The approved final fuel modification plan is to be installed under the supervision of the FAHJ. Brush removal must be completed prior to commencing any flammable construction. The final inspection procedure may include a landscape architect, and must include the planning/building agency having jurisdiction. 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.

### PERMANENT IDENTIFICATION OF FUEL MODIFICATION ZONES

To ensure long-term identification and maintenance, each fuel modification zone shall be identified by a permanent marker system meeting the approval of both the FAHJ and PAHJ.

### MAINTENANCE AND ENFORCEMENT

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 FAHJ, including the periodic removal of undesirable combustible vegetation; replacement of dead/dying fire-resistant plantings; maintenance of the operational integrity and programming of the irrigation system; and preservation of identification markers. Written evidence indicating responsibility for maintenance must be submitted with both the preliminary and final fuel modification plans.

On going maintenance must be in accordance with the original fuel modification plan.

Enforcement of the provision of maintenance shall be accomplished through any legal remedies available to the jurisdiction, including fees, liens, prosecution, etc.

### TRANSFER OF MAINTENANCE RESPONSIBILITY

Prior to the transfer of the approved and installed fuel modification zones from the developer to the homeowners' association or party(s) responsible for continuing maintenance, an inspection by the FAHJ in company with the developer, home- or property-owners' association representatives, and, preferably, the landscape maintenance contractor, shall be made to determine if the fuel modification meets standards and to provide fuel modification requirements to those responsible for continued maintenance. Approved as built fuel modification plans and specifications, maintenance manuals, documents, and photographs of the completed, established fuel modification shall be turned over to the party having responsibility for continuing maintenance.

## GUIDELINES FOR PLANTING IN FUEL MODIFICATION ZONES

Planting in fuel modification areas on private property shall be in accordance with the following guidelines:

1. Limit planting in large unbroken masses especially trees and large shrubs, while at the same time trying to achieve the desired screening required by the jurisdictional planning/building department. Groups should be two (2) or three (3) maximum, with mature foliage of any group separated horizontally by at least twenty (20) feet.\*
2. Avoid massing of shrubs at bases of trees or larger shrubs.
3. Avoid massing of vegetation adjacent to structures especially under eaves, overhangs, decks, etc.
4. Limit the use of plants which have the following characteristics:
  - a. Are known to be especially combustible. (eg.: conifers, eucalyptus, acacias)
  - b. Have dry or deciduous foliage during part of the year.
  - c. Develop deciduous or shaggy bark.
  - d. Develop dry or dead undergrowth.
5. Conduct periodic maintenance to reduce fuel volumes, eliminate weeds, remove dead vegetation, etc.
6. Provide reliable automatic irrigation systems to maintain vegetation in a healthy, turgid state.
7. Avoid topping trees as this causes excessive branching, which can increase fire danger.
8. Adhere to the plant spacing guidelines on page 10 of these guidelines.
9. Avoid planting of trees within 10 feet of the roadway. Care should be given to the type of tree selected that will not encroach into the roadway, nor produce a canopy effect.
10. Avoid species that are known to be especially flammable such as conifers and eucalyptus

Planting vegetation adjacent to structures and within the Fuel Modification Zone when the zone is located on adjacent property is considered complementary to the fuel modification program and may be subject to periodic inspections by the enforcing agency.

\*Agricultural crops, groves and orchards may be exempted from this requirement.

# Appendix

SAN DIEGO COUNTY FIRE CHIEF'S ASSOCIATION  
 FUEL MODIFICATION ZONE PLANT LIST  
 July 15, 1997

	Code	Botanical Name	Common Name	Plant Form
1	W	<i>Abelia x grandiflora</i>	Glossy Abelia	Shrub
2	<input checked="" type="checkbox"/>	<i>Acacia redolens</i>	Desert Carpet	Shrub
3	<input type="checkbox"/>	<i>Acer macrophyllum</i>	Big Leaf Maple	Tree
4	X	<i>Achillea millefolium</i>	Common Yarrow	Low shrub
5	W	<i>Achillea Tomentosa</i>	Woolly Yarrow	Low shrub
6	X	<i>Aeonium decorum</i>	Aeonium	Ground cover
7	X	<i>Aeonium simsii</i>	ncn	Ground cover
8	W	<i>Agave attenuata</i>	Century Plant	Succulent
9	<input type="checkbox"/>	<i>Agave shawii</i>	Shaw's Century Plant	Succulent
10	N	<i>Agave victoriae-reginae</i>	ncn	Ground cover
11	X	<i>Ajuga reptans</i>	Carpet Bugle	Ground cover
12	W	<i>Alnus cordata</i>	Italian Alder	Tree
13	<input type="checkbox"/>	<i>Alnus rhombifolia</i>	White Alder	Tree
14	N	<i>Aleo arborescens</i>	Tree Aloe	Shrub
15	N	<i>Aloe aristata</i>	ncn	Ground cover
16	N	<i>Aloe brevifolia</i>	ncn	Ground cover
17	W	<i>Aloe vera</i>	Medicinal Aloe	Succulent
18	W	<i>Alyogyne huegelii</i>	Blue Hibiscus	Shrub
19	<input type="checkbox"/>	<i>Ambrosia chamissonis</i>	Beach Bur-Sage	Perennial
20	<input type="checkbox"/>	<i>Amorpha fruticosa</i>	Western False Indigobush	Shrub



SAN DIEGO COUNTY FIRE CHIEF'S ASSOCIATION  
 FUEL MODIFICATION ZONE PLANT LIST  
 July 15, 1997

	Code	Botanical Name	Common Name	Plant Form
21	W	Anigozanthus flavidus	Kangaroo Paw	Perennial accent
22	<input type="checkbox"/>	Antirrhinum nuttalianum ssp. nuttalianum	ncn	Subshrub
23	X	Aptenia cordifolia x 'Red Apple'	Red Apple Aptenia	Ground cover
24	W	Arbutus unedo	Strawberry Tree	Tree
25	W	Arctostaphylos 'Pacific Mist'	Pacific Mist Manzanita	Ground cover
26	W	Arctostaphylos edmundsii	Little Sur Manzanita	Ground cover
27	<input type="checkbox"/>	Arctostaphylos glandulosa ssp.	Eastwood Manzanita	Shrub
28	W	Arctostaphylos hookeri 'Monterey Carpet'	Monterey carpet Manzanita	Low Shrub
29	N <input type="checkbox"/>	Arctostaphylos pungens		Shrub
30	N	Arctostaphylos refugioensis	Refugio Manzanita	Shrub
31	W	Arctostaphylos uva-ursi	Bearberry	Ground cover
32	W	Arctostaphylos x 'Greensphere'	Greensphere Manzanita	Shrub
33	N	Artemisia caucasica	Caucasian Artemisia	Ground cover
34	X	Artemisia pycnocephala	Beach Sagewort	Perennial
35	X <input type="checkbox"/>	Atriplex canescens	Four-Wing Saltbush	Shrub
36	X <input type="checkbox"/>	Atriplex lentiformis ssp. breweri	Brewer Saltbush	Shrub
37	<input type="checkbox"/>	Baccharis emoryi	Emory Baccharis	Shrub
38	W <input type="checkbox"/>	Baccharis pilularis ssp. consanguinea	Chaparral Bloom	Shrub
39	X	Baccharis pilularis var. pilularis 'Twin Peaks#2'	Twin Peaks	Ground cover
40	<input type="checkbox"/>	Baccharis salicifolia	Mulefat	Shrub

SAN DIEGO COUNTY FIRE CHIEF'S ASSOCIATION  
 FUEL MODIFICATION ZONE PLANT LIST  
 July 15, 1997

	Code	Botanical Name	Common Name	Plant Form
41	N	Baileya pauciradiata	Desert Marigold	Ground cover
42	W	Beaucarnea recurvata	Bottle Palm	Shrub/Small tree
43	N☐	Bougainvillea spectabilis	Bougainvillea	Shrub
44	N☐	Brahea armata	Mexican Blue Palm Blue Hesper Palm	Palm
45	N☐	Brahea brandegeei	San Jose Hesper Palm	Palm
46	N☐	Brahea edulis	Guadalupe Palm	Palm
47	☐	Brickellia californica		Subshrub
48	w ☐	Bromus carinatus	California Brome	Grass
49	☐	Camissonia cheiranthifolia	Beach Evening Primrose	Perennial subshrub
50	N	Carissa macrocarpa	Green Carpet Natal Plum	Ground cover/Shrub
51	X	Carpobrotus chilensis	Sea Fig/Ice Plant	Ground cover
52	W	Ceanothus gloriosus 'Point Reyes'	Point Reyes Ceanothus	Shrub
53	W	Ceanothus griseus 'Louis Edmunds'	Louis Edmunds Ceanothus	Shrub
54	W	Ceanothus griseus horizontalis	Yankee Point	Ground Cover
55	W	Ceanothus griseus var. horizontalis	Carmel Creeper Ceanothus	Shrub
56	W	Ceanothus griseus var. Horizontalis 'Yankee Point'	Yankee Point Ceanothus	Shrub
57	☐	Ceanothus megacarpus	Big Pod Ceanothus	Shrub
58	W	Ceanothus prostratus	Squaw Carpet Ceanothus	Shrub
59	☐	Ceanothus spinosus	Green Bark Ceanothus	Shrub

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	Code	Botanical Name	Common Name	Plant Form
60	N□	Ceanothus verruscus	Wart-Stem Ceanothus	Shrub
61	W	Cerastium tomentosum	Snow-in-Summer	Ground cover/Shrub
62	W	Ceratonia siliqua	Carob	Tree
63	W □	Cercis occidentalis	Western Redbud	Shrub/Tree
64	X	Chrysanthemum leucanthemum	Oxeye Daisy	Ground cover
65	W	Cistus erispus	nen	Ground cover
66	W	Cistus hybridus	White Rockrose	Shrub
67	W	Cistus incanus	nen	Shrub
68	W	Cistus incanus ssp. corsicus	nen	Shrub
69	W	Cistus salviifolius	Sageleaf Rockrose	Shrub
70	W	Cistus x purpureus	Orchid Rockrose	Shrub
71	W	Citrus species	Citrus	Tree
72	□	Clarkia purpurea or unguiculata	Showy Fairwell to spring	Annual
73	□	Cneoridium dumosum	Bushrue	Shrub
74	□	Collinsia heterophylla	Chinese Houses	Annual
75	w□	Comarostaphylis diversifolia	Summer Holly	Shrub
76	N	Convolvulus cneorum	Bush Morning Glory	Shrub
77	W	Coprosma kirkii	Creeping Coprosma	Ground cover/Shrub
78	W	Coprosma pumila	Prostrate Coprosma	Low Shrub
79	□	Coreopsis californica	California Coreopsis	Annual
80	W	Coreopsis Lanceolata	Coreopsis	Ground Cover

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	Code	Botanical Name	Common Name	Plant Form
81	N	Correa pulchella	Australian Fushsia	Ground cover
82	W	Cotoneaster buxifolius	ncn	Shrub
83	W	Cotoneaster congestus 'Likiang'	Likiang Cotoneaster	Ground cover/Vine
84	W	Cotoneaster Parneyi	ncn	Shrub
85	X	Crassula Lactea	ncn	Ground cover
86	X	Crassula multicava	ncn	Ground cover
87	X	Crassula ovata	Jade Tree	Shrub
88	X	Crassula tetragona	ncn	Ground cover
89	w□	Croton californicus	California Croton	Ground cover
90	X	Delosperma 'alba'	White Trailing Ice Plant	Ground cover
91	□	Dendromecon rigida	Bush Poppy	Shrub
92	□	Dichelostemma Capitatum	Blue Dicks	Herb
93	N	Distictis buccinatoria	Blood-Red Trumpet Vine	Vine/Climbing vine
94	N	Dodonaea viscosa	Hopseed Bush	Shrub
95	X	Drosanthemum floribundum	Rosea Ice Plant	Ground cover
96	X	Drosanthemum hispidum	ncn	Ground cover
97	X	Drosanthemum speciosum	Dewflower	Ground cover
98	□	Dudleya lanceolata	Lance-leaved Dudleya	Succulent
99	□	Dudleya pulverulenta	Chalk Dudleya	Succulent
100	W	Elaeagnus pungens	Silverberry	Shrub
101	□	Encelia californica	California Encelia	Small Shrub

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	Code	Botanical Name	Common Name	Plant Form
102	□	<i>Epilobium canum</i> ( <i>Zauschneria californica</i> )	Hoary California Fuchsia	Shrub
103	□	<i>Eriastrum sapphirinum</i>	Mojave Woolly Star	Annual
104	N	<i>Eriobotrya japonica</i>	Loquat	Tree
105	□	<i>Eriodictyon crassifolium</i>	Thick-Leaf Yerba Santa	Shrub
106	□	<i>Eriodictyon trichocalyx</i>	Yerba Santa	Shrub
107	w□	<i>Eriophyllum confertiflorum</i>	ncn	Shrub
108	W	<i>Erythrina species</i>	Coral Tree	Tree
109	N	<i>Escallonia species</i>	several varieties	Shrub
110	w□	<i>Eschscholzia californica</i>	California Poppy	Flower
111	X	<i>Eschscholzia mexicana</i>	Mexican Poppy	Herb
112	N	<i>Euonymus fortunei</i>	Winter Creeper Euonymus	Ground cover
113	N	<i>Feijoa sellowiana</i>	Pineapple Guava	Shrub/Tree
114	N	<i>Fragaria chiloensis</i>	Wild Strawberry /Sand Strawberry	Ground cover
115	□	<i>Frankenia salina</i>	Alkali Heath	Ground cover
116	W □	<i>Fremontodendron californicum</i>	California Flannelbush	Shrub
117	X	<i>Gaillardia x grandiflora</i>	Blanketflower	Ground cover
118	W	<i>Galvezia speciosa</i>	Bush Snapdragon	Shrub
119	W	<i>Garrya veatchii</i>	Silktassel	Shrub
120	X	<i>Gazania hybrids</i>	South African Daisy	Ground cover
121	X	<i>Gaxania rigens leucolaena</i>	Trailing Gazania	Ground cover

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	Code	Botanical Name	Common Name	Plant Form
122	<input type="checkbox"/>	<i>Gilia capitata</i>	Globe Gilia	Perennial
123	W	<i>Gilia leptantha</i>	Showy Gilia	Perennial
124	W	<i>Gilia tricolor</i>	Bird's Eyes	Perennial
125	W	<i>Ginkgo biloba</i>	Maidenhair Tree	Tree
126	<input type="checkbox"/>	<i>Gnaphalium californicum</i>	California Everlasting	Annual
127	W	<i>Grewia occidentalis</i>	Starflower	Shrub
128	<input type="checkbox"/>	<i>Grindelia camporum bracteosum</i>	Gum Plant	Ground cover
129	N <input type="checkbox"/>	<i>Hakea suaveolens</i>	Sweet Hakea	Shrub
130	W	<i>Hardenbergia comptoniana</i>	Lilac Vine	Shrub
131	N	<i>Helianthemum mutabile</i>	Sunrose	Ground cover /Shrub
132	<input type="checkbox"/>	<i>Helianthemum scoparium</i>	Rush Rose	Shrub
133	<input type="checkbox"/>	<i>Heliotropium curassavicum</i>	Salt Heliotrope	Ground cover
134	X	<i>Helix canariensis</i>	English Ivy	Ground cover
135	W	<i>Hesperaleo parviflora</i>	Red Yucca	Perennial
136	<input type="checkbox"/>	<i>Heteromeles arbutifolia</i>	Toyon	Shrub
137	X	<i>Hypericum calycinum</i>	Aaron's Beard	Shrub
138	N	<i>Iberis Sempervirens</i>	Edging Candytuft	Ground cover
139	N	<i>Iberis Umbellatum</i>	Globe Candytuft	Ground cover
140	<input type="checkbox"/>	<i>Isocoma menziesii</i>	Coastal Goldenbush	Small shrub
141	<input type="checkbox"/>	<i>Isomeris arborea</i>	Bladderpod	Shrub

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	Code	Botanical Name	Common Name	Plant Form
142	W <input type="checkbox"/>	<i>Iva hayesiana</i>	Poverty Weed	Ground cover
143	N <input type="checkbox"/>	<i>Juglans californica</i>	California Black Walnut	Tree
144	<input type="checkbox"/>	<i>Juncus acutus</i>	Yellow Bush Penstemon	Subshrub
145	<input type="checkbox"/>	<i>Keckiella antirrhinoides</i>	Yellow Bush Penstemon	Subshrub
146	<input type="checkbox"/>	<i>Keckiella cordifolia</i>	Heart Leaved Penstemon	Subshrub
147	<input type="checkbox"/>	<i>Keckiella ternata</i>	Blue Stemmed Bush Penstemon	Subshrub
148	W	<i>Kniphofia uvaria</i>	Red Hot Poker	Perennial
149	W	<i>Lagerstroemia indica</i>	Crape Myrtle	Tree
150	W	<i>Lagunaria patersonii</i>	Primrose Tree	Tree
151	X	<i>Lampranthus aurantiacus</i>	Bush Ice Plant	Ground cover
152	X	<i>Lampranthus filicaulis</i>	Redondo Creeper	Ground cover
153	X	<i>Lampranthus spectabilis</i>	Trailing Ice Plant	Ground cover
154	W	<i>Lantana camara</i> cultivars	Yellow Sage	Shrub
155	W	<i>Lantana montevidensis</i>	Trailing Lantana	Shrub
156	<input type="checkbox"/>	<i>Lasthenia californica</i>	Dwarf Goldfields	Annual
157	W	<i>Lavandula dentata</i>	French Lavendar	Shrub
158	W	<i>Leptospermum laevigatum</i>	Australian Tea Tree	Shrub
159	W	<i>Leucophyllum frutescens</i>	Texas Ranger	Shrub
160	<input type="checkbox"/>	<i>Leymus condensatus</i>	Giant Wild Rye	Large grass
161	N	<i>Ligustrum japonicum</i>	Texas Privet	Shrub

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	Code	Botanical Name	Common Name	Plant Form
162	X	<i>Limonium pectinatum</i>	ncn	Ground cover
163	X	<i>Limonium perezii</i>	Sea Lavender	Shrub
164	w☐	<i>Liquidambar styraciflua</i>	American Sweet Gum	Tree
165	W	<i>Liriodendron tulipifera</i>	Tulip Tree	Tree
166	X	<i>Lonicera japonica</i> 'Halliana'	Hall's Japanese Honeysuckle	Vining shrub
167	☐	<i>Lonicera subspicata</i>	Wild Honeysuckle	Vining shrub
168	X	<i>Lotus corniculatus</i>	Bird's Foot Trefoil	Ground cover
169	☐	<i>Lotus heermannii</i>	Northern Woolly Lotus	Perennial
170	☐	<i>Lotus scoparius</i>	Deerweed	Shrub
171	W ☐	<i>Lupinus arizonicus</i>	Desert Lupine	Annual
172	W	<i>Lupinus benthamii</i>	Spider Lupine	Annual
173	☐	<i>Lupinus bicolor</i>	Sku Lupine	Flowering annual
174	☐	<i>Lupinus sparsiflorus</i>	Lupini/Coulter's Lupine'	Annual
175	W	<i>Lyonothammus florbundus</i> ssp. <i>asplenifollus</i>	Fernleaf Ironwood	Tree
176	W	<i>Macadamia integrifolia</i>	Golden Abundance Oregon	Shrub
177	W	<i>Mahonia aquifolium</i> 'Golden Abundance'	Golden Abundance Oregon Grape	Shrub
178	W	<i>Mahonia nevinii</i>	Nevin Mahonia	Shrub
179	☐	<i>Malacothamnus fasciculatus</i>	Chaparral Mallow	Shrub
180	X	<i>Malephora luteola</i>	Trailing Ice Plant	Ground cover
181	W	<i>Maytenus boaria</i>	Mayten Tree	Tree



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	Code	Botanical Name	Common Name	Plant Form
182	W	Melaleuca nesophila	Pink Melaleuca	Shrub
183	N	Metrosideros excelsus	New Zealand Christmas Tree	Tree
184	<input type="checkbox"/> *	Mimulus aurantiacus	Monkeyflower	Flower
185	<input type="checkbox"/>	Mirabilis californica	Wishbone Bush	Perennial
186	N	Myoporum debile	ncn	Shrub
187	N	Myoporum insulare	Boobyalla	Shrub
188	W	Myoporum parvifolium	ncn	Ground cover
189	W	Myoporum 'Pacificum'	ncn	Shrub
190	<input type="checkbox"/>	Nassella (=Stipa) lepida	Foothill Needlegrass	Ground cover
191	<input type="checkbox"/>	Nassella (=Stipa) pulchra	Purple Needlegrass	Ground cover
192	<input type="checkbox"/>	Nemophila menziesii	Baby Blue Eyes	Annual
193	X	Nerium oleander	Oleander	Shrub
194	<input type="checkbox"/>	Nolina cismontana	Chaparral Nolina	Shrub
195	N	Nolina bigelovii, or N. interrata	Mexican <sup>1</sup> Grasstree	Shrub
196	W	Oenothera berlandieri	Mexican Evening Primrose	Ground cover
197	N	Oenothera hookeri	California Evening Primrose	Flower
198	W	Oenothera speciosa	Showy Evening Primrose	Perennial
199	X	Ophiopogon japonicus	Mondo Grass	Ground cover
200	<input type="checkbox"/> *	Opuntia littoralis	Prickly Pear	Cactus
201	<input type="checkbox"/> *	Opuntia oricola	Oracle Cactus	Cactus

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	Code	Botanical Name	Common Name	Plant Form
202	<input type="checkbox"/> *	<i>Opuntia polifera</i>	Coast Cholla	Cactus
203	W	<i>Osmanthus fragrans</i>	Sweet Olive	Shrub
204	X	<i>Osteospermum fruticosum</i>	Trailing African Daisy	Ground cover
205	X	<i>Parkinsonia aculeata</i>	Mexican Palo Verde	Tree
206	W	<i>Pelargonium peltatum</i>	Ivy Geranium	Ground cover
207	X	<i>Penstemon spectabilis</i>	Beard Tongue	Shrub
208	W	<i>Photinia fraseri</i>	nen	Shrub
209	W	<i>Pistacla chinensis</i>	Chinese Pistache	Tree
210	X	<i>Pittosporum undulatum</i>	Victorian Box	Tree
211	<input type="checkbox"/>	<i>Plantago erecta</i>	California Plantain	Annual
212	**	<i>Plantago insularis</i>	Woolly Plantain	Annual
213	X	<i>Plantago sempervirens</i>	Evergreen Plantain	Ground cover
214	W <input type="checkbox"/>	<i>Platanus racemosa</i>	California Syoamore	Tree
215	W	<i>Plumbago auriculata</i>	Plumbago Cape	Shrub
216	<input type="checkbox"/>	<i>Populus fremontii</i>	Western Cottonwood	Tree
217	X	<i>Portulacaria afra</i>	Elephant's Food	Shrub
218	<input type="checkbox"/>	<i>Potentilla glandulosa</i>	Sticky Cinquefoil	Subshrub
219	X	<i>Potentilla tabernaemontanii</i>	Spring Cinquefoil	Ground cover
220	X	<i>Prunus caroliniana</i>	Carolina Cherry Laurel	Shrub/Tree
221	<input type="checkbox"/>	<i>Prunus ilicifolia</i> ssp. <i>ilicifolia</i>	Holly Leaved Cherry	Shrub

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	Code	Botanical Name	Common Name	Plant Form
222	X	Prunus lyonil	Catalina Cherry	Shrub/Tree
223	N	Punica granatum	Pomegranate	Shrub/Tree
224	W	Puya species	Puya	Succulent/Shrub
225	W	Pyracantha species	Firethorn	Shrub
226	<input type="checkbox"/>	Quercus agrifolia	Coast Live Oak	Tree
227	<input type="checkbox"/> *	Quercus berberdifolia	California Scrub Oak	Shrub
228	<input type="checkbox"/> *	Quercus dumosa	Coastal Scrub Oak	Shrub
229	X <input type="checkbox"/>	Quercus engelmannii	Engelmann Oak	Tree
230	X	Quercus suber	Cork Oak	Tree
231	X	Rhamnus alaternus	Italian Buckthorn	Shrub
232	<input type="checkbox"/>	Rhamnus californica	California Coffee Berry	Shrub
233	<input type="checkbox"/>	Rhamnus crocea	Redberry	Shrub
234	<input type="checkbox"/>	Rhamnus crocea sp. ilicifolia	Hollyleaf Redberry	Shrub
235	N	Rhaphiolepis species	Indian Hawthorn	Shrub
236	<input type="checkbox"/>	Rhus integrifolia	Lemonade Berry	Shrub
237	N	Rhus lancea	African Sumac	Tree
238	<input type="checkbox"/>	Rhus ovata	Sugarbush	Shrub
239	<input type="checkbox"/>	Ribes aureum	Golden Currant	Shrub
240	<input type="checkbox"/>	Ribes indecorum	White Flowering Currant	Shrub
241	<input type="checkbox"/>	Ribes speciosum	Fuchsia Flowering Gooseberry	Shrub

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	Code	Botanical Name	Common Name	Plant Form
242	W	<i>Ribes viburnifolium</i>	Evergreen Currant	Shrub
243	<input type="checkbox"/> +	<i>Romneya coulteri</i>	Matilija Poppy	Shrub
244	X	<i>Romneya coulteri</i> 'white cloud'	White Cloud Matilija Poppy	Shrub
245	w☉	<i>Rosmarinus officinalis</i>	Rosemary	Shrub
246	w☉	<i>Salvia greggii</i>	Autumn Sage	Shrub
247	w☉	<i>Salvia sonomensis</i>	Creeping Sage	Ground cover
248	<input type="checkbox"/>	<i>Sambucus mexicana</i>	Mexican Elderberry	Tree
249	W	<i>Santolina chamaecyparissus</i>	Lavender Cotton	Ground cover
250	W	<i>Santolina virens</i>	Green Lavender Cotton	Shrub
251	<input type="checkbox"/>	<i>Satureja chandleri</i>	San Miquel Savory	Perennial
252	<input type="checkbox"/>	<i>Scirpus acutus</i>	Hard-Stem Bulrush	Perennial
253	<input type="checkbox"/>	<i>Scirpus californicus</i>	California Bulrush	Perennial
254	X	<i>Sedum acre</i>	Goldmoss Sedum	Ground cover
255	X	<i>Sedum album</i>	Green Stonecrop	Ground cover
256	X	<i>Sedum confusum</i>	ncn	Ground cover
257	X	<i>Sedum ilineare</i>	ncn	Ground cover
258	X	<i>Sedum x rubrotinctum</i>	Pork and Beans	Ground cover
259	X	<i>Senecio serpens</i>	ncn	Ground cover
260	<input type="checkbox"/>	<i>Sisyrinchium bellum</i>	Blue-Eyed Grass	Ground cover
261	<input type="checkbox"/>	<i>Solanum douglasii</i>	Douglas Nightshade	Shrub

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	Code	Botanical Name	Common Name	Plant Form
262	<input type="checkbox"/>	<i>Solanum xanthii</i>	Purple Nightshade	Perennial
263	W	<i>Stenocarpus sinuatus</i>	Firewheel Tree	Tree
264	W	<i>Strelitzia nicolai</i>	Giant Bird of Paradise	Perennial
265	W	<i>Strelitzia reginae</i>	Bird of Paradise	Perennial
266	<input type="checkbox"/>	<i>Symphoricarpos mollis</i>	Creeping Snowberry	Shrub
267	W	<i>Tecoma stans</i> ( <i>Stenolobium stans</i> )	Yellow Bells	Shrub/Small tree
268	X	<i>Tecomaria capensis</i>	Cape Honeysuckle	Ground cover
269	N	<i>Teucrium chamaedrys</i>	Germander	Ground cover
270	N	<i>Thymus serpyllum</i>	Lemon Thyme	Ground cover
271	N	<i>Trachelospermum jasminoides</i>	Star Jasmine	Shrub
272	<input type="checkbox"/>	<i>Trichostema lanatum</i>	Woolly Blue-Curis	Shrub
273	X	<i>Trifolium hirtum</i> 'Hyron'	Hyron Rose Clover	Ground cover
274	X	<i>Trifolium fragiferum</i> 'O'Connor's'	O'Connor's Legume	Ground cover
275	<input type="checkbox"/>	<i>Umbellularia californica</i>	California Laurel	Tree
276	<input type="checkbox"/>	<i>Verbena lasiostachys</i>	Western Vervain	Perennial
277	N	<i>Verbena peruviana</i>	nen	Ground cover
278	X	<i>Verbena species</i>	Verbena	Ground cover
279	X	<i>Vinca minor</i>	Dwarf Periwinkle	Ground cover
280	<input type="checkbox"/>	<i>Vitis girdiana</i>	Desert Wild Grape	Vine
281	X	<i>Vulpia myuros</i> 'Zorro'	Zorro Annual Fescue	Grass

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	Code	Botanical Name	Common Name	Plant Form
282	W	Westringia fruticosa		Shrub
283	W	Xanthorrhoea species	Grass Tree	Perennial accent /Shrub
284	W	Xylosma congestum	Shiny Xylosma	Shrub
285	X	Yucca species	Yucca	Shrub
286	<input type="checkbox"/>	Yucca whipplei	Yucca	Shrub

*\*\*\*\*Plants listed in gray boxes may not be appropriate for use in certain locations based on invasiveness and ability to hybridize and will be reviewed on a case by case bases by the appropriate jurisdiction.*

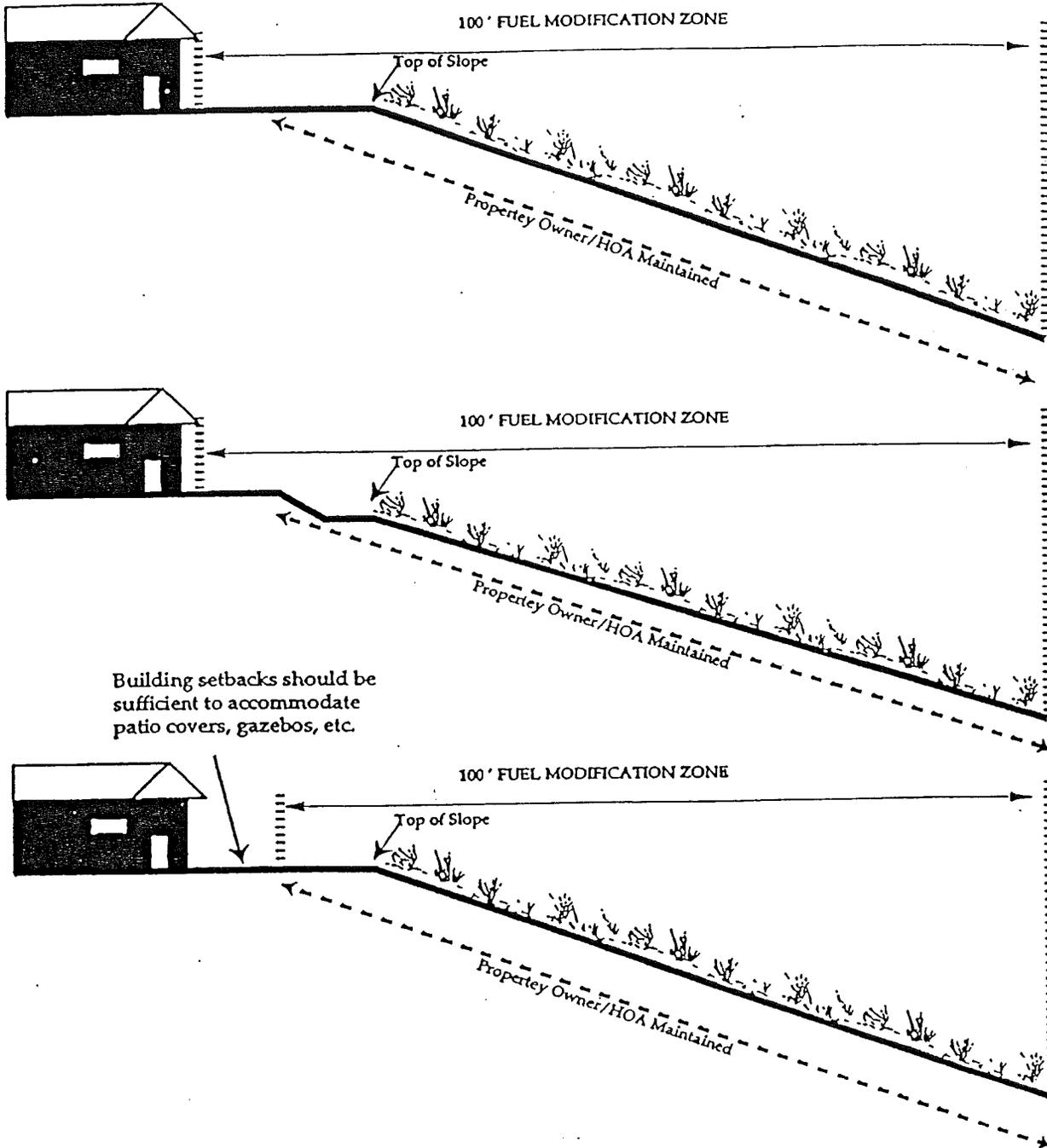
- X = Plant species prohibited in fuel modification zones adjacent to reserve lands. Acceptable on all other fuel modification locations and zones.
- W = Plant species appropriate for use in irrigated portions of fuel modification zones adjacent to reserve lands. Acceptable in all other fuel modification locations and zones.
- = Plant species native to San Diego County. Acceptable in all fuel modification zones in all locations.
- N = Plant species acceptable on a limited basis (maximum 30% of the area at time of planting) in irrigated portions of fuel modification zones adjacent to reserve lands. Acceptable in all other fuel modification locations and zones.
- \* = If locally collected.
- \*\* = Not native but can be used in all zones.
- = Plant species acceptable on a limited use basis. Refer to qualification requirements following plant palette.

## UNDESIRABLE PLANTS AND WEEDS

Within Fuel Modification Zone

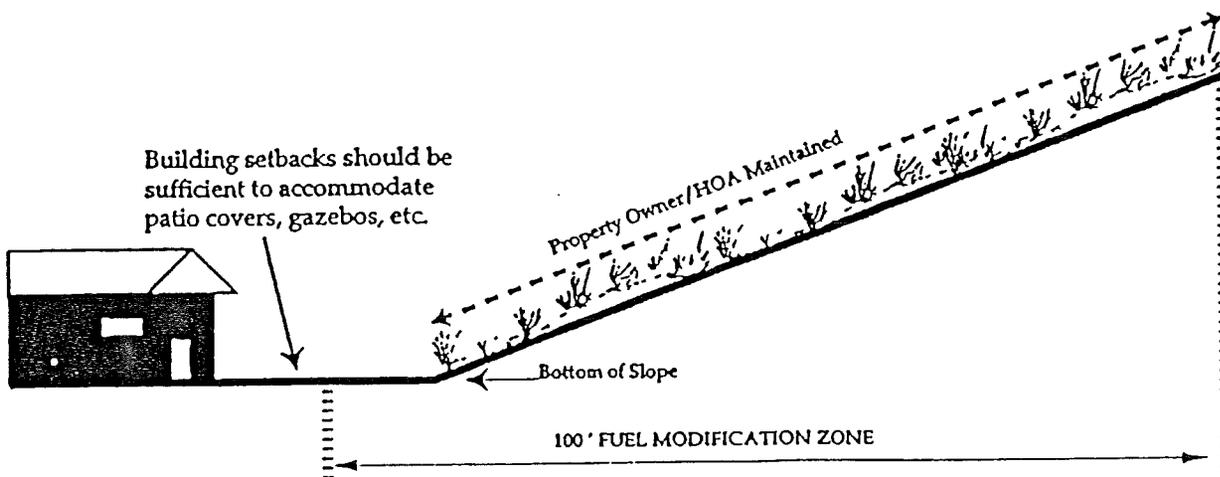
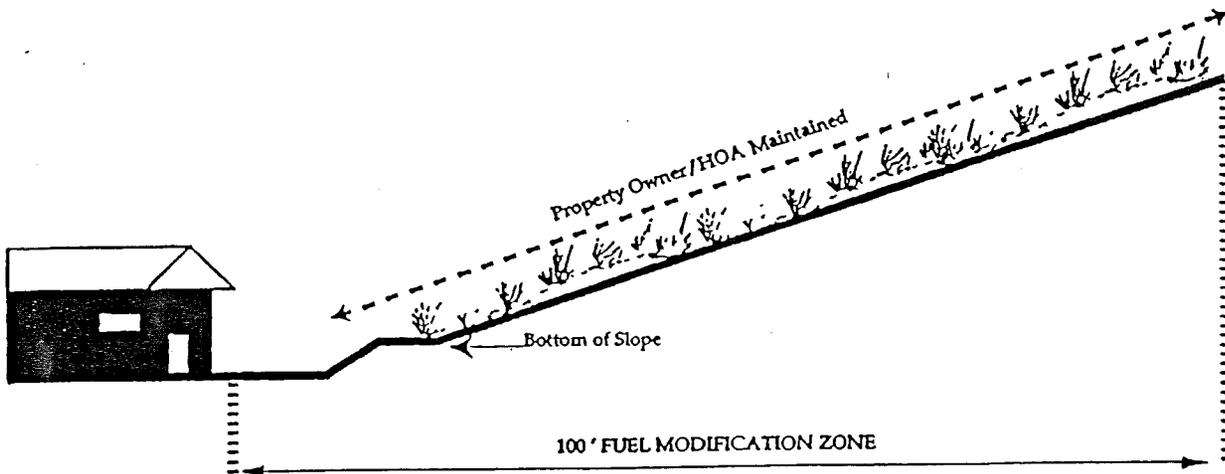
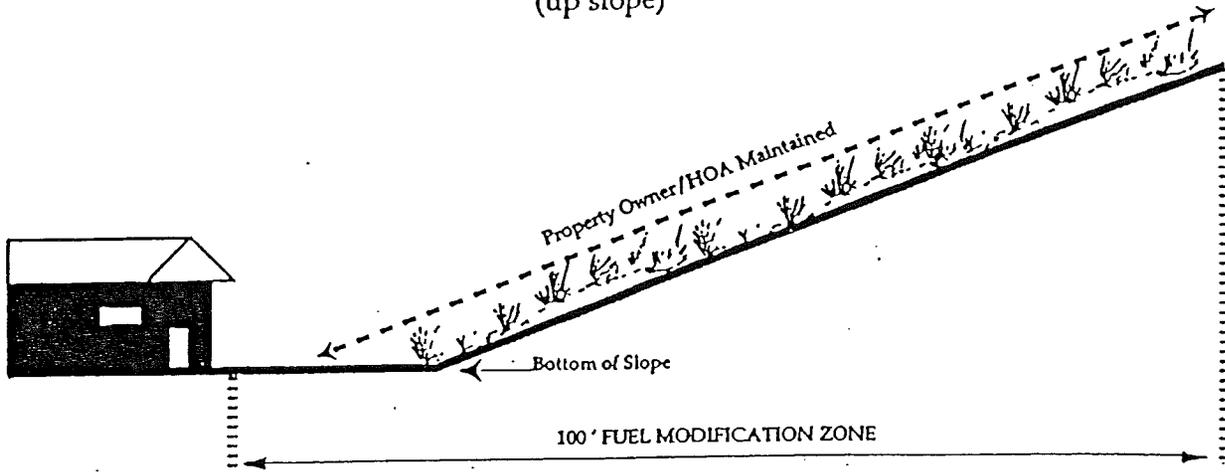
<u>BOTANIC NAME</u>	<u>COMMON NAME</u>
<i>Adenostoma fasciculatum</i>	Chamise
<i>Adenostoma sparsifolium</i>	Red Shanks
<i>Anthemix cotula</i>	Mayweed
<i>Artemisia californica</i>	California Sagebrush
<i>Arundo Donax</i>	Giant Cane
<i>Brassica rapa</i>	Wild Turnip, Yellow Mustard, Field
<i>Brassica nigra</i>	Black Mustard
<i>Cardaria draba</i>	Hoary Cress, Perennial Peppergrass
<i>Cirsium vulgare</i>	Wild Artichoke
<i>Conyza canadensis</i>	Horseweed
<i>Cortaderia selloana</i>	Pampas Grass
<i>Cytisus Spp.</i>	Scotch Broom, French Broom, etc.
<i>Eriogonum fasciculatum</i>	Common Buckwheat
<i>Heterotheca grandiflora</i>	Telegraph plant
<i>Lactuca serriola</i>	Prickly Lettuce
<i>Nicotiana bigelovii</i>	Indian Tobacco
<i>Nicotiana glauca</i>	Tree Tobacco
<i>Salsola australis</i>	Russian Thistle or Tumbleweed
<i>Salvia mellifera</i>	Black Sage
<i>Silybum marianum</i>	Milk Thistle
<i>Tamarix Spp.</i>	Tamarisk
<i>Urtica urens</i>	Burning Nettle
	Most species of Eucalyptus

# FUEL MODIFICATION CONFIGURATION (down slope)

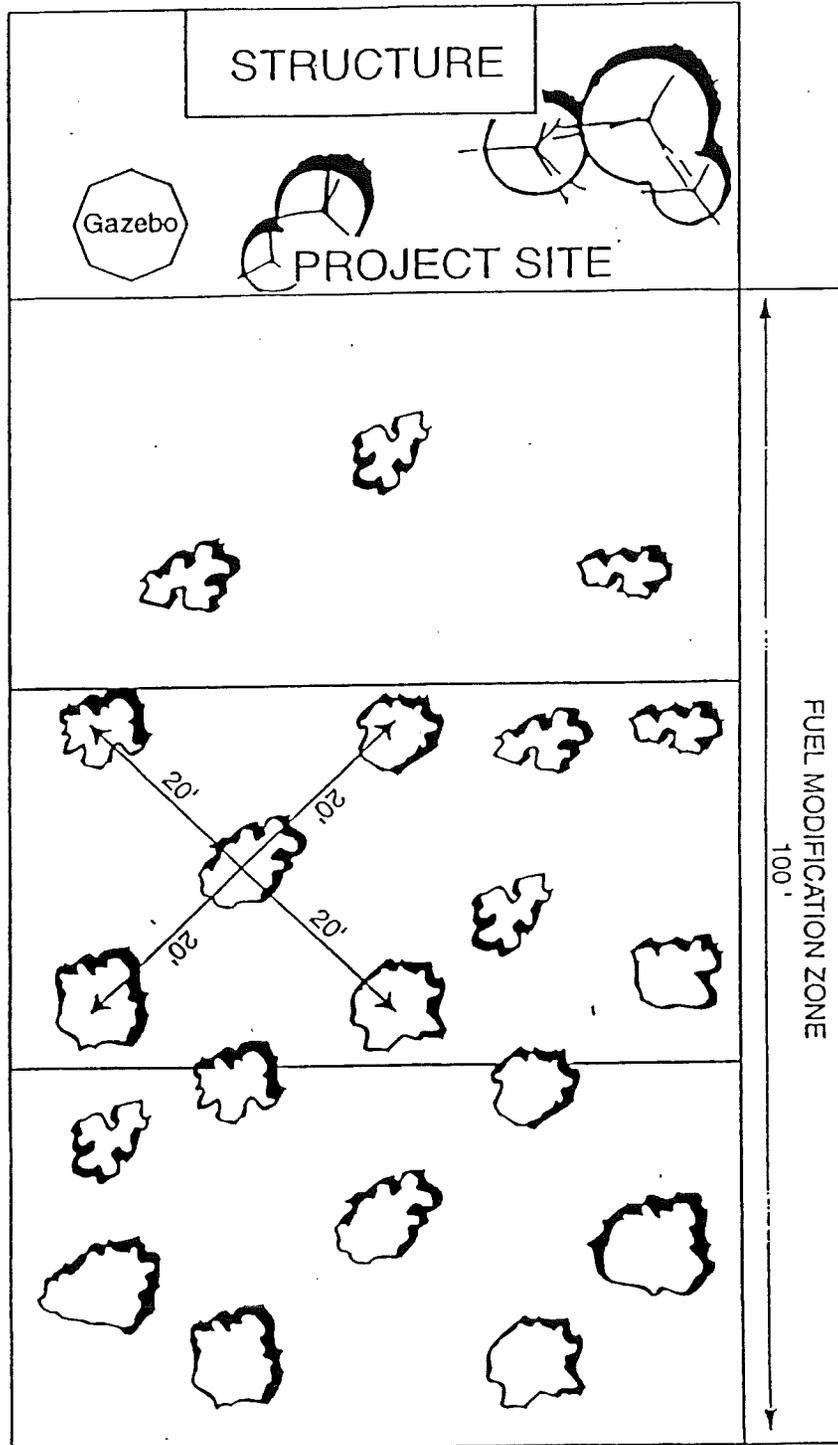




# FUEL MODIFICATION CONFIGURATION (up slope)



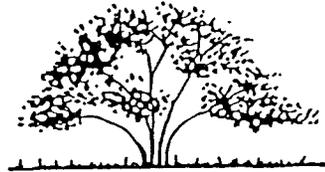
# TREE AND SHRUB SPACING



## TREE AND SHRUB THINNING

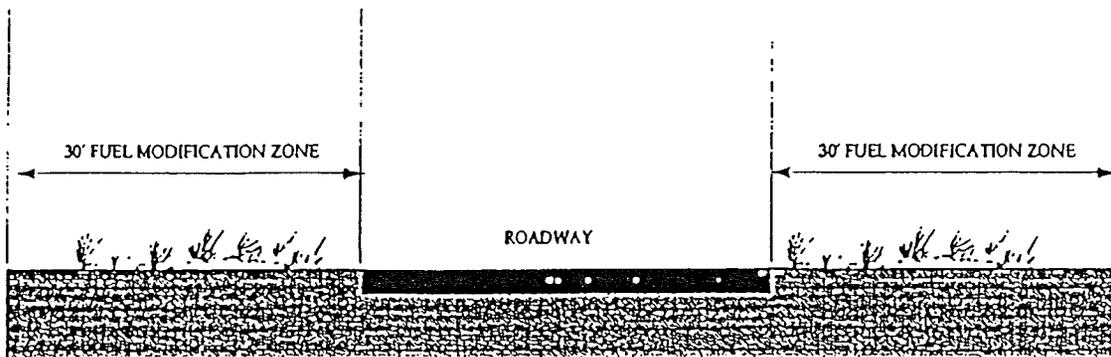
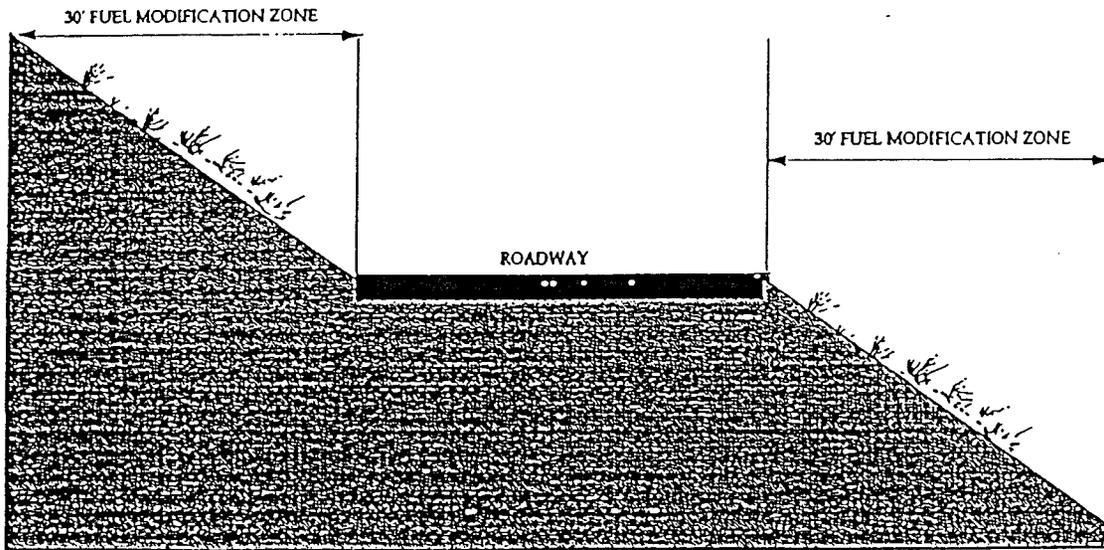
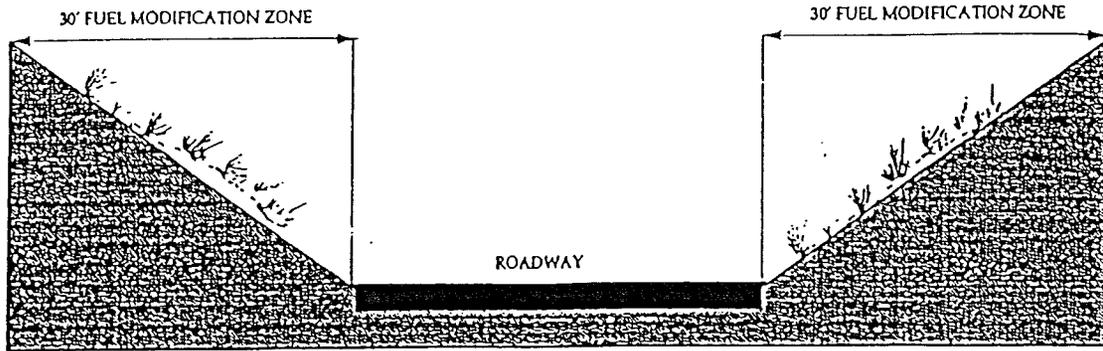


Unpruned Shrub



Shrub Pruned to Remove 40% of  
Flammable Fuel

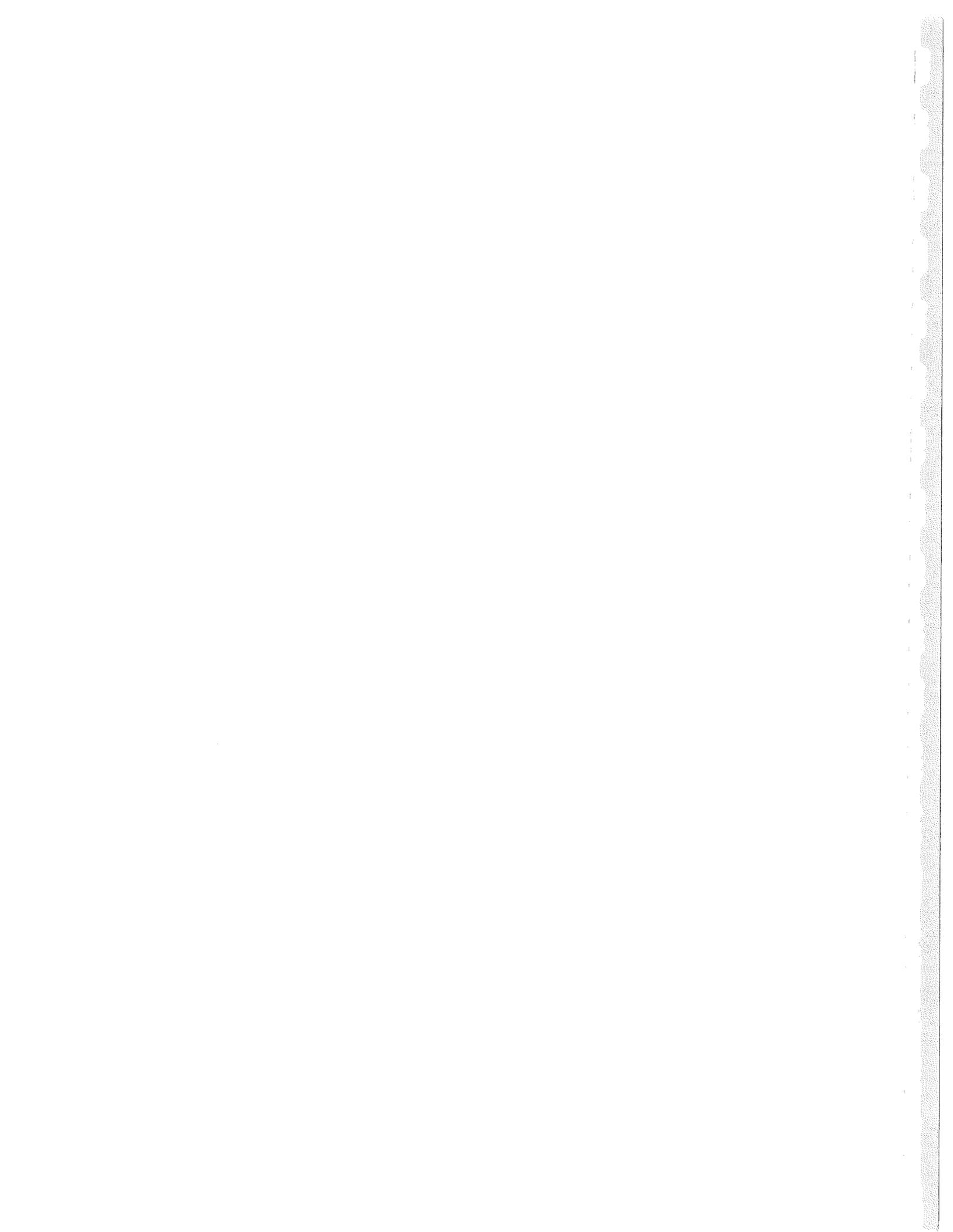
# FUEL MODIFICATION CONFIGURATION (roadway)



# **APPENDIX L**

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Brush Management Memorandum of Understanding



MEMORANDUM OF UNDERSTANDING  
BETWEEN  
THE FISH AND WILDLIFE SERVICE OF  
THE UNITED STATES DEPARTMENT OF THE INTERIOR,  
THE CALIFORNIA DEPARTMENT OF FISH AND GAME,  
THE CALIFORNIA DEPARTMENT OF FORESTRY,  
THE SAN DIEGO COUNTY FIRE CHIEF'S ASSOCIATION AND  
THE FIRE DISTRICT'S ASSOCIATION OF SAN DIEGO COUNTY

**A. INTRODUCTION**

Many species of plants and wildlife in the County of San Diego have been listed and continue to be listed as threatened or endangered by the Secretary of the Interior pursuant to the federal Endangered Species Act and by the California Fish and Game Commission pursuant to the California Endangered Species Act. Additionally, many listed and species that may be listed in the future are protected in certain areas by agreements among jurisdictions and the wildlife agencies, pursuant to the state of California's Natural Communities Conservation Planning (NCCP) program. In light of these listings, officials of the California Department of Forestry, and the members of the San Diego County Fire Chief's Association and the Fire Districts Association of San Diego County have expressed concerns regarding their ability to continue to require the abatement of flammable vegetation within their respective jurisdictions in order to protect life, property and the environment from the threat of fire.

**B. AUTHORITIES**

This Memorandum of Understanding is hereby made and entered into by and between the California Department of Forestry, hereinafter referred to as "CDF"; the San Diego County Fire Chief's Association, hereinafter referred to as the "Fire Chiefs"; the Fire District Association of San Diego County, hereinafter referred to as the "Districts"; the Fish and Wildlife Service of the United States Department of the Interior, hereinafter referred to as the "Service"; and the California Department of Fish and Game, hereinafter referred to as "Department" under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. Section 1531 et. seq.) the Fish and Game Code Section 702 and the California Endangered Species Act, as amended (Fish and Game Code Section 2050, et. seq.).

**C. PURPOSE**

The purpose of this Memorandum of Understanding is to establish guidelines by which the CDF, Fire Chiefs and the Districts can continue to protect lives and property from the threat of fire by requiring the abatement of flammable vegetation pursuant to State Law, County and District ordinances and Cities' municipal codes and to establish a cooperative mechanism whereby the Service and Department may assess, minimize, and help account for potential adverse impacts to sensitive species and habitats resulting from vegetation abatement activities.

## **D. RECITALS**

1. Fire Districts are responsible for assuring compliance with applicable provisions of their ordinances, the California Health and Safety Code and the California Public Resources Code sections 4290 & 4291 regarding the abatement of flammable vegetation.
2. Fire Departments of the Cities are responsible for assuring compliance with the Government Code and applicable provisions of their municipal codes regarding the abatement of flammable vegetation.
3. CDF is responsible for assuring compliance with applicable provisions of the California Public Resources Code sections 4290 & 4291 regarding the abatement of flammable vegetation.
4. The Service is responsible for enforcing the federal Endangered Species Act of 1973.
5. The Department is responsible for enforcing the California Endangered Species Act, and the Native Plant Protection Act. The Service and Department together administer the state NCCP program (NCCP Act of 1991.)
6. Areas immediately surrounding improvements to real property, whether such areas are undeveloped wildlands or are altered in some way, do not generally constitute core natural habitat areas, nor do they typically support sensitive species, by virtue of their proximity to human activities.
7. Uncontrolled wildfires pose a serious threat to human lives and property, but are generally part of the natural disturbance cycle of adjacent wildlands. The propensity of wildlands to carry fire to human developments usually necessitate the provision of fuel breaks in order to reduce or eliminate the likelihood of damage to property.
8. Properly maintained fuel modification zones and fire breaks will reduce the incidence of non-Natural fires spreading from developed areas to natural land and lower the potential impacts of unseasonable and frequent wildfires to listed species and their habitats.”

NOW THEREFORE, the parties hereto mutually agree as follows:

### **Section I. General Terms and Conditions:**

This MOU authorizes the take of species listed as threatened or endangered, or candidate species (under Chapter 1.5 of Division 3 of the Fish and Game Code) for management purposes necessitated by or incidental to those certain fire protection measures described herein.

The management purposes for which this MOU is issued are:

1. Mandatory fire protection measures in accordance with Section 4290 of the Public Resources Code, specifically:



(a) Measures necessary to implement minimum fire safety standards related to defensible space which are applicable to state responsibility are lands under the authority of CDF.

(b) Measures necessary to implement minimum safety standards related to fuel breaks and greenbelts.

(c) Other measures required by Section 4290 as determined by the Director of CDF.

2. Mandatory fire protection measures in accordance with Section 4291 of the Public Resource Code, specifically:

(a) The maintenance around and adjacent to any building or structure in, upon, or adjoining any mountainous area or forest-covered lands, brush-covered lands, or grass-covered lands, or any land which is covered with flammable material, of a fire break made by removing and clearing away, for a distance of not less than 30 feet on each side of such building or structure or to the property line, whichever is nearer, all flammable vegetation or combustible growth.

(b) The maintenance around and adjacent to any building or structure such as is described in (a) above, additional fire protection or fire break made by removing all brush, flammable vegetation, or combustible growth which is located from 30 feet to 100 feet from such a building or structure or to the property line, whichever is nearer, as may be required by the Director of Forestry and Fire Prevention upon a finding that, because of extra hazardous conditions, a firebreak of only 30 feet around such building or structure is not sufficient to provide reasonable fire safety, and including the maintenance of grass and other vegetation more than 30 feet from such building or structure and less than 18 inches in height where necessary to stabilize the soil and prevent erosion.

3. Mandatory fire protection measures in accordance with Section 4296.5 of Public Resource Code, specifically, upon order of the Director of Forestry and Fire Protection or the agency having primary responsibility for the fire protection of the area, the destruction, removal, or modification so as not to be flammable, of any vegetation or other flammable material on any railroad right-of-way on forest-covered, brush-covered, or grass-covered land.

4. Any measures as deemed necessary by the Fire Chief and in accordance with the Guideline section of this MOU.

## Section II. GUIDELINE

The following guidelines may be implemented by individuals or entities owning or leasing property within the jurisdiction of the County and the Cities as well as by CDF, Fire Districts, and the Cities:

- a. **Improved Property.** Property owners, their lessees, CDF, fire districts, and cities shall be permitted to clear all flammable vegetation within a one hundred (100) foot radius of all structures<sup>1</sup> using methods, such as mowing and trimming that leave the plant root structure intact to stabilize the soil. Clearing is not limited to these methods and discing, which exposes bare mineral soil, may be used if deemed necessary by the local fire chief. Where the distance from the structure to the property line of the parcel on which the structure is located is less than the distance required to be cleared, the adjacent owner, lessee, CDF, fire districts, or cities shall be permitted to establish the required fuel break. The removal of flammable vegetation does not apply to single specimens of trees, ornamental shrubbery, or similar plants which are used as ground cover, if the Chief of the local fire department determines that they do not form a means of rapidly transmitting fire from the native growth to any structures.
- b. **Unimproved Property.** Property owners, their lessees, fire districts and cities shall be permitted to establish fuel breaks on unimproved property if such a fire break is deemed necessary based on written findings by the Chief of the local fire department to protect improved property, or public safety and welfare. The Chief of the local fire department shall deem such a fuel break necessary only if the subject property is located within an unusually high fuel loading area or within a high or very high hazard area as determined by California Department of Forestry Fire Severity Mapping. These findings shall be provided to the Department and Service upon their adoption by the Chief of the Fire Department at least ten (10) days prior to the issuance of abatement orders. If the Department of Service fail to respond within the ten-day period, the party may complete the abatement and not be in violation of this MOU. Clearing may be done using methods, such as mowing and trimming that leave the plant root structure intact to stabilize the soil. Clearing is not limited to these methods and discing, which exposes bare mineral soil, may be used if deemed necessary by the local fire chief.
- c. **Areas previously cleared.** Areas that have been consistently cleared of vegetation over the last three years may continue to be cleared even though they are outside of the limits established in Sections a. and b. above.

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<sup>1</sup>For the purposes of this MOU, the term "structure" does not include fences or similar barriers enclosing or separating areas of land.

- d. **Roadway clearance.** Property owners, their lessees, fire districts, the County of San Diego, Cal Trans and cities shall be permitted to clear up to 30' along each side of established regularly traveled roadways. The required width will be at the discretion of the fire chief.
- e. **Prior or Future Agreements.** The terms and guidelines in this MOU may be superseded by any other specific agreement entered into with the Service or the Department governing the removal of vegetation. This MOU shall not preclude revision of the flammable vegetation abatement guidelines contained herein when future regional and local conservation plans are adopted by the local jurisdictions.
- f. **Federal Lands.** Land owned or controlled by Federal Multiple Use Land Management Agencies, will be handled on a "case by case" basis, with the federal agency that controls the subject lands to determine what clearing is appropriate.
- g. Property owners, their lessees, fire districts, and cities shall continue to avoid vegetation removal in recognizable riparian (stream side) zones and vernal pool depressions, as these areas are naturally somewhat resistant to fire and are subject to separate federal and state regulations. If such removal is deemed necessary by the local fire chief, the Department and Service must be notified in writing and consulted at least ten (10) days prior to anticipated vegetation abatement. If the Department and Service fail to respond within the ten-day period, the party may complete the abatement and not be in violation of this MOU.

### **Section III NOTIFICATION OF LANDOWNERS**

Fire agencies that require abatement of flammable vegetation clearance shall develop guidelines for this clearance. These guidelines shall be made available to the public, either through direct mail or a public notices, stating that the guidelines are available and the location where they can be obtained. The guidelines must include directions as to the minimum and maximum limits for vegetation clearing and acceptable clearing methods. Additionally, the following statement shall be included in the guidelines:

Landowners who have received notice from the California Department of Fish and Game or U.S. Fish and Wildlife Service of the occurrence of rare, threatened, or endangered species on their property in areas subject to fuel break clearance must notify both agencies in writing at least 10 days prior to vegetation clearing. The agencies will have up to 10 days following such notification to (1) determine whether the proposed clearing complies with State and/or Federal endangered species requirements and (2) to suggest voluntary, alternative abatement measures if feasible and warranted. Failure of the agencies to respond within 10 days will allow the landowner to proceed with abatement

activities without further delay. Failure by landowners to provide adequate notification as described above may render landowners liable under State and Federal law.

**Section IV.            BIOLOGICAL SURVEYS**

Property owners, their lessees, CDF, fire districts and cities shall not be required to perform biological surveys as a condition precedent to performance of the fire protection activities established by the guidelines set forth in Section 1.

**Section V. PROJECT OFFICERS**

- a. Project Officer for the CDF is:

Ken. Miller, Ranger in Charge  
California Department of Forestry  
2249 Jamacha Rd.  
El Cajon, California 92019

- b. Project Officer for the Fire Chiefs is:

Erwin L. Willis, Fire Chief  
Rancho Santa Fe Fire Protection District  
P.O. Box 410  
Rancho Santa Fe, CA 92067

- c. Project Officer for the Districts is:

Ralph Steinhoff  
North County Fire Protection District  
315 East Ivy Street  
Fallbrook, CA 92028

- d. Project Officer for Service is:

Gail Kobetich, Field Supervisor  
U.S. Fish and Wildlife Service, Carlsbad Field Office  
2730 Loker Avenue West  
Carlsbad, California 92008

- e. Project Officer for the Department is:

Jacqueline Schafer, Director  
Department of Fish and Game  
1416 9th Street  
Sacramento, California 95814

## **Section VI. SPECIAL TERMS AND CONDITIONS**

The CDF, fire districts, cities, the Service and the Department shall comply with the Reasonable and Prudent Measures and the Terms and Conditions identified in Biological Opinion issued by the Service for this action. Take of listed species that is deliberate and results from an act outside the scope of the Project as defined in Section I is not authorized.

It is understood by the parties that the Service authorizes incidental take of the following federally listed threatened and endangered species: arroyo toad (*Bufo microscaphys californicus*), coastal California gnatcatcher (*Polioptila californica*), and Stephen's Kangaroo Rat (*Dipodomys stephensi*), which may be impacted by the fire protection activities established by the guidelines set forth in Section I. Furthermore, it is understood by the parties that the Department authorizes the take of species listed as threatened species or endangered species, or candidate species (under Chapter 1.5 of Division 3 of the Fish and Game Code) which may be impacted by the fire protection activities established by the guidelines set forth in Section I.

Any person who becomes aware of the take of an individual of a candidate or listed species as a result of that person's engaging in the permitted activity shall report the take to the Department as soon as practicable and shall make available the remains of any animal or plant taken to the Department of fish and Game upon demand.

## **Section VII. FINDINGS**

### **1. Department Findings:**

Pursuant to fish and Game Code Section 2081, the Department finds that implementation of the fire control, abatement, and protection measures contemplated by this MOU is not likely to result in jeopardy to the continued existence of the identified State listed or candidate species, if the terms and conditions of the MOU are fully implemented and adhered to. The Department finds, further, that by preventing or limiting the spread of fire to the identified species' habitat, this MOU will serve to protect the identified species from further degradation.

## **Section VIII. AMENDMENTS**

Amendments to this MOU may be proposed by any of the parties and shall become effective upon being reduced to a written instrument executed by all of the parties. It is anticipated and understood by the parties that this MOU, specifically the arroyo toad (*Bufo microscaphys californicus*), coastal California gnatcatcher (*Polioptila californica*), and Stephen's Kangaroo Rat (*Dipodomys stephensi*), may be amended to include additional species that in the future are listed as threatened or endangered by the Secretary of the Interior or the California Fish and Game Commission. In addition, it is understood that this MOU may be amended to include additional parties.

## **Section IX. TERM OF AGREEMENT**

This MOU shall become effective upon the date it is executed by the parties (execution date) and shall remain in effect for an initial period of one (1) year. Thereafter, this MOU shall be automatically extended from year to year on the aforementioned execution date unless the Service or the Department objects to the extension, in writing, within thirty (30) days prior to the expiration of this MOU. Any written objection must state the reason for the objection to the extension of this MOU. In the event a written objection is provided, the parties shall work cooperatively to resolve any problems so that the MOU may be extended.

IN WITNESS WHEREOF, each party hereto has caused this MOU to be executed by an authorized official on the day and year set forth opposite his or her signature.

U.S. FISH AND WILDLIFE SERVICE

By: Gail C. Kobetich

Date: 2.26.97

Title: Gail Kobetich, Field Supervisor

SERVICE CONTRACT SUFFICIENCY REVIEW

By: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

CALIFORNIA DEPARTMENT OF FISH AND GAME

By: J. Schaffer

Date: 2/26/97

Title: Jacqueline Schaffer, Director

CALIFORNIA DEPARTMENT OF FORESTRY, SAN DIEGO RANGER UNIT

BY: Ken Miller

Date: 2-26-97

Title: Ken Miller, Ranger in Charge

SAN DIEGO COUNTY FIRE CHIEF'S ASSOCIATION

By: Erwin L. Willis

Date: 2.26.97

Title: Erwin L. Willis, President

FIRE DISTRICT'S ASSOCIATION OF SAN DIEGO COUNTY

By: Wayne Strange

Date: 2/26/97

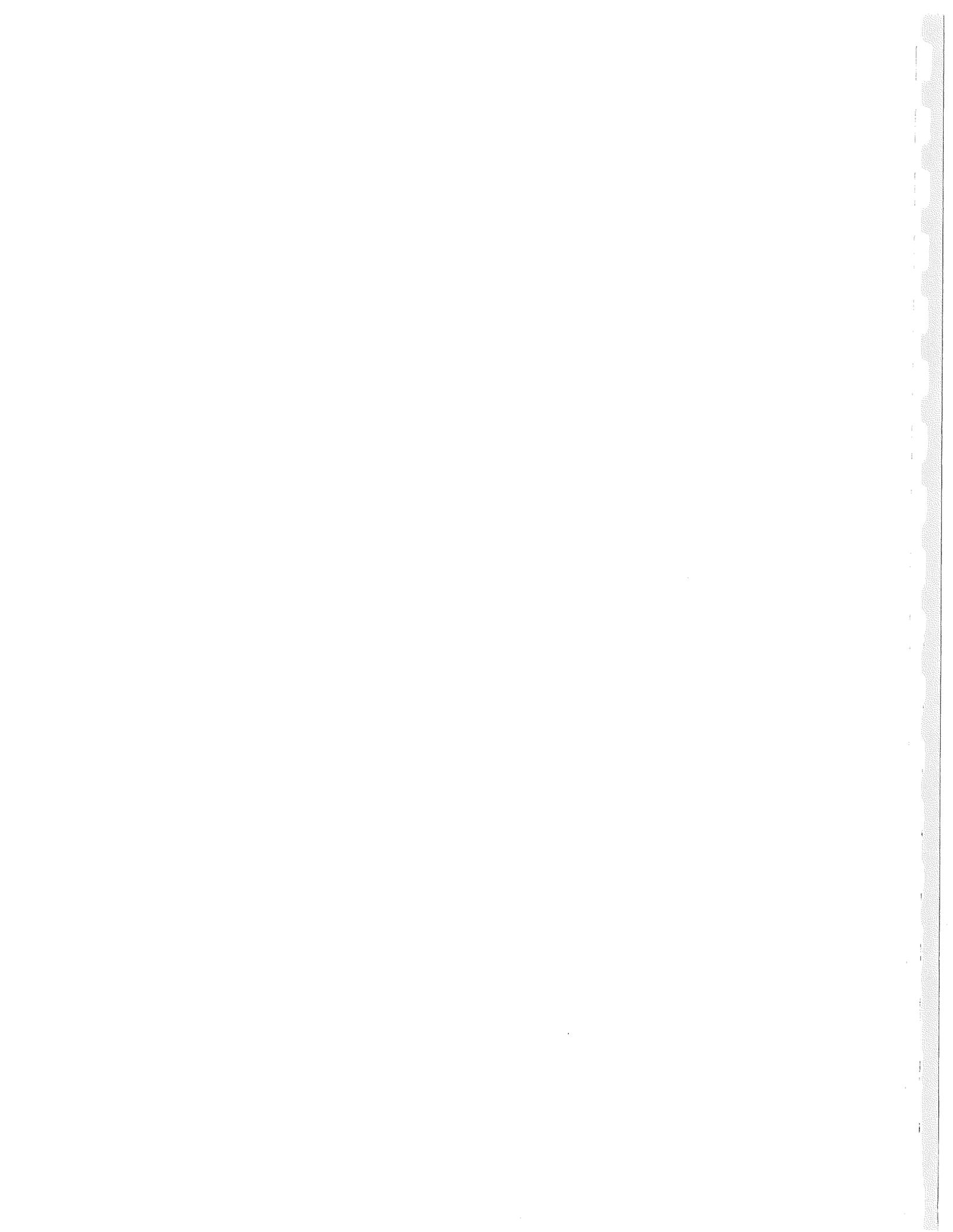
Title: Wayne Strange, President

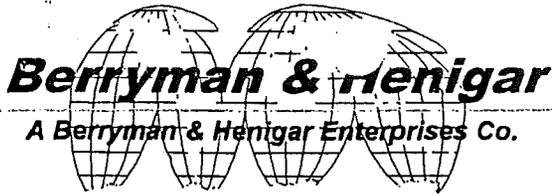


# APPENDIX M

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Otay Ranch CFD 97-02





INC.

## SPECIAL TAX REPORT

COMMUNITY FACILITIES DISTRICT NO. 97-2  
PRESERVE MAINTENANCE DISTRICT

FOR THE  
CITY OF CHULA VISTA



Prepared By  
Berryman & Henigar

JULY 1, 1998

Project No. 14358.00

**COMMUNITY FACILITIES DISTRICT NO. 97-2**  
**Preserve Maintenance District**  
**City of Chula Vista**

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Description of Facilities .....	3
Cost Estimate .....	5
Rate and Method of Apportionment.....	6

APPENDIX A - Calculation of Special Tax for Preserve Maintenance & Monitoring

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**PRESERVE MAINTENANCE DISTRICT**  
**Community Facilities District No. 97-2**  
**City of Chula Vista**

**INTRODUCTION**

The City of Chula Vista (City) has been requested to initiate proceedings to establish a Community Facilities District for the purpose of maintaining areas which have been conveyed to the preserve in accordance with the Otay Ranch Resource Management Plan to protect and enhance biological, paleontological, cultural and scenic resources, maintain biological diversity and promote the survival and recovery of native species and habitat; and to establish an annual biota monitoring program for the preserve in order to identify changes in quality and quantity of on-site biological resources, including sensitive wildlife species, sensitive plants species and sensitive habitat types.

The Preserve Owner/Manager (POM) will oversee the day-to-day and long-range activities within the resource preserve. The POM will take an active role in the maintenance and enhancement of biological resources, the development of educational programs and the implementation of Resource Management Plan policies related to management of the resource preserve.

The proposed District is located in the City of Chula Vista, County of San Diego, State of California, as depicted on a reduced map of the boundaries thereof, Exhibit A, Boundary Map, included herein.

The City adopted a resolution entitled "Resolution of Intention to Establish a Community Facilities District", Resolution No. \_\_\_\_\_ declaring its intention to form the District and ordered the preparation of a report describing the proposed services to be financed by the District if it is formed. The proceedings are being conducted in accordance with the provisions of the "Mello Roos Community Facilities Act of 1982," being Chapter 2.5, Part 1, Division 2, Title 5, commencing with Section 53311, of the Government Code of the State of California (the Act) and the City of Chula Vista Community Facilities District Ordinance (the "Ordinance") being Ordinance No. \_\_\_\_\_ enacted pursuant to the powers reserved by the City under Sections 3, 5 and 7 of Article XI of the Constitution of the State of California and the Charter of the City. The report has been prepared by, or under the direction of the Director of Public Works and other such officers responsible for the providing of the services to be financed by the proposed District. The report has been prepared in accordance with Section 53321.5 of the Act and includes among other information:

- a) A description of the maintenance services which are required to adequately meet the needs of the District (Part II).

- b) An estimate of the fair and reasonable cost of providing maintenance services and all other related costs as provided in Section 53345.3 of the Act (Part III).

**Part I - Description of District**

The proposed District (Preserve Maintenance District) Community Facilities District No. 97-2 as shown in Exhibit A includes the following Assessor's Parcel Numbers:

<u>Assessor's Parcel Number</u>	<u>Owner</u>	<u>Acreage</u>
595-070-33-00	Otay Project LLC	15.39
641-020-15-00	Otay Project LLC	21.89
641-020-18-00	Otay Project LLC	10.00
641-030-16-00	Otay Project LLC	16.50
641-060-04-00	Otay Project LLC	8.16
641-060-06-00	Otay Project LLC	17.91
641-070-01-00	Otay Project LLC	87.86
641-080-01-00	Otay Project LLC	88.89
642-060-11-00	McMillin D. A. America Otay Ranch LLC	140.79
642-071-01-00	DMB/AEW Land Holdings Two/LLC-OVP	23.09
642-071-02-00	Standard Pacific Corp. -OVP	13.40
642-071-03-00	Centex Homes-OVP	10.59
642-071-04-00	DMB/AEW Land Holdings Two/LLC-OVP	19.69
642-071-05-00	Standard Pacific Corp.-OVP	14.84
642-071-06-00	South Bay Project, LLC-OVP	6.53
642-071-07-00	Otay Project, LLC-OVP	72.48
642-071-08-00	Centex Homes-OVP	12.13
642-071-09-00	Otay Project, LLC-OVP	13.74
642-071-10-00	Otay Project, LLC-OVP	7.16
642-071-11-00	Otay Project, LLC-OVP	10.35
642-071-12-00	Otay Project, LLC-OVP	275.39
42-080-01-00	McMillin D. A. America Otay Ranch LLC	157.09
642-090-01-00	Otay Project LLC	92.78
642-100-01-00	McMillin D. A. America Otay Ranch LLC	91.29
643-010-03-00	Otay Project LLC	19.92
643-010-09-00	Otay Project LLC	51.63
643-020-10-00	Otay Project LLC	159.37
643-020-28-00	Otay Project LLC	48.13
643-020-32-00	Otay Project LLC	99.62
643-050-01-00	Otay Project LLC	58.24
643-060-03-00	McMillin D. A. America Otay Ranch LLC	637.73
643-060-04-00	Otay Project LLC	268.55
644-030-01-00	Otay Project LLC	311.03
644-030-06-00	Otay Project LLC	<u>255.85</u>
	<b>TOTAL</b>	<b>3,138.01</b>

EXHIBIT A

PROPOSED BOUNDARY MAP  
COMMUNITY FACILITIES DISTRICT NO. 97-2  
(PRESERVE MAINTENANCE DISTRICT)  
CITY OF CHULA VISTA, COUNTY OF SAN DIEGO  
STATE OF CALIFORNIA

FILED IN THE OFFICE OF THE CITY CLERK OF THE CITY OF CHULA VISTA, THIS \_\_\_\_ DAY OF \_\_\_\_\_, 199\_\_

BY: CITY CLERK BEVERLY A. AUTHIELET  
CITY OF CHULA VISTA  
STATE OF CALIFORNIA

I HEREBY CERTIFY THAT THE WITHIN MAP SHOWING PROPOSED BOUNDARIES OF ORD No. 97-2, IN THE CITY OF CHULA VISTA, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, WAS APPROVED BY THE CITY COUNCIL OF THE CITY OF CHULA VISTA AT A REGULAR MEETING THEREOF, HELD ON THE \_\_\_\_ DAY OF \_\_\_\_\_, 199\_\_ BY ITS RESOLUTION NO. \_\_\_\_\_

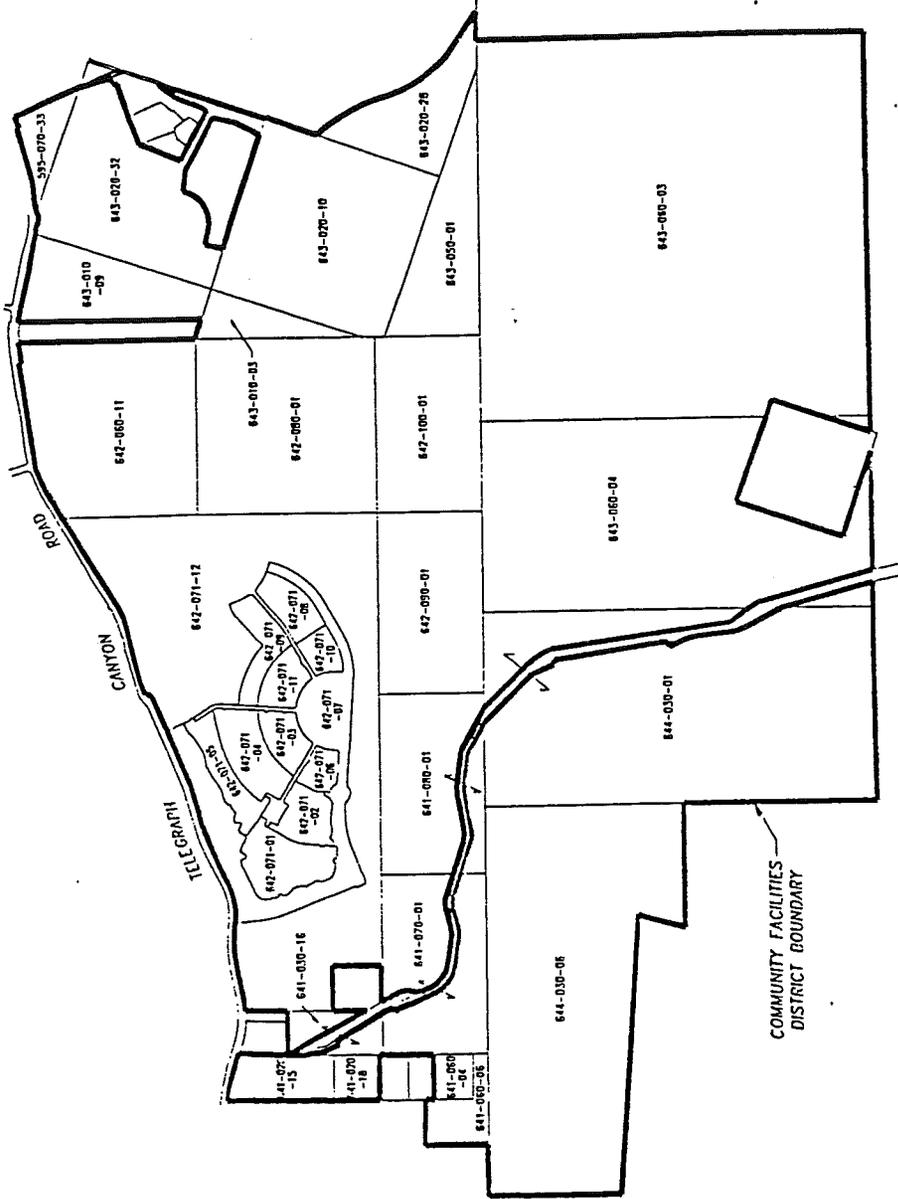
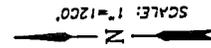
BY: CITY CLERK BEVERLY A. AUTHIELET  
CITY OF CHULA VISTA  
STATE OF CALIFORNIA

FILED THIS \_\_\_\_ DAY OF \_\_\_\_ 199\_\_  
AT THE HOUR OF \_\_\_\_ O'CLOCK \_\_\_\_ M.  
IN BOOK \_\_\_\_ PAGE \_\_\_\_ OF MAPS OF  
ASSESSMENT AND COMMUNITIES FACILITIES DISTRICTS  
IN THE OFFICE OF THE COUNTY RECORDER OF THE  
COUNTY OF SAN DIEGO, CALIFORNIA.

BY: COUNTY RECORDER  
COUNTY OF SAN DIEGO  
STATE OF CALIFORNIA

LEGEND

- MAINTENANCE DISTRICT BOUNDARY
- ASSESSOR PARCEL NUMBER
- PARCEL LINE





## Part II - Description of Facilities/Services

The proposed services include all direct, administrative and incidental annual costs and expenses related to the maintenance, operation and management of public or private property required by the Preserve Owner/Manager (POM) to be maintained within the Otay Ranch Preserve as open space or habitat preservation or both. Such property may be located outside the boundaries of the applicable community facility district and outside the jurisdictional boundaries of the City.

The Otay Ranch Phase 2, Resource Management Plan (RMP) dated June 4, 1996, describes the POM functions that may be funded through land secured financing (pages 77-82), including this CFD. The document also identifies those POM functions that may not be funded through land secured financing, including this CFD. Revenues from this CFD may not be used for enhanced preserve functions such as: the maintenance of more lands than contemplated in the initial preserve boundaries; instructional or educational programs; and expanded or new management programs. Revenues from this CFD may not be used to fund the maintenance, operation or improvement of a regional park located in the preserve.

Revenues from this CFD may be used for preserve maintenance, operation and management, biota monitoring, and preserve security including ordinary and necessary administrative expenses and reserve fund requirements. Such services shall include the following:

### A. Preserve Operations and Maintenance

1. Preserve Maintenance: Develop and implement programs to maintain, operate and manage preserve habitat values through: cultivation, irrigation, trimming, spraying, fertilizing, or treatment of disease or injury; removal of trimmings, rubbish, debris, and other solid waste; maintenance of trails; removal and control of exotic plants species (weeds); and control of cowbirds through trapping efforts.
2. Security: Develop and implement security programs to: enforce "no trespassing" rules; curtail activities that degrade resources, such as grazing, shooting, and illegal dumping; remove trash, litter, and other debris; control access; prohibit off-road traffic; and maintain fences and trails.
3. Preserve Improvements: Acquire (through lease or purchase) equipment or install improvements necessary to perform the maintenance, monitoring and security functions described herein.

**B. Resource Monitoring Program**

1. Biota Monitoring: Implement the annual biota monitoring and reporting program consistent with the RMP to identify changes in the quality and quantity of preserve resources including wildlife species, sensitive plants and sensitive habitat types.

**Part III - Cost Estimate**

The estimate of the fair and reasonable cost of the proposed services for Resource Monitoring, and Preserve and Maintenance Operations including in connection with providing said services, and all other related costs is deemed to be not greater than \$157,466 if all development if all services and facilities were required for the fiscal year ending June 30, 1999 as shown below:

<b>Maintenance Budget</b>	
Maintenance of 1,243 acres - Improvement Area A	\$34,550
Preserve Administration	\$11,516
Allocable Portion of District Administration (36.5%)	\$9,135
<b>Subtotal Maintenance Budget</b>	<b>\$55,201</b>
<b>Monitoring Budget</b>	
Annualized Costs	\$72,000
Contract Administration	\$14,400
Allocable Portion of District Administration (63.5%)	\$15,865
<b>Subtotal Monitoring Budget</b>	<b>\$102,265</b>
<b>Total Budget</b>	<b>\$157,466</b>

Each Fiscal Year thereafter, the City shall cause to be prepared annually a budget showing the estimate of cost for the Resource Monitoring Program, and Preserve Operations and Maintenance for the coming year for Improvement Area A and B of the District. The costs for the Resource Monitoring Program shall be allocated to Improvement Areas A and B in proportion to the gross Acres within each Improvement Area (34% and 66%, respectively). The costs for the Preserve Operations and Maintenance shall be allocated to Improvement Area A only. The budget for each Fiscal Year may show the proportional cost of those maintenance and/or monitoring activities which occur less frequently than on an annual basis. Said budget shall also account for any funds collected from other parcels within the Otay Ranch General Development Planning Area such that the "fair share" costs for Resource Monitoring as determined by the City shall be allocated to this District.

## Part IV - Rate and Method of Apportionment of Special Taxes

### ANNUAL TAX

A Special Tax shall be levied annually on each Parcel of land within the Preserve Maintenance District, Community Facilities District No. 97-2 of the City of Chula Vista (the "District"), and collected according to the Special Tax Liability determined by the City of Chula Vista (the "City") through the application of the following procedures. All of the property within the District, unless otherwise exempted by law or the express provisions of the rate and method of apportionment expressed below, shall be taxed to the extent and in the manner provided below.

All Parcels within the District are included within either Improvement Area A or Improvement Area B. A map of the Improvement areas is included as Exhibit B.

All Special Taxes applicable to Parcels be collected in the same manner and at the same time as ordinary ad valorem property taxes, and Special Taxes so levied will be subject to the same penalties and procedures, sale and lien priority in case of delinquency as is provided for ad valorem taxes.

### DEFINITIONS

**Acre or Acreage** means the area of a Parcel as shown on the latest maps of the Assessor of the County of San Diego, or if the area of such Parcel is not shown on such Assessor's maps, the area as shown on a current recorded subdivision map, parcel map, record of survey or other recorded document creating or describing the Parcel. If the preceding maps are not available, the area shall be determined by the City Engineer.

**Administrative Expenses** means the direct and indirect expenses incurred by the City in carrying out its duties with respect to the District (including, but not limited to, the levy and collection of the special taxes) including the fees and expenses of its counsel, any fees of the County related to the District or the collection of special taxes, an allocable share of the salaries of City staff directly related thereto and a proportionate amount of the City's general administrative overhead related thereto, any amounts paid by the City from its general fund with respect to the District, and all other costs and expenses of the City related to the District.

**Building Square Foot or Square Footage** means the square footage as shown on a Parcel's building permit, excluding garages or other structures not used as living space.

**City** means the City of Chula Vista.



**Developed Parcel** means Taxable Property for which a foundation building permit or other form of building permit has been issued as of March 1 of the preceding Fiscal Year.

**District** means the Preserve Maintenance District Community Facilities District No. 97-2 of the City of Chula Vista.

**Final Map** means a recorded Tract Map or Parcel Map.

**Fiscal Year** means the period starting on July 1 and ending the following June 30.

**Improvement Area** means one of the two specific areas as shown in Exhibit B.

**Maximum Special Tax** means the maximum special tax that can be levied within each Improvement Area within CFD No. 97-2 by the City Council in any Fiscal Year for each Parcel of Taxable Property.

**Non-Residential Parcels** shall include each Parcel within the District which is zoned for other than Residential Uses by the City.

**Non-Residential Uses** shall include all Developed Parcels which are not zoned for Residential Uses including commercial, industrial, and Community Public Facilities (CPF).

**Operating Fund** means a fund that shall be maintained for each Improvement Area within the District for any Fiscal Year to pay for Resource Monitoring and/or Preserve Operations and Maintenance activities and Administrative Expenses.

**Operating Fund Balance** means the amount of funds in the Operating Fund for each Improvement Area at the end of the preceding Fiscal Year.

**Operating Fund Requirement** means for any Fiscal Year an amount for each Improvement Area equal to the Resource Monitoring Fund Requirement and the Preserve Operations and Maintenance Fund Requirement for the current Fiscal Year in which Special Taxes are levied.

**Parcel** means any San Diego County Assessor's Parcel or portion thereof that is within the boundaries of the District designated on a map of the San Diego County Assessor and which has been assigned a discrete identifying number on the equalized tax rolls of the County.

**Preserve Operations and Maintenance** means those activities defined in Part II A. of the Special Tax Report dated July 1, 1998 for Community Facilities District No. 97-2 of the City of Chula Vista.

**Preserve Operations and Maintenance Fund Requirement** means for any Fiscal Year an amount equal to the budgeted costs for Preserve Operations and Maintenance plus a pro-rata share of the budgeted Administrative Expenses of the District for the current Fiscal Year in which Special Taxes are levied.

**Residential Parcels** shall include each Parcel within the District which is zoned for Residential Uses by the City.

**Residential Uses** shall include those residential uses as permitted in the City zoning ordinance.

**Reserve Fund** means a fund that shall be maintained for each Improvement Area to provide necessary cash flow for the first six months of each Fiscal Year, working capital to cover monitoring, maintenance and repair cost overruns and delinquencies that may arise in connection with the collection of Special Taxes and a reasonable buffer against large variations in annual special tax amounts.

**Reserve Fund Balance** means the amount of funds in the Reserve Fund at the end of the preceding Fiscal Year.

**Reserve Fund Requirement** means an amount equal to up to 100% of the Operating Fund Requirement for any Fiscal Year.

**Resource Monitoring Program** means those activities defined in Part II B. of the Special Tax Report dated July 1, 1998 for Community Facilities District No. 97-2 of the City of Chula Vista.

**Resource Monitoring Fund Requirement** means for any Fiscal Year an amount for each Improvement Area equal to the Improvement Area's fair share of the budgeted costs of the Resource Monitoring Program plus a pro rata share of the budgeted Administrative Expenses of the District for the current Fiscal Year in which Special Taxes are levied. An Improvement Area's "fair share" shall be based upon the Improvement Area's percentage of the total acreage within the Otay Ranch General Development Plan Planning Area for which a Resource Monitoring Program funding mechanism has been established.

**Special Tax** means the special tax or special taxes actually levied within CFD No. 97-2 each Fiscal Year.

**Special Tax Liability** for any Fiscal Year is an amount sufficient to pay the costs of an Improvement Area within the District equal to: (i) the Resource Monitoring Fund Requirement, and Preserve Operations and Maintenance Fund Requirement, less the Operating Fund Balance, and (ii) the Reserve Fund Requirement, less the Reserve Fund Balance.

**Tax Categories** are those Categories I, II and III described in the body hereof.

**Taxable Property** is all real property or Parcels within the boundaries of the District which are not exempt from the Special Tax pursuant to the law or which are not classified or assigned to the Exempt Category as defined herein.

Categories of Special Taxes

**Category I**

Category I includes each Developed Parcel within the District. (Category I)

The Maximum Special Tax for Resource Monitoring, and Preserve Operations and Maintenance that may be levied for Fiscal Year 1998/99 on each Developed Parcel shall be at the rates set forth in Table 1 below. For Residential Parcels the Special Tax shall be levied based upon Building Square Footage and for Non-Residential Parcels shall be levied based on Acreage. The Maximum Special Tax shall be increased or decreased each Fiscal Year thereafter by a factor which is the lesser of the annual percentage change in the January to January San Diego Metropolitan Area All Urban Consumer Price Index (All Items) or the annual percentage change in the estimated California Fourth Quarter Per Capita Personal Income as contained in the Governor's budget published every January.

TABLE 1 Maximum Special Tax Category I		
	Resource Monitoring	Operation & Maintenance
Residential Parcels	\$0.0049 per sq. ft.	\$0.0078 per sq. ft.
Non-Residential Parcels	\$80.96 per Acre	\$128.53 per Acre

**Category II**

Category II includes each Parcel of Taxable Property within the District for which a Final Map has been recorded, but which is not classified as a Developed Parcel (Category II).

The Maximum Special Tax for Resource Monitoring, and Preserve Operations and Maintenance that may be levied for Fiscal Year 1998/99 on each Parcel in Category II shall be as shown in Table 2 below (said amount to be levied pro rata for any portion of an Acre). Said Maximum Special Tax shall be increased or decreased each Fiscal Year thereafter by a factor which is the lesser of the annual percentage change in the January to January San Diego Metropolitan Area All Urban Consumer Price Index (All Items) or the annual percentage change in the estimated California Fourth Quarter Per Capita Personal Income as contained in the Governor's budget published every January.



TABLE 2 Maximum Special Tax Category II	
Resource Monitoring	Operation & Maintenance
\$80.96 per Acre	\$128.53 per Acre

**Category III**

Category III includes each Parcel of Taxable Property within the District not subject to a Special Tax under any other category ("Category III").

The Maximum Special Tax which may be levied for Fiscal Year 1998/99 on Taxable Property within Category III shall be as shown in Table 3 below (said amount to be levied pro rata for any portion of an Acre). Said Maximum Special Tax shall be increased or decreased each Fiscal Year thereafter by a factor which is the lesser of the annual percentage change in the January to January San Diego Metropolitan Area All Urban Consumer Price Index (All Items) or the annual percentage change in the estimated California Fourth Quarter Per Capita Personal Income as contained in the Governor's budget published every January.

TABLE 3 Maximum Special Tax Category III	
Resource Monitoring	Operation & Maintenance
\$51.21 per Acre	\$81.30 per Acre

**Exempt Category**

The Exempt Category includes each property owned, conveyed or irrevocably offered for dedication to a public agency, or land which is in the public right-of-way, unmanned utility easements which make utilization for other than the purpose set forth in the easement impractical, common areas, private streets and parks, and open space lots ("Exempt Category").

Assignment to Categories of Special Tax

On or about July 1 of each year, (but in any event in sufficient time to include the levy of the Special Taxes on the County's secured tax roll), the City shall assign each Parcel within the District to Category I, Category II, Category III or the Exempt Category. Parcels subject to levy shall be determined based upon the records of the San Diego County Assessor.

Levy and Apportionment of Special Taxes

The City shall determine the Special Tax Liability for each Improvement Area in each Fiscal Year on or about every July 1. Special Taxes shall then be levied on each Parcel classified as the Category I, Category II, or Category III in the following order of priority:

Improvement Area A

**Step 1:** Determine the revenue which could be generated by Parcels assigned to Category I by multiplying the Building Square Footage for Parcels classified as Residential Parcels by the Maximum Special Tax per Building Square Foot for Resource Monitoring, and Preserve Operations and Maintenance for Parcels and adding to that the maximum revenue which could be generated by multiplying the total acres for Parcels classified as Non-Residential Parcels by the Maximum Special Tax per Acre for Resource Monitoring and Preserve Operations and Maintenance.

**Step 2:** If the total revenue as calculated in Step 1 is greater than the estimated Special Tax Liability for Improvement Area A, reduce the Special Tax for each Parcel proportionately so that the Special Tax levy for the Fiscal Year is equal to the Special Tax Liability for the Fiscal Year.

**Step 3:** If the total revenue as calculated in Step 1 is less than the Special Tax Liability for Improvement Area A, a Special Tax shall be levied upon each Parcel within Improvement Area A, classified as Category II. The Special Tax for Parcels assigned to Category II shall be calculated as the lessor of:

- (i) The Special Tax Liability for Improvement Area A as determined by the City, less the total revenue generated for all Parcels under Step 1 above, divided by the total Acres for all Parcels within Improvement Area A assigned to Category II,

OR

- (ii) the Maximum Special Tax rate for Parcels assigned to Category II

**Step 4:** If the total revenue as calculated in Step 1 and 3 is less than the Special Tax Liability, for Improvement Area A, a Special Tax shall be levied upon each Parcel within Improvement Area A classified as Category III. The Special Tax for Parcels assigned to Category III shall be calculated as the lessor of:

- (i) The Special Tax Liability for Improvement Area A as determined by the City, less the total revenue generated for all Parcels under Step 1 and 3 above,

divided by the total Acres for all Parcels within Improvement Area A assigned to Category III,

OR

(ii) the Maximum Special Tax rate for Parcels assigned to Category III and within Improvement Area A.

However, in the event it is determined that the Special Tax Liability for Improvement Area A includes delinquent Special Taxes from Parcels in Category III from the prior Fiscal Year, the City shall determine the amount of delinquent taxes that arose from such Parcels and identify the owner(s). The amount of delinquent Special Taxes, if any, that arose from the applicable owner(s) shall first be divided by the total Category III Acres owned by such owner(s) and collected from the applicable owner(s) with the remaining portion of the Special Tax Liability not related to delinquent Special Taxes to be collected from all Parcels in Category III according to the procedure set forth in the preceding paragraph.

#### **Improvement Area B**

**Step 1:** Determine the revenue which could be generated by Parcels assigned to Improvement Area B for Resource Monitoring by multiplying the total Acres for Parcels assigned to Category III by the Maximum Special Tax for Category III.

**Step 2:** If the total revenue as calculated in Step 1 is greater than the Special Tax Liability for Improvement Area B, reduce the Special Tax for each Parcel proportionately so that the Special Tax levy for the Fiscal Year is equal to the Special Tax Liability for Improvement Area B for the Fiscal Year.

However, in the event it is determined that the Special Tax Liability for Improvement Area B includes delinquent Special Taxes from Parcels in Category III from the prior Fiscal Year, the City shall determine the amount of delinquent taxes that arose from such Parcels and identify the owner(s). The amount of delinquent Special Taxes, if any, that arose from the applicable owner(s) shall first be divided by the total Category III Acres owned by such owner(s) and collected from the applicable owner(s) with the remaining portion of the Special Tax Liability not related to delinquent Special Taxes to be collected from all Parcels in Category III according to the procedure set forth in the Step 1 and Step 2 above.

# APPENDIX A

## Calculation of Special Tax for Preserve Maintenance and Monitoring

	<u>Improvement Area A</u>	<u>Improvement Area B</u>	<u>Totals</u>
Total Developable Gross Acreage	1,060.56	2,077.45	3,138.01
Develop. Acreage Impr. Area A as % of total	34%	66%	100%
Preserve Acreage which will be dedicated	1,243		1,243.00
<b><u>Annual Preserve Budget</u></b>			
Preserve Maint. @ \$37.06/ac (includes 10% reserve)	\$60,721.10	0.00	\$60,721.10
Biota Monitoring Program (includes 10% reserve)			
34.0% Area A	\$38,247.11		\$38,247.11
66.0 Area B		\$74,244.39	\$74,244.39
			<u>\$112,491.50</u>
Total Budget (110% Coverage)	\$98,968.21	\$74,244.39	\$173,212.60
Square Footage-Otay	6,569,360	N/A	6,569,360
Square Footage-McMillin	<u>2,321,886</u>	<u>N/A</u>	<u>2,321,886</u>
Total Residential Sq. Ft.	8,891,246	N/A	8,891,246
Residential Units	5,058	N/A	5,058
Avg Res. Sq. Ft./Acre	13,541.3	N/A	

## Calculation of Special Tax for Preserve Maintenance and Monitoring

	<u>Improvement Area A</u>	<u>Improvement Area B</u>	<u>Totals</u>
Net Residential Acreage-Otay	511.7	N/A	511.7
Net Residential Acreage-McMillin	144.9	N/A	144.9
Net Total Residential Acreage	<u>656.6</u>	<u>N/A</u>	<u>656.6</u>
 Avg. Residential SF/Acre			 13541.3
 Non-Resid Acreage-Otay	 10.6	 N/A	 10.6
Non-Resid Acreage-McMillin	7.7	N/A	7.7
Total Non-Resid. Acreage	<u>18.3</u>	<u>N/A</u>	<u>18.3</u>
 Equivalent Non-Residential SF	 247,806	 N/A	 247,806
 Total Taxable Bldg Sq. Ft	 9,139,052	 N/A	 9,139,052
Total Taxable Bldg Sq. Ft @ 85%	7,768,194	N/A	7,768,194
 <b>Tax Rate for Maintenance</b>			
Tax Rate/Sq. Ft.-Residential	\$0.0078	N/A	
Tax Rate/Acre-NonResidential or Final Map	\$128.53	N/A	
Tax Rate/Acre-Vacant	\$81.30	N/A	
 <b>Tax Rate for Monitoring</b>			
Tax Rate/Sq. Ft.-Residential	\$0.0049	N/A	
Tax Rate/Acre-NonResidential or Final Map	\$80.96	N/A	
Tax Rate/Acre-Vacant	\$51.21	\$51.21	

## Calculation of Special Tax for Preserve Maintenance and Monitoring

	<u>Improvement Area A</u>	<u>Improvement Area B</u>	<u>Totals</u>
Total Developable Gross Acreage	1,060.56	2,077.45	3,138.01
Develop. Acreage Impr. Area A as % of total	34%	66%	100%
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