FIRE PROTECTION PLAN
TPM 21104 – Vidovich Minor Subdivision
KIVA 07-0087423

Prepared by:

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and

County of San Diego

SDC DPLU RCVD 12-23-11
TPM21104

EXECUTIVE SUMMARY

This Fire Protection Plan (FPP) has been prepared for TPM 21104, Vidovich Minor Subdivision. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions, and fire history. The proposed project is located within the San Diego Rural Fire Protection District. The Fire Protection Plan for the Vidovich Minor Subdivision is subject to the review and approval of the San Diego Rural Fire Protection District and the County of San Diego.

The proposed project is a minor subdivision and residential development of approximately 5.43 gross acres into 4 single-family homes, with lot sizes ranging from 1.05 to 2.01 gross acres. The proposed project is located within the Community of Jamul within unincorporated San Diego County. The project is located at 3259 Heide Lane, approximately 300 feet north of Olive Vista Dr. and 1.2 miles east of the intersection of Olive Vista Drive and Lyons Valley Road. The project will be served by a private road connecting to Olive Vista. Additionally, Olive Vista Road, from the intersection with Heidi Lane east to the intersection with Jamul Highlands will be constructed to public road standards in order to comply with allowable dead-end road length. The project is located within the San Diego Rural Fire Protection District and a State Responsibility Area as mapped by the CalFire. The project is located within the Otay Water District.

The project is designed in conformance and meets or exceeds all applicable codes and standards. The project will not expose people or structures to a significant risk of loss, injury, or death as a result of wildland fires. The project will not will not have a substantial adverse impact to services including response time that would result in physical impacts with environmental effects. The project has adequate emergency access. The project will have sufficient water supplies available to serve the project from existing entitlements. As a result there are no significant impacts pursuant to CEQA.

1.0 INTRODUCTION

This Fire Protection Plan (FPP) has been prepared for the Vidovich Minor Subdivision. The proposed project is a minor subdivision and residential development of approximately 5.43 gross acres into 4 single-family homes, with lot sizes ranging from 1.05 to 2.01 gross acres (APN 596-152-49). The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions, and fire history. The plan addresses water supply, access (including secondary/emergency access where applicable), structural ignitability and fire resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect one or more-at-risk communities and essential infrastructures. The plan recommends measures that property owners will take to reduce the probability of ignition of structures throughout the area addressed by the plan.

The proposed project is located within the San Diego Rural Fire Protection District. The Fire Protection Plan for the Vidovich Minor Subdivision is subject to the review and approval of the San Diego Rural Fire Protection District and the County of San Diego. The Fire Service Availability Letter is included as Appendix A.

1.1 Project Location, Description and Environmental Setting

1.1.1 Project Location

The proposed project is located within the Community of Jamul within unincorporated San Diego County (Figure 1). The project is located at 3259 Heide Lane, approximately 300 feet north of Olive Vista Dr. and 1.2 miles east of the intersection of Olive Vista Drive and Lyons Valley Road (Figure 2). The project is located within the San Diego Rural Fire Protection District and a State Responsibility Area as mapped by the CalFire (Figure 3). The project is located within the Otay Water District.

1.1.2 Project Description

The proposed project is a minor subdivision and residential development of approximately 5.43 gross acres into 4 single-family homes, with lot sizes ranging from 1.05 to 2.01 acres (Figure 4). The project will be served by a private road connecting to Olive Vista. Olive Vista Road will be improved to public road standards from the intersection with Heidi Lane to the intersection with Jamul Highlands Road.

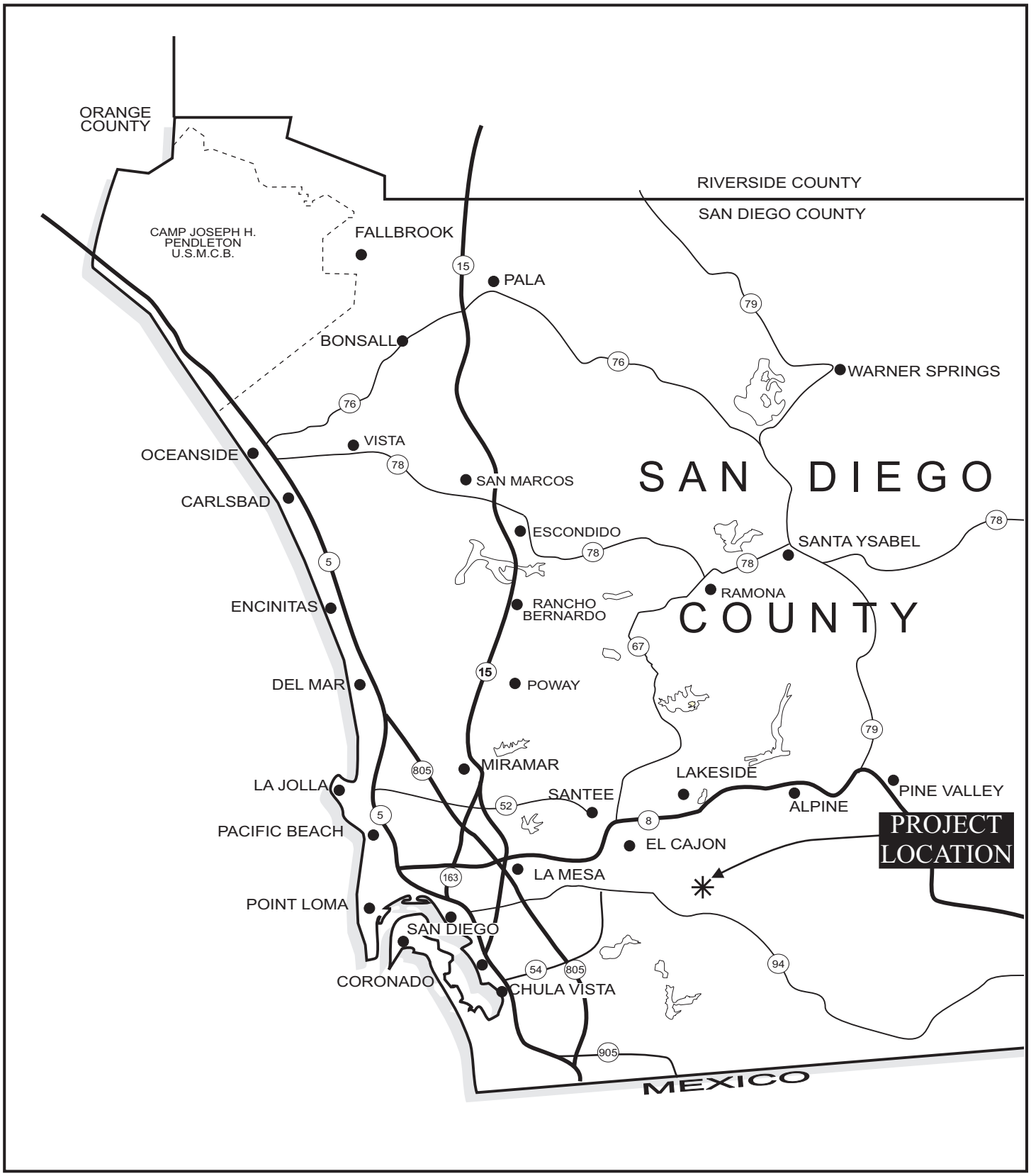
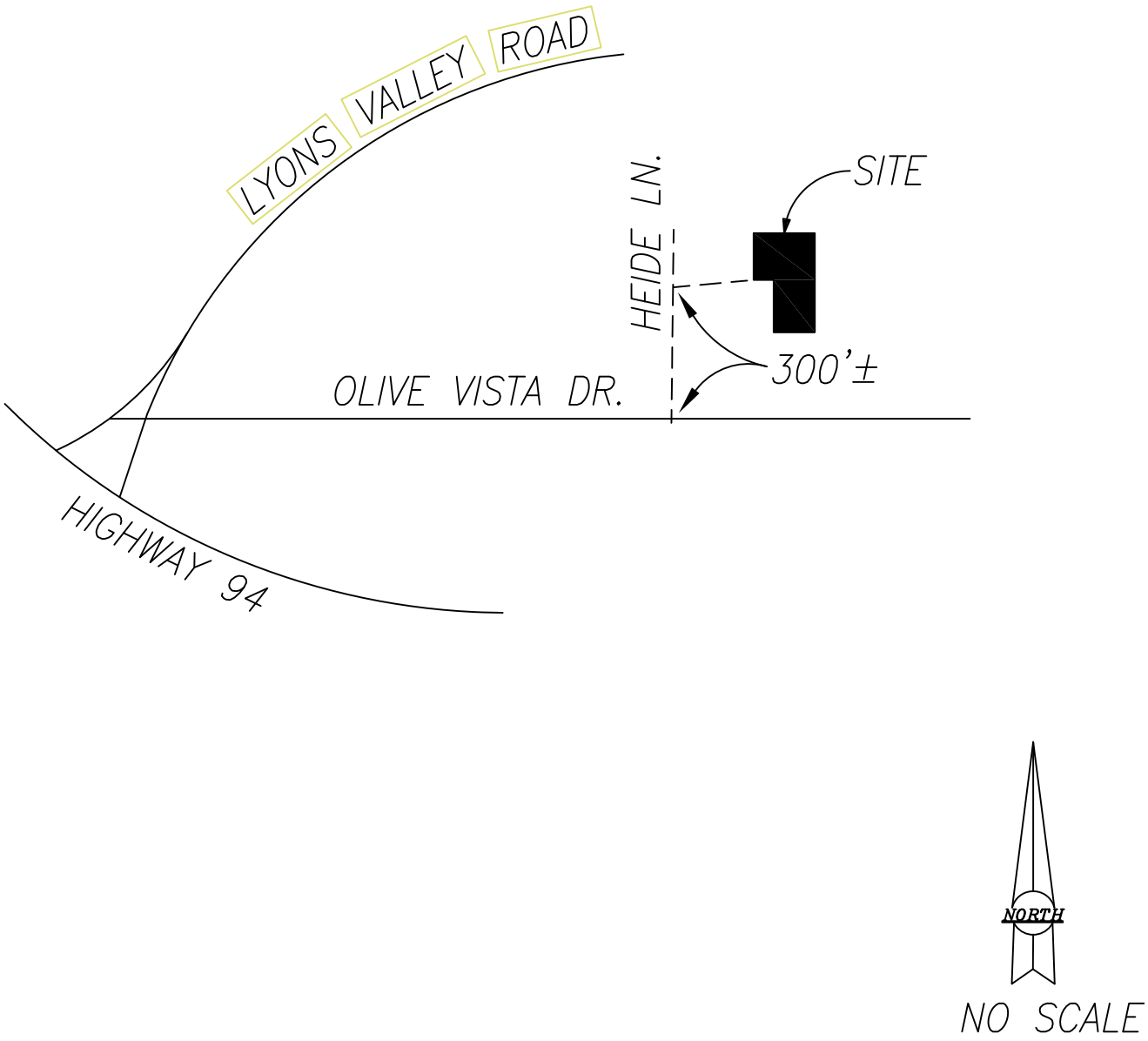
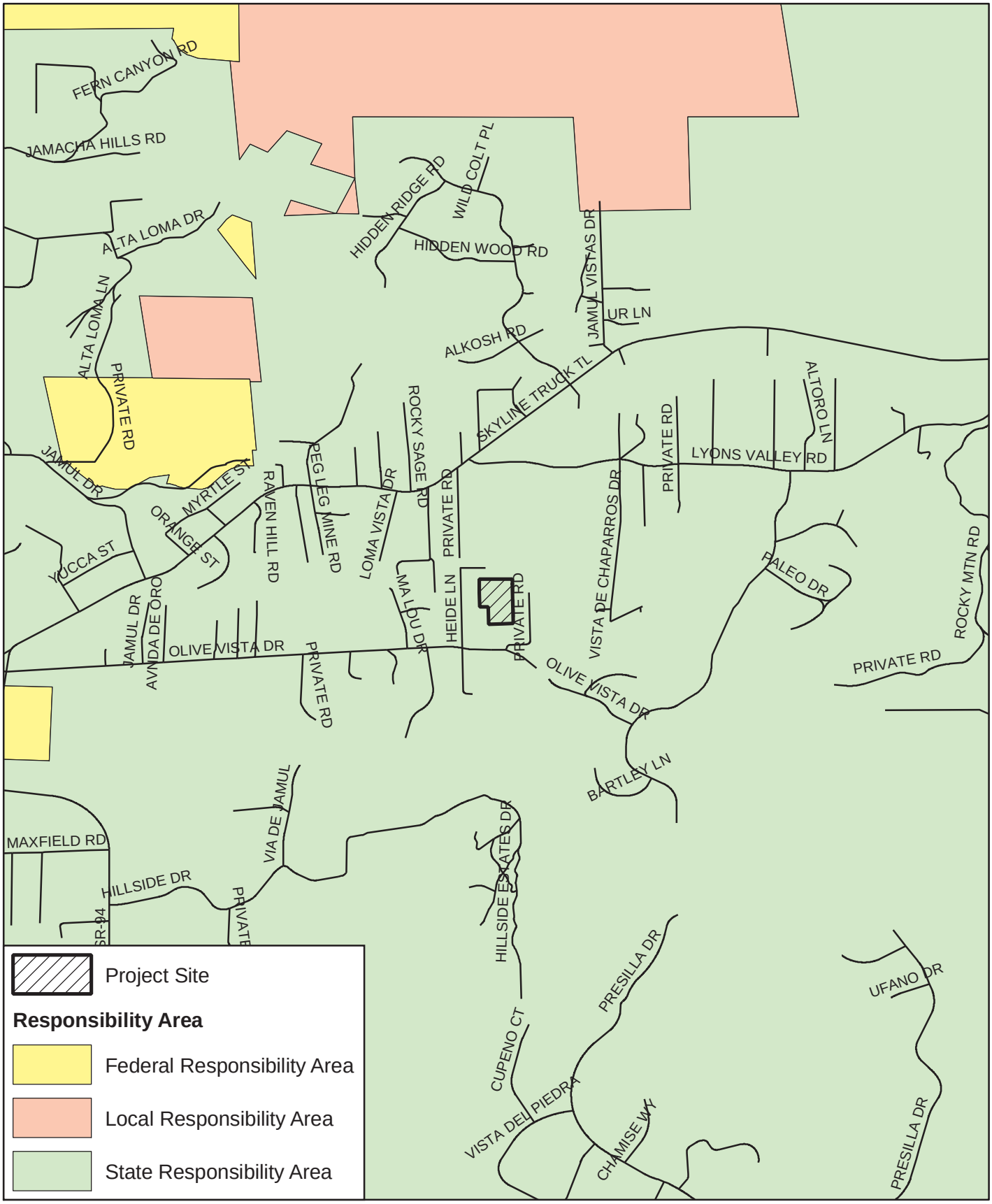


Figure 1
Regional Location Map



RC Biological Consulting, Inc.	Vicinity Map	Figure 2



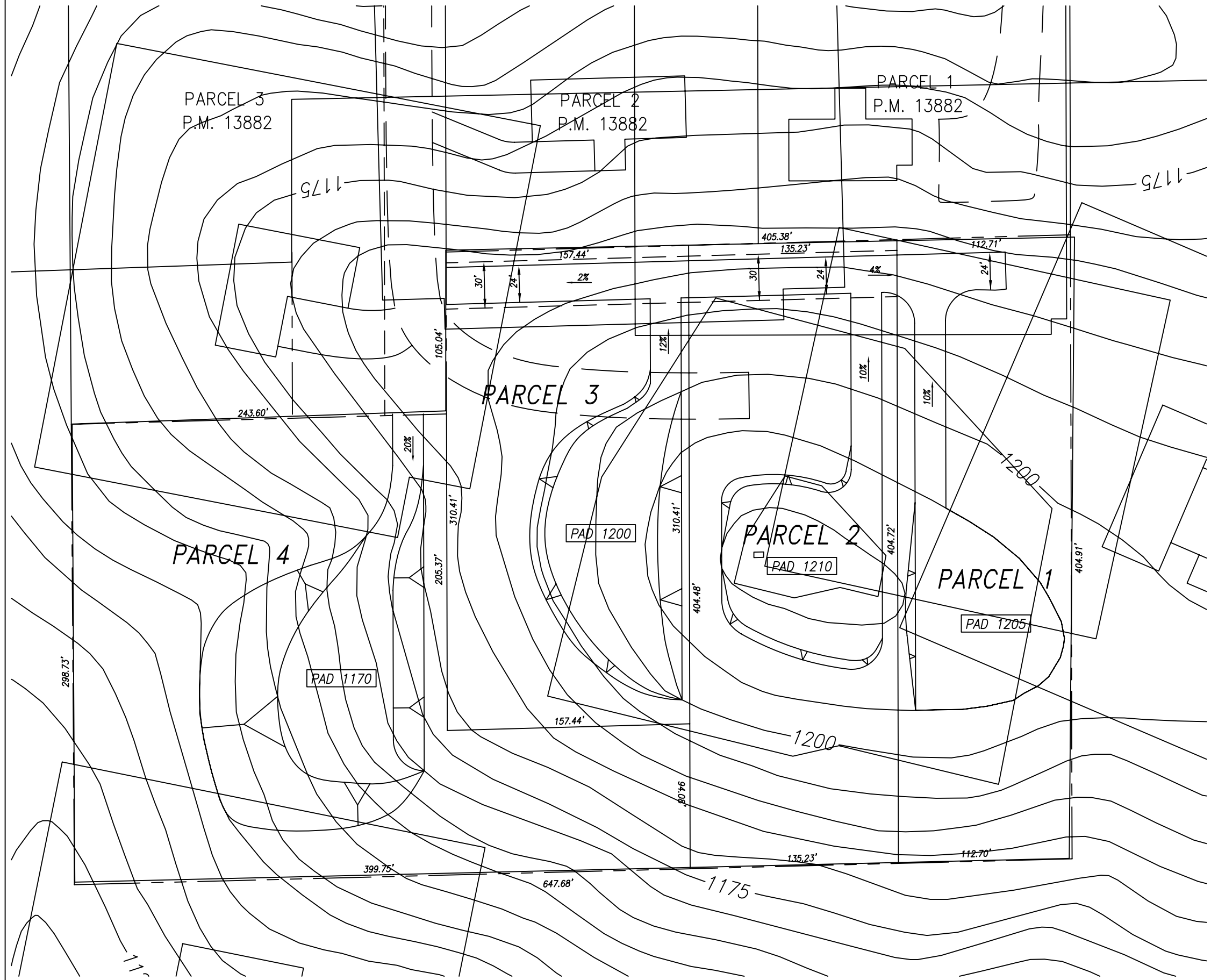
Source: http://frap.cdf.ca.gov/

Figure 3
Responsibility Area

N

Feet
0 1,000 2,000

PRELIMINARY GRADING PLAN

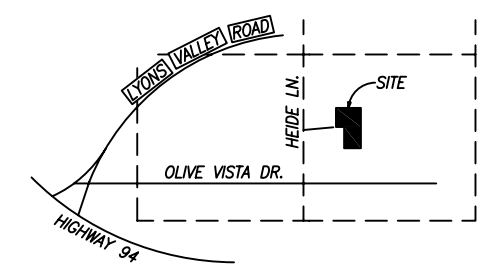


LEGEND

570	EXISTING CONTOUR
×570.0	EXISTING SPOT ELEVATION
	EXISTING STRUCTURE TO REMAIN
	EXISTING ROAD
	EXISTING EASEMENT
	SUBDIVISION BOUNDARY
	PROPOSED LOT LINE
	PROPOSED EASEMENT LINE
	PROPOSED SLOPE (2:1 TYPICAL)
PAD 1200	PROPOSED PAD ELEVATION

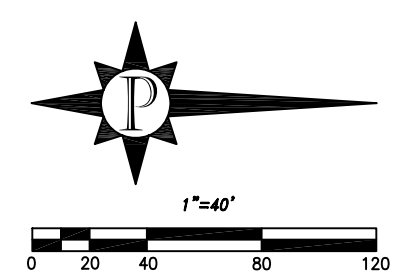
LEGAL DESCRIPTION

PARCEL 4 OF PARCEL MAP NO. 13882, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED ON JULY 26, 1985 AS FILE NO. 85-266853.



VICINITY MAP

NO SCALE



ENGINEER OF WORK

POLARIS DEVELOPMENT CONSULTANTS, INC.
124 W. MAIN STREET, SUITE 241
EL CAJON, CA 92020
PHONE: (619) 444-2923
JOEL A. WAYMIRE, R.C.E. 56258 DATE
EXPIRES ON 12/31/08

Figure 4

1.1.3 Environmental Setting

Land Use, Topography, Climate

The project site was visited to review the topography, vegetation and existing uses of the property. The site contains an existing single family residence, garage and other outbuildings, and some undeveloped land. The property is bordered by rural residential development on all sides (Figure 5).

The topography of the site is a knoll with slopes in all directions and ranging in steepness. The general topography of the area is composed of steep mountain slopes traversed by a valley (Figure 6). The existing residence is located on top of the knoll. Elevations onsite range from 1125 feet to 1210 feet above mean sea level (MSL).

The County is divided into five climate zones from the coast to the desert (Climates of San Diego County, Agricultural Relationships, University of California, Agricultural Extension Service, and U.S. Weather Bureau). These climate zones are determined by several factors: proximity to the ocean, terrain, elevation, and latitude. Using the Koppen system, the metropolitan areas of Southern California have a Mediterranean climate, characterized by mild, sometimes wet winters and warm, very dry summers. The Mediterranean climate includes all coastal areas, valleys and foothills. Annual precipitation amounts increase gradually from the coast to the mountain crests, then drop dramatically into the deserts. Most precipitation comes from winter storms between November and March. The site is located within the transitional climate zone. Average rainfall is 18 inches per year (Western Regional Climate Center).

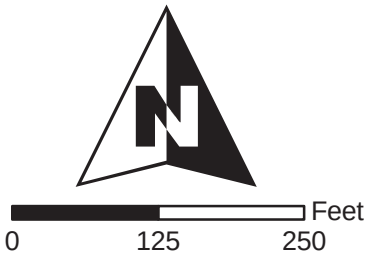
Vegetation, Fuel Loads, Fire History

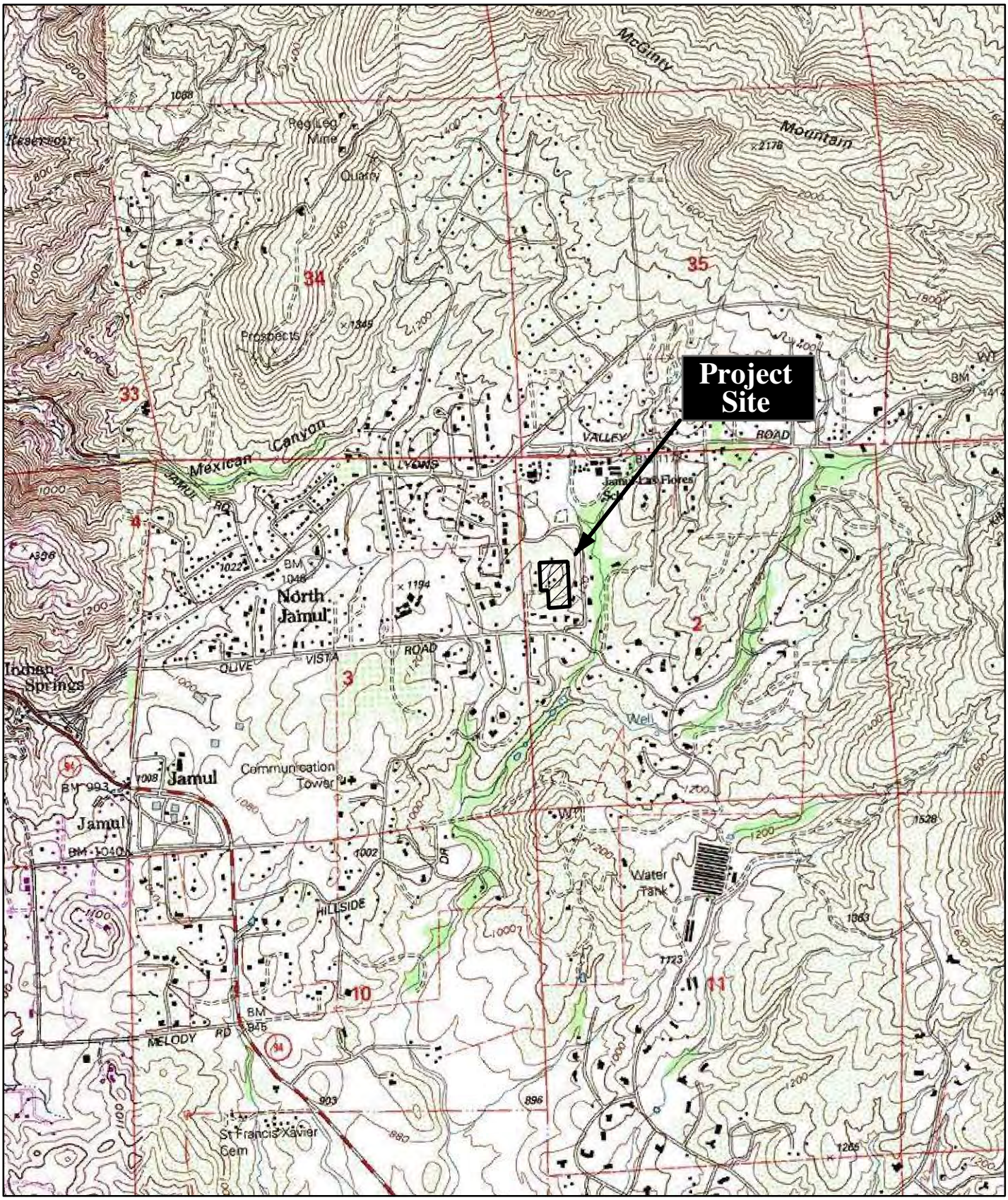
The existing vegetation onsite is composed of coastal sage scrub, non-native grassland and developed areas. The entire project is proposed to be developed. The fuel threat will be primarily from a small area of coastal sage scrub off-site in the northeast corner, large stand of eucalyptus trees to the north adjacent to an existing residence and the surrounding residences. The primary threat from the eucalyptus will be from flying embers.

The project site is mapped as being located within an area of low and moderate fuel threat as identified by CalFire (Figure7). The fire history of the site and surrounding area (approximately 3 mile radius) was reviewed (Figure 8). The source of the fire history information is CalFire FRAP date from 2007. The assessment includes most fires greater than 10 acres in size, however not all historic fires may be documented. A total of nine documented fires have burned in the project site area between the years 1910 and 2007, with the 1926 fire and the 1970 Laguna Fire burning the actual site and much of the surrounding area. To date, the most recent large fire in the area although more then 1.5 miles from the site, was the 2007 Harris Fire.

Source:Terraserver.com (4/1/2007)

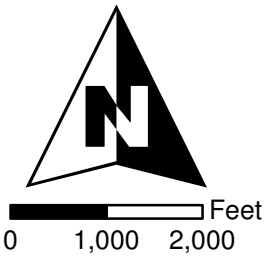
Figure 5
Aerial Map

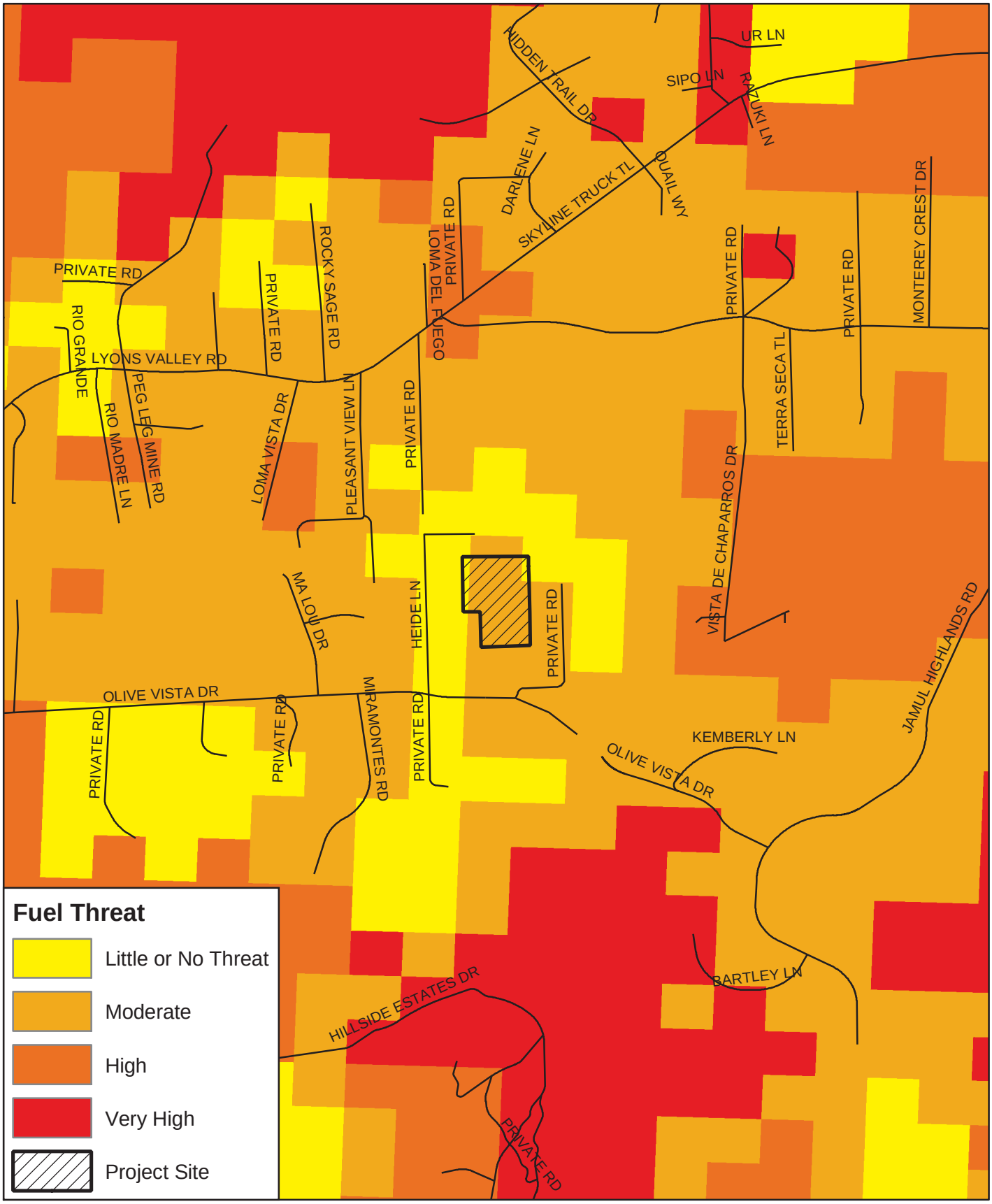




Source: USGS 7.5' Dulzura Quadrangle

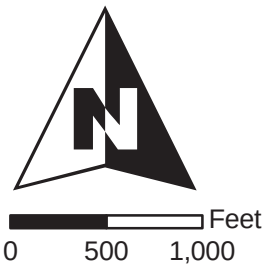
Figure 6
USGS Map
Vidovich Property

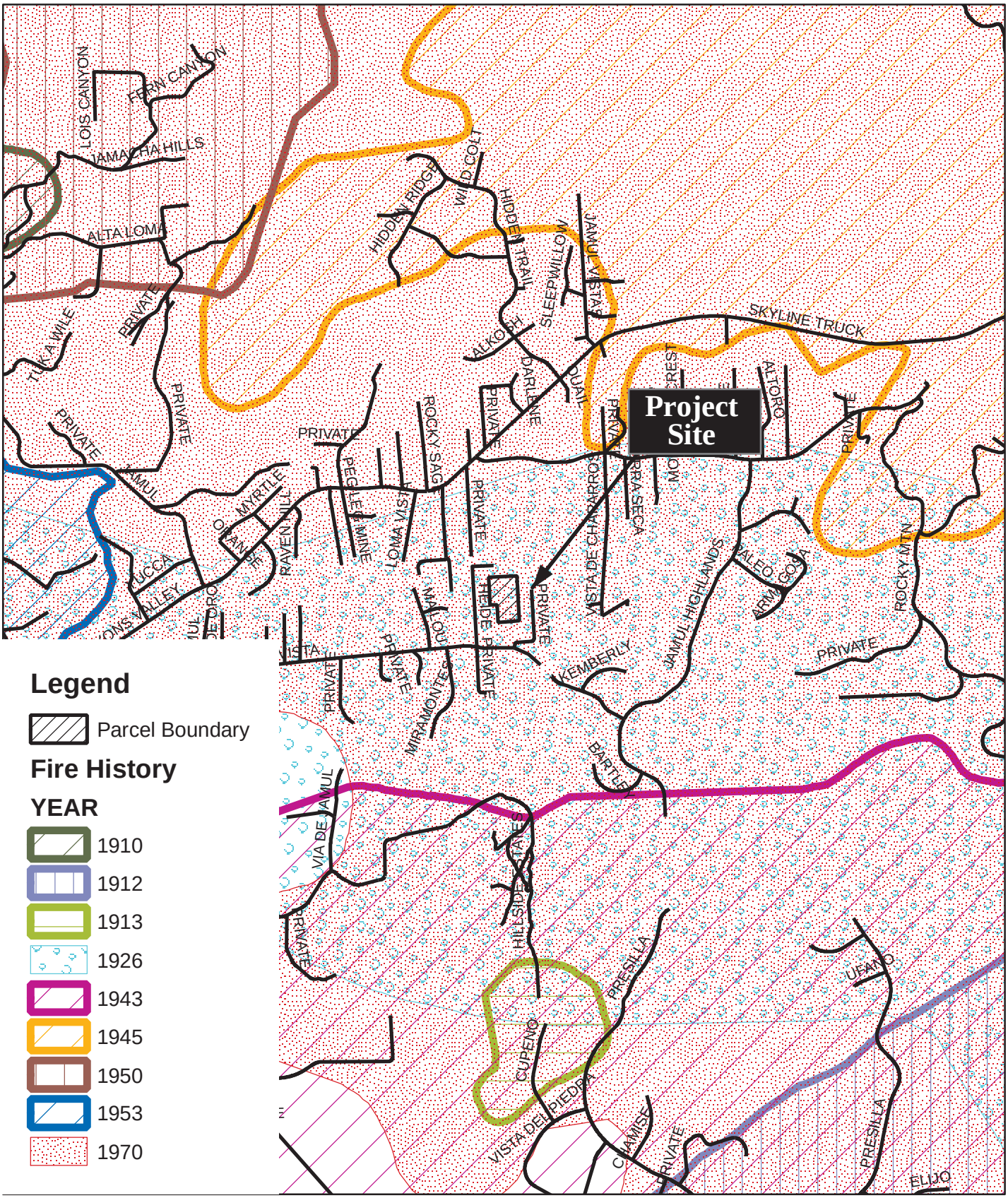




Source: http://frap.cdf.ca.gov/

Figure 7
Fire Threat Map





Source: CalFire FRAP Data

Figure 8
Fire History

Feet
0 1,000 2,000

Photograph 1. Off –Site Fuels

2.0 ANALYSIS OF PROJECT EFFECTS

2.1 Adequate Emergency Services

The project is located within the jurisdiction of the San Diego Rural Fire Protection District. The District has provided a Fire Service Availability letter stating that there are adequate services for this project (Appendix A). At the time the nearest fire station was located at 14145 Highway 94, Jamul. The fire station is located approximately 2 3/4 miles from the project. The estimated travel time from the Fire Service Availability Letter is 5 minutes. Since the 399F was obtained a new fire station is being built at 14025 Peaceful Valley Road, Jamul. The new location is across the street from the previous location so the travel time is anticipated to be the same. The new station should be completed in November of 2009 (pers. comm. with San Diego Rural Fire Protection Staff). The travel time is in compliance with the Public Facilities Element of the San Diego County General Plan which requires a travel time of 5 minutes or less for parcels zoned for less than 2 acres (County 1979).

2.2 Primary and Secondary Access

The primary access for the project will be a private road that connects to Heide Lane. The private road shall conform to DPW standards for private roads. The project is proposing a road paved to 24 feet with a hammer head at the terminus on proposed Parcel 1. The access road and driveways are all less than 15% slope.

The cumulative dead end length for the project from the project to the intersection of Olive Vista Road and Jefferson Road is approximately 1 mile. As a result the project is required to have secondary access. Once the improvements to Olive Vista Lane are completed, the maximum dead-end road length to the hammer head at the terminus on proposed Parcel 1 will be approximately 1,150 feet. The improvements to Olive Vista Lane must meet the following

criteria prior to final map approval based on the County of San Diego comment letter dated March, 16, 2010:

Intent: In order to promote orderly development necessary for public health and safety of the area, and to comply with the County of San Diego Subdivision Ordinance sections 81.706 through 81.707 and the County Consolidated Fire Code, Appendix Chapter 1, Section 104.8, road improvements shall be required.

Description of requirement: Olive Vista Road shall be improved to become a through road that meets public road standards. The subdivider shall petition to have any necessary Irrevocable Offers of Dedication (lODs) accepted by the County of San Diego and shall improve to public road standards those segments of this road that do not meet such road standards at the time of Tentative Map Approval These road standards include, but are not limited to, a graded width of forty (40) feet from centerline with twenty-eight (28) feet of asphalt concrete pavement over approved base.

Documentation: Improvement plans and an engineer's cost estimate for the improvement of the segments of Olive Vista Road subject to this condition of approval shall be submitted to the County for review and approval. The subdivider shall also file a written request with the County for acceptance of all IODs necessary to allow the completion of required improvements. Should the subdivider choose to construct the improvements prior to map recordation, a Financial Assurance shall be required to be posted with the County consistent with the approved cost estimate. If the subdivider chooses to defer the installation of improvements to after recordation, the subdivider shall enter into a secured agreement with the County in accordance with Sections 81.706 through 81.707 of the County Subdivision Ordinance.

Timing: Prior to recordation of the parcel map:

1. The road improvement plans shall be submitted to, and approved by, the County of San Diego, and;
2. All necessary IODs shall have been accepted and;
3. The improvements shall be constructed in accordance with the approved plans, or; the construction of improvements shall be assured through the execution of a secured agreement.

Monitoring: County staff shall review the submitted road improvement plans and cost estimate for adequacy and consistency with County Standards. Upon approval of the plans and cost estimate, County staff shall review any proposed Financial Assurance or Secured Agreement for consistency with the approved plans, the approved cost estimate, and County standards. All financial assurance instruments and improvement agreements are subject to review and approval by the Director Of DPW.

2.3 Water

The project site is located within the Otay Water District. Otay Water District has provided a Project Facility Availability form stating that adequate services are available (Appendix B). Hydrants shall be installed every 350 feet as required in the Project Conditions letter provided by the San Diego Rural Fire Protection District. Due to the project being located within a

hazardous fire area the main capacity for the project shall be 2500 gallons per minute at 20psi in conformance with the County of San Diego Consolidated Fire Code and the District Fire Code.

The design of the water supply system shall be reviewed and approved by the District prior to installation. The water supply system shall be installed prior to bring flammable building materials onsite.

2.4 Ignition Resistant Construction and Fire Protection Systems

The Vidovich Minor Subdivision will be required to utilize enhanced fire resistive construction. Building construction requirements are specified in Chapter 7a of the County of San Diego Building Code. Construction shall meet or exceed these requirements. The project shall install life safety sprinklers in conformance with the requirements of the District and the County Building Code.

2.5 Defensible Space and Vegetation Management

2.5.1 Vegetation

As discussed in Section 1.1.3 the entire site is proposed for development. The primary fuel threat will be from the small area of coastal sage scrub offsite to the north east and a dense stand of eucalyptus trees to the north. The remainder of the site is surrounded by rural development which is required to implement 100 feet of fuel management around their structures. The photographs in the same section illustrate the fuel loading of this habitat.

2.5.2 Fuel Modeling

Several factors were taken into consideration when determining the fuel management zones including topography, degree of exposure, parcel size, and proximity to biological open space. Fire modeling was performed using Behave Plus 3.0.2 for three types of weather conditions, a Santa Ana weather condition, a peak weather condition and a summer weather condition. Weather data for the Santa Ana, peak and summer conditions were determined by the Standard Weather Parameters for the Transitional Zone from the County of San Diego Guidelines For Determining Significance and Report Format and Content Requirements for Wildland Fire and Fire Protection (County 2008). The project site is located within the transitional weather zone. Figure 9 illustrates the general topography of the area and the wind direction for Santa Ana/Peak conditions and for summer weather conditions.

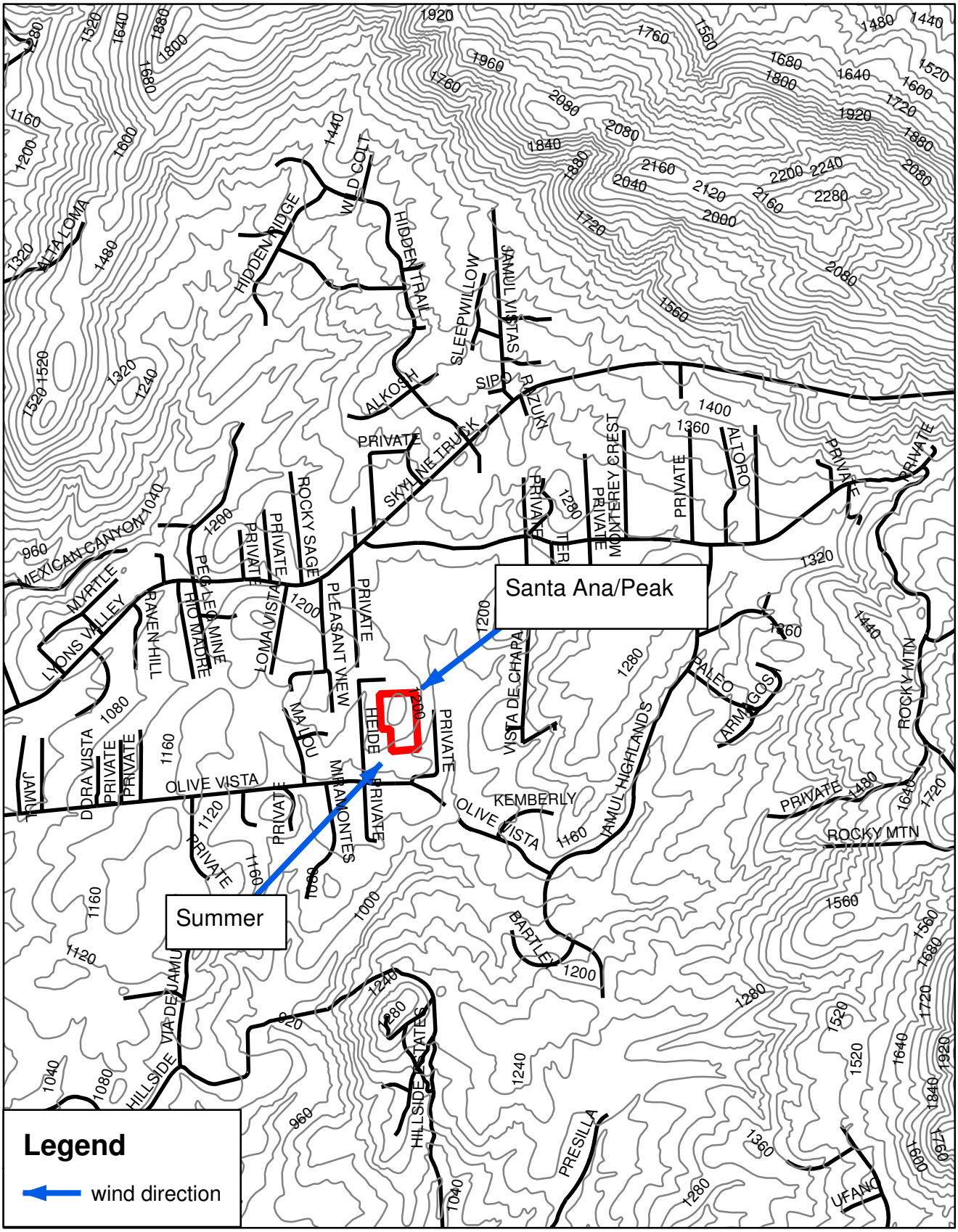
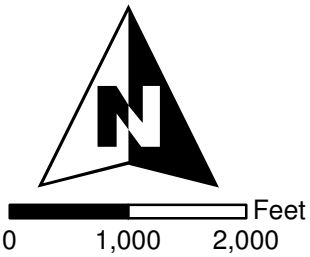


Figure 9
Topography and Wind Direction



2.5.2.1 Santa Ana Condition

A Santa Ana weather condition is potentially the worst weather for fire. Santa Ana's typically occur from September to May. The fall Santa Ana can create extremely dangerous fire conditions because they are associated with high temperatures, high winds coming from the north/northeast and low humidity. They also occur after long periods of no rain when the vegetation is in a drought stress condition. The soft shrubs that compose habitats such as coastal sage scrub are semi-drought deciduous and have typically lost the majority of their foliage by the end of summer.

Fire Behavior

Santa Ana winds result in a wind driven fire. These winds typically come from the northeast. Santa Ana winds are Foehn winds which are warm dry winds that result from air spilling over high elevations and moving downhill. These are gravity winds that typically follow the ground. When gravity winds hit an obstacle they can either split around the obstacle and continue or follow the object to the top and then launch over the top resulting in an area behind the obstacle with normal wind conditions.

McGinty Mountain, a northwest/southeast trending ridgeline occurs approximately 6000 feet to the northeast of the project (Figure 9). This ridgeline may serve as a barrier causing the fire to split around it.

2.5.2.2 Peak Conditions

Peak conditions are the extreme conditions during a Santa Ana event. The peak winds represent the gusts that occur during a Santa Ana.

Fire Behavior

The fire behavior would be essentially the same as during a Santa Ana, however the gusts could significantly increase the rate of spread and the distance that fire brands travel during the time that they are occurring.

2.5.2.3 Summer Weather Condition

Summer weather conditions consist of an onshore flow from the southwest. This condition has a lower temperature and higher humidity than does a Santa Ana condition.

Fire Behavior

A fire under summer conditions is typically a fuel driven fire, however wind will also contribute to the rate of spread. A fire that started offsite to the south would also be influenced by topography with a northeast trending canyon leading towards the project. However the project is surrounded by rural residential not large open areas of undeveloped habitat.

2.5.2.4 Fuel Model Results

Table 1, identifies the weather inputs for each of the conditions: Santa Ana, peak and summer.

Table 1 Weather Inputs for the Transitional Zone			
Period	**Temperature (Fahrenheit)**	**Relative Humidity**	**Sustained Wind Speed (mph)**
Santa Ana	109°	5-9%	28
Peak	109°	5-9%	41
Summer	109°	10-14%	19

Modeling was performed for coastal sage scrub adjacent to the proposed development. Table 2 identifies the habitat and fuel model used to represent the habitat. Although the eucalyptus grove to the north also poses a threat, the threat from the eucalyptus greater from flying embers than from the flames.

Table 2 Habitat and Fuel Model		
Habitat	**Fuel Model**	**Description***
Coastal Sage Scrub	SCAL18	This fuel model has been developed for a common southern California habitat, coastal sage scrub. This is a conservative model for the offsite habitat because the shrub cover is only approximately 50% which is less dense then the typical coastal sage scrub.

* The complete model parameters are included as Appendix C.

The full results of the modeling are included in Appendix D and discussed below for each weather period. Table 3 provides the results for all of the weather conditions.

Table 3 Results for Coastal Sage Scrub			
	Santa Ana	**Peak**	**Summer**
Flame Length	26’	30’	19’
Rate of Spread	98 ch/h	138 ch/h	57 ch/h

As can be seen from the modeling, the greatest anticipated flame length is from a Peak Santa Ana fire. The resulting flame length is 30 feet. The model is an estimate of the flame lengths that can be anticipated. Actual fire behavior can be more or less intensive.

2.5.3 Fuel Management

The San Diego County Consolidated Fire Code and the San Diego Rural Fire District Code require management of flammable vegetation within 100 feet of structures. The purpose of this zone is to provide the necessary defensible space for fire suppression and to reduce the radiant heat and convective heat that would result from a fire. The project will provide a minimum of 100 feet of fuel management adjacent to the proposed building areas within the pads when they are adjacent to undeveloped lands. Some structures exist offsite less than 100 feet from the proposed lots and require fuel management. Where existing development occurs adjacent to the proposed pads off site the fuel management will be extending to the property line with the balance of the 100 feet overlapping the existing fuel management offsite. The fuel management zones are depicted on the Preliminary Grading Plan, Figure 10. The project is in compliance with the County Consolidated Fire Code and San Diego Rural Fire Code for fuel management.

2.5.3.1 Zones

Developable Area

This is the area in which habitable structures may be built. This area is to be maintained the same as Zone 1, below.

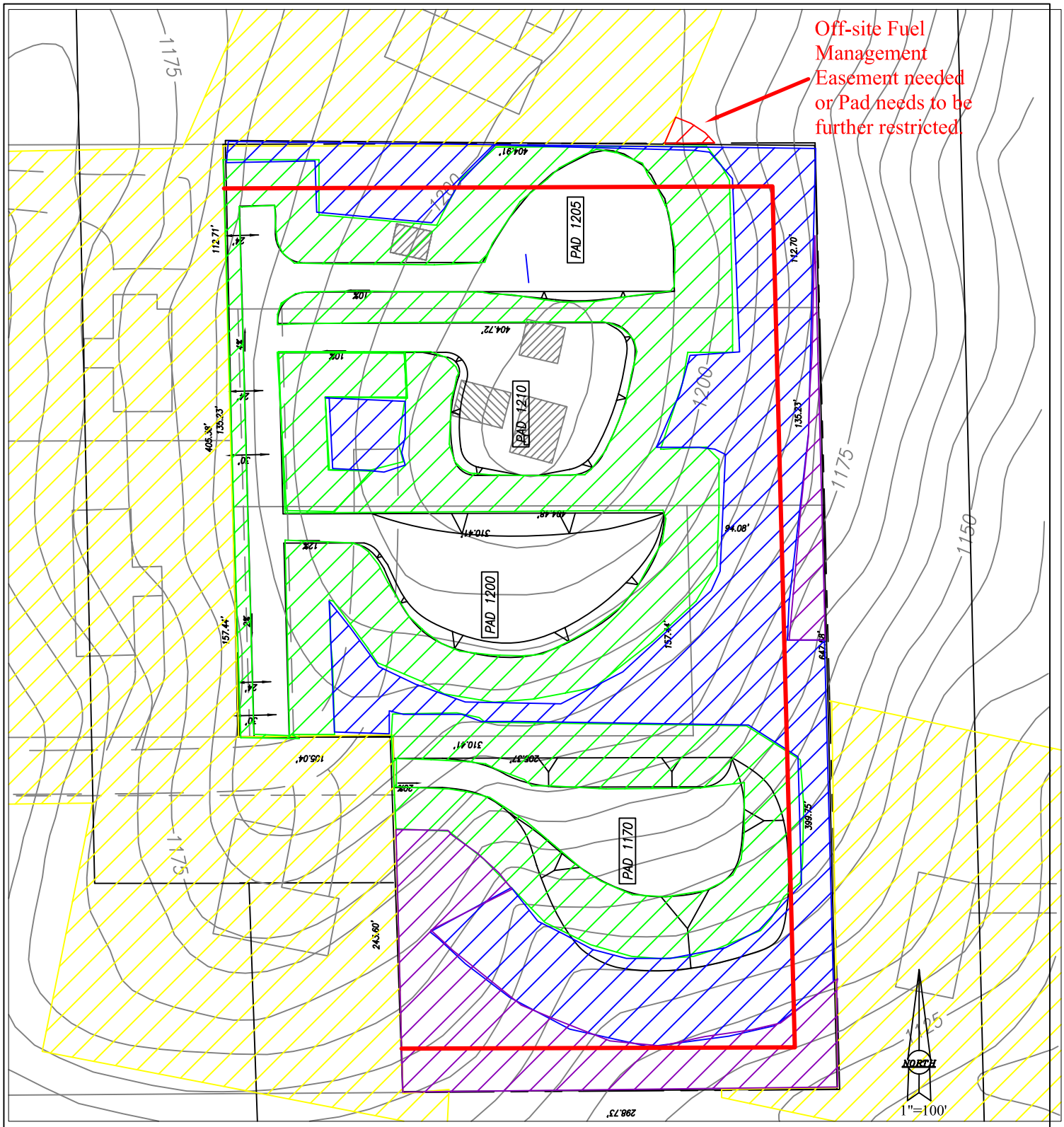
Zone 1

Zone 1 is the first 50' adjacent to the buildable area on the parcel and 30 feet along roadways. This area will be composed of landscaped low fuel plants and/or hardscape. Fuel management within this zone shall consist of landscape plantings that are maintained so that they will not create fire hazards near structures.

All of the plants in this zone must be listed on the County of San Diego's approved plant list or other list acceptable to the Fire Authority having jurisdiction. "Acceptable Plants for Defensible Space in Fire Prone Areas" is included as Appendix E. No plants on the Undesirable Plant List or Invasive Species Plant List shall be planted within this zone or any zone. These lists are included within Appendix F.

Zone 2

Zone 2 is the next 50' of required fuel management. This zone may be maintained the same as Zone 1 or as described here. Native vegetation may occur within this zone provided that it is thinned to ensure that the vegetation does not occupy more than 50% of the area. The thinning shall be performed such that the native vegetation retained is composed of small patches with spacing in between. Thinning shall prioritize the removal of the plants on the Undesirable Plant list. Some native shrubs such as manzanita can be pruned and thinned to reduce fuel load and be aesthetically pleasing.



Zone 1 - 50' from pad and 30' from roads

Zone 2 - 50' to 100' from pad or to deveoped areas

Remainder of Parcel Outside of Fuel Modification Zone

Existing Off-Site Fuel Modification

Limited Building Zone (LBZ) to provide 30' Setback

Area needed to provide 100' of fuel management from pad

RC Biological Consulting, Inc.	Fuel Management Zones TPM 21104	Figure 10

Maintenance

Zone 1

- Conduct annual or more frequent if necessary maintenance to reduce fuel volumes, remove dead and detached material, and maintain in healthy succulent condition;
- Maintain irrigation in a working condition;
- Mature trees greater than 18' shall be limbed up to a minimum of 6' above the ground;
- No tree limbs within 10' of chimneys or dead limbs overhanging structures;
- Trees adjacent to or overhanging roadways, driveways, or other emergency access paths shall be maintained with a minimum height clearance of 13' 6".

Zone 2 and 3

- Conduct annual or more frequent if necessary maintenance to reduce fuel volumes, remove dead and detached material, and maintain in healthy succulent condition;
- Annually – Remove plants on the invasive plant list that may have become established.

Vegetation maintenance shall be the responsibility of the owner as designated with the County Tax Assessor.

2.6 Cumulative Impact Analysis

The project is in complete compliance with all codes and standards therefore will not contribute to a significantly cumulative impact to fire services. The project will conform to secondary access requirements as a result of the County building the connect from the north end of Heide Lane to Lyons Valley Road.

3.0 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

The project has been designed in conformance with all codes and regulations. The project has been designed to include a minimum of a 100 ft fuel management zone next where pads are proposed next to undeveloped lands.

The project will be required to utilize construction methods for exterior wildfire exposure as defined in Chapter 7a of the County of San Diego Building Code (County 2008).

The mitigation measures can not ensure that structures will not be lost during as a result of a wildland fire however they reduce the risk associated with building within the wildland-urban interface.

4.0 CONCLUSION

The project is designed in conformance and meets or exceeds all applicable codes and standards. The project will not expose people or structures to a significant risk of loss, injury, or death as a result of wildland fires. The project will not will not have a substantial adverse impact to services including response time that would result in physical impacts with environmental effects. The project will have adequate emergency access when the County builds the connection. The project will have sufficient water supplies available to serve the project from the Otay Water District. As a result there are no significant impacts pursuant to CEQA.

5.0 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

Preparers

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Persons and Organizations Contacted

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Joel Waymire, Polaris Development Consultants, (619) 444-2923
San Diego Rural Fire Protection District (619) 669-1188

6.0 REFERENCES CITED OR CONSULTED

San Diego Rural Fire Protection District. Fire Code – Ordinance 2002-03

California Building Code 2007. Chapter 7A.

California Fire Code 2007. California Code of Regulations Title 24, Part 9.

County of San Diego 1979. General Plan – Safety Element.

County of San Diego 1999. Standards for Private Roads. Department of Public Works. Adopted June 30, 1999.

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County of San Diego 2009. Consolidated Fire Code. Adopted June 2009.

County of San Diego. Acceptable Plants For A Defensible Space In Fire Prone Areas. http://www.co.san-diego.ca.us/cnty/cntydepts/landuse//fire_resistant.html

National Fire Protection Agency 2007. NFPA 13: Standard for the Installation of Sprinkler Systems.

Western Regional Climate Center. http://www.wrcc.dri.edu/

APPENDIX A

FIRE SERVICE AVAILABILITY LETTER

COUNTY OF SAN DIEGO
DEPT. OF PLANNING & LAND USE
5201 RUFFIN ROAD, SUITE B
SAN DIEGO, CA 92123-1666
(858) 565-5981 • (888) 267-8770

PROJECT FACILITY AVAILABILITY FORM

FIRE

F

Please type or use pen

AUGGIE VIDOVICH 619·390·1365
Owner's Name Phone

15786 MISS ELLIE LANE
Owner's Mailing Address Street

LAKESIDE, CA 92040
City State Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____ AMT $_____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A.
- [ ] Major Subdivision (TM)
- [x] Minor Subdivision (TPM)
- [ ] Boundary Adjustment
- [ ] Rezone (Reclassification) from_____to_____zone.
- [ ] Major Use Permit (MUP), purpose:_____
- [ ] Time Extension...Case No._____
- [ ] Expired Map...Case No._____
- [ ] Other_____
- [ ] Specific Plan or Specific Plan Amendment
- [ ] Certificate of Compliance:_____

B.
- [x] Residential ..... Total number of dwelling units 4
- [ ] Commercial ..... Gross floor area_____
- [ ] Industrial ..... Gross floor area_____
- [ ] Other ..... Gross floor area_____

C. Total Project acreage 5.4 Total lots 4 Smallest proposed lot 1.0AC

Assessor's Parcel Number(s)
(Add extra if necessary)

596	152	49

Thomas Bros. Page 1293 Grid A1

HEIDE LANE
Project address Street

JAMUL-DULZURA 91935
Community Planning Area/Subregion Zip

OWNER/APPLICANT AGREES TO COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: [signature] Date: 10/8/07

Address: 124 W. MAIN #241 EL CAJON, CA 92020 Phone: 619·444·2923 x316

(On completion of above, present to the district that provides fire protection to complete Section 2 and 3 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District name San Diego Rural Fire Protection District

Indicate the location and distance of the primary fire station that will serve the proposed project: Station 66
14145 Highway 94, Jamul, CA

A. [XX] Project is in the District and eligible for service.
- [ ] Project is not in the District but is within its Sphere of Influence boundary, owner must apply for annexation.
- [ ] Project is not in the District and not within its Sphere of Influence boundary.
- [ ] Project is not located entirely within the District and a potential boundary issue exists with the _____ District.

B. [XX] Based on the capacity and capability of the District's existing and planned facilities, fire protection facilities are currently adequate or will be adequate to serve the proposed project. The expected emergency travel time to the proposed project is 5 minutes.
- [ ] Fire protection facilities are not expected to be adequate to serve the proposed development within the next five years.

C. [ ] District conditions are attached. Number of sheets attached:_____
- [XX] District will submit conditions at a later date.

SECTION 3. FUELBREAK REQUIREMENTS

Note: The fuelbreak requirements prescribed by the fire district for the proposed project do not authorize any clearing prior to project approval by the Department of Planning and Land Use.

[XX] Within the proposed project 100 feet of clearing will be required around all structures.
[ ] The proposed project is located in a hazardous wildland fire area, and additional fuelbreak requirements may apply. Environmental mitigation requirements should be coordinated with the fire district to ensure that these requirements will not pose fire hazards.

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized signature	Print name and title	Phone	Date
[signature]	David Nissen, Chief	619 669-1188	10-17-07

On completion of Section 2 and 3 by the District, applicant is to submit this form with application to:
Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, Suite B, San Diego, CA 92123

APPENDIX B

WATER SERVICE AVAILIBILITY LETTER

COUNTY OF SAN DIEGO
DEPT. OF PLANNING & LAND USE
5201 RUFFIN ROAD, SUITE B
SAN DIEGO, CA 92123-1666
(858) 565-5981 • (888) 267-8770

PROJECT FACILITY AVAILABILITY FORM

WATER **W**

Please type or use pen

AUGGIE VIDOVICH 619.390.1365
Owner's Name Phone

15786 MISS ELLIE LANE
Owner's Mailing Address Street

LAKESIDE, CA 92040
City State Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____ AMT $_____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. ☐ Major Subdivision (TM) ☐ Specific Plan or Specific Plan Amendment
☒ Minor Subdivision (TPM) ☐ Certificate of Compliance:_____
☐ Boundary Adjustment
☐ Rezone (Reclassification) from_____ to _____ zone.
☐ Major Use Permit (MUP), purpose:_____
☐ Time Extension...Case No._____
☐ Expired Map...Case No._____
☐ Other_____

Assessor's Parcel Number(s)
(Add extra if necessary)

5	9	6	1	5	2	4	9	

B. ☒ Residential ..... Total number of dwelling units 4
☐ Commercial..... Gross floor area_____
☐ Industrial ..... Gross floor area_____
☐ Other ..... Gross floor area_____

Thomas Bros. Page 1293 Grid A1

HEIDE LANE
Project address Street

JAMUL-DULZURA 91935
Community Planning Area/Subregion Zip

C. ☐ Total Project acreage 5.4 Total number of lots 4

D. Is the project proposing the use of groundwater? ☐ Yes ☒ No
Is the project proposing the use of reclaimed water? ☐ Yes ☒ No

Owner/Applicant agrees to pay all necessary construction costs, dedicate all district required easements to extend service to the project and COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: [signature] Date: 10/8/07

Address: 124 W. MAIN ST. #241 EL CAJON, CA 92020 Phone: 619.444.2923 x 316

(On completion of above, present to the district that provides water protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: Otay Water District Service area ID-9

A. ☑ Project is in the district.
☐ Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the district and is not within its Sphere of Influence boundary.
☐ ~~The project is not located entirely within the district and a potential boundary issue exists with the District.~~

B. ☑ Facilities to serve the project ☑ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached_____. (Number of sheets)
☐ Project will not be served for the following reason(s):_____

C. ☐ District conditions are attached. Number of sheets attached:_____
☐ District has specific water reclamation conditions which are attached. Number of sheets attached:_____
☒ District will submit conditions at a later date.

D. ☐ How far will the pipeline(s) have to be extended to serve the project?_____

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized signature: [signature] Print name Tanya A. Romero.

Print title Permit Technician Phone (619) 670-2241 Date 10/10/07

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT
On completion of Section 2 by the district, applicant is to submit this form with application to:
Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, San Diego, CA 92123

APPENDIX C

FUEL PARAMETERS

Fuel Model SCAL18

Fuel Model Number	0
Fuel Model Name	SCAL18
Fuel Model Type	Static
Description	Sage / Buckwheat
1-h Fuel Load	5.5 tons/ac
10-h Fuel Load	0.8 tons/ac
100-h Fuel Load	0.1 tons/ac
Live Herbaceous Fuel Load	0.75 tons/ac
Live Woody Fuel Load	2.5 tons/ac
1-h Surface Area/Vol Ratio	640 ft2/ft3
Live Herbaceous Surface Area/Vol Ratio	1500 ft2/ft3
Live Woody Surface Area/Vol Ratio	640 ft2/ft3
Fuel Bed Depth	3 feet
Dead Fuel Moisture of Extinction	25 percent
Dead Fuel Heat Content	9200 Btu/lb
Live Fuel Heat Content	9200 Btu/lb

APPENDIX D

FUEL MODELING

Modules: SURFACE, SCORCH

Description		Vidovich CSS, Santa Ana

Fuel/Vegetation, Surface/Understory

Fuel Model		SCAL18

Fuel Moisture

Dead Fuel Moisture	%	5
Live Fuel Moisture	%	50

Weather

20-ft Wind Speed	mi/h	28
Wind Adjustment Factor		0.4
Wind Direction (from north)	deg	45
Air Temperature	oF	109

Terrain

Slope Steepness	%	14
Aspect (from north)	deg	0,45

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind and spread directions are degrees clockwise from north [SURFACE].

Wind direction is the direction from which the wind is blowing [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Direction of Maximum Spread (from north) (deg) [SURFACE]

Midflame Wind Speed (mi/h) [SURFACE]

Wind Adjustment Factor [SURFACE]

Wind/Slope/Spread Direction Diagram [SURFACE]

Fire Characteristics Chart [SURFACE]

Scorch Height (ft) [SCORCH]

(continued on next page)

Vidovich CSS, Santa Ana

Aspect deg	ROS (max) chn	Flame Length ft	Direction Max ROS deg	Midflame Wind Speed mph	Wind Adj Factor	Scorch Height ft
0	97.8	25.6	225	11.2	0.4	646
45	98.1	25.7	225	11.2	0.4	648

Modules: SURFACE, SCORCH

Description		Peak Santa Ana -Vidovich Property
Fuel/Vegetation, Surface/Understory		
Fuel Model		SCAL18
Fuel Moisture		
Dead Fuel Moisture	%	5
Live Fuel Moisture	%	50
Weather		
20-ft Wind Speed	mi/h	41
Wind Adjustment Factor		0.4
Wind Direction (from north)	deg	45
Air Temperature	oF	109
Terrain		
Slope Steepness	%	14
Aspect (from north)	deg	0, 45

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind and spread directions are degrees clockwise from north [SURFACE].

Wind direction is the direction from which the wind is blowing [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Direction of Maximum Spread (from north) (deg) [SURFACE]

Midflame Wind Speed (mi/h) [SURFACE]

Wind Adjustment Factor [SURFACE]

Wind/Slope/Spread Direction Diagram [SURFACE]

Fire Characteristics Chart [SURFACE]

Scorch Height (ft) [SCORCH]

(continued on next page)

Peak Santa Ana -Vidovich Property

Aspect deg	ROS (max) ch/h	Flame Length ft	Direction Max ROS deg	Midflame Wind Speed mph	Wind Adj Factor	Scorch Height ft
0	137.9	30.0	225	16.4	0.4	737
45	138.2	30.1	225	16.4	0.4	738

Modules: SURFACE, SCORCH

Description		Vidovich CSS, Summer

Fuel/Vegetation, Surface/Understory

Fuel Model		SCAL18

Fuel Moisture

Dead Fuel Moisture	%	10
Live Fuel Moisture	%	50

Weather

20-ft Wind Speed	mi/h	19
Wind Adjustment Factor		0.4
Wind Direction (from north)	deg	225
Air Temperature	oF	109

Terrain

Slope Steepness	%	11
Aspect (from north)	deg	180,225

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind and spread directions are degrees clockwise from north [SURFACE].

Wind direction is the direction from which the wind is blowing [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Direction of Maximum Spread (from north) (deg) [SURFACE]

Midflame Wind Speed (mi/h) [SURFACE]

Wind Adjustment Factor [SURFACE]

Wind/Slope/Spread Direction Diagram [SURFACE]

Fire Characteristics Chart [SURFACE]

Scorch Height (ft) [SCORCH]

(continued on next page)

Vidovich CSS, Summer

Aspect deg	ROS (max) ch/h	Flame Length ft	Direction Max ROS deg	Midflame Wind Speed mi/h	Wind Adj Factor	Scorch Height ft
180	56.9	18.8	45	7.6	0.4	426
225	57.0	18.8	45	7.6	0.4	427

APPENDIX E

COUNTY OF SAN DIEGO'S LIST OF ACCEPTABLE PLANTS

SUGGESTED PLANT LIST FOR A DEFENSIBLE SPACE

BOTANICAL NAME	COMMON NAME	Climate Zone
TREES		
Acer		
platanoides	Norway Maple	M
rubrum	Red Maple	M
saccharinum	Silver Maple	M
saccarum	Sugar Maple	M
macrophyllum	Big Leaf Maple	C/ (R)
Alnus rhombifolia	White Alder	C/I/M (R)
Arbutus		
unedo	Strawberry Tree	All zones
Archontophoenix		
cunninghamiana	King Palm	C
Arctostaphylos spp.**	Manzanita	C/I/D
Brahea		
armata	Blue Hesper Palm	C/D
edulis	Guadalupe Palm	C/D
Ceratonia siliqua	Carob	C/I/D
Cerdidium floridum	Blue Palo Verde	D
Cercis occidentalis**	Western Redbud	C/I/M
Cornus		
nuttallii	Mountain Dogwood	I/M
stolonifera	Redtwig Dogwood	I/M
Eriobotrya		C/I/D
japonica	Loquat	C
Erythrina caffra	Kaffirboom Coral Tree	I/M
Gingko biloba "Fairmount"	Fairmount Maidenhair Tree	I/D/M
Gleditisia triacanthos	Honey Locust	
Juglans		I
californica	California Walnut	C/I
hindsii	California Black Walnut	I/D/M
Lagerstroemia indica	Crape Myrtle	I
Ligustrum lucidum	Glossy Privet	C/I/M
Liquidambar styraciflua	Sweet Gum	I
Liriodendron tulipifera	Tulip Tree	
Lyonothamnus floribundus		C
ssp. Asplenifolius	Fernleaf Catalina Ironwood	C/I/D
Melaleuca spp.	Melaleuca	C/I
Parkinsonia aculeate	Mexican Palo Verde	
Pistacia	Chinese Pistache	
chinensis	Pistachio Nut	C/I/D

vera	Pistachio Nut	I
Pittosporum		
phillyraeoides	Willow Pittosporum	C/I/D
viridiflorum	Cape Pittosporum	C/I
Platanus		
acerifolia	London Plane Tree	All zones
racemosa**	California Sycamore	C/I/M
Populus		
alba	White Poplar	D/M
fremontii**	Western Cottonwood	I
trichocarpa	Black Cottonwood	I/M
Prunus		
xblireiana	Flowering Plum	M
caroliniana	Carolina Laurel Cherry	C
ilicifolia**	Hollyleaf Cherry	C
lyonii**	Catalina Cherry	C
serrulata 'Kwanzan'	Flowering Cherry	M
yedoensis 'Akebono'	Akebono Flowering Cherry	M
Quercus		
agrifolia**	Coast Live Oak	C/I
engelmannii	Engelmann Oak	I
** suber	Cork Oak	C/I/D
Rhus		
lancea**	African Sumac	C/I/D
Salix spp.**	Willow	All zones (R)
Tristania conferta	Brisbane Box	C/I
Ulmus		
parvifolia	Chinese Elm	I/D
pumila	Siberian Elm	C/M
Umbellularia californica**	California Bay Laurel	C/I

SHRUBS		
Agave	Century Plant	D
americana	Century Plant	D
deserti	Shawis Century Plant	D
shawi**		
Amorpha fruticosa**	False Indigobush	I
Arbutus		
menziesii**	Madrone	C/I
Arctostaphylos spp.**	Manzanita	C/I/D
Atriplex**		
canescens	Hoary Saltbush	I
lentiformis	Quail Saltbush	D
Carissa grandiflora	Natal Plum	C/I
Ceanothus spp.**	California Lilac	C/I/M
Cistus spp.	Rockrose	C/I/D
Cneoridium dumosum**	Bushrue	C
Comarostaphylis**		
diversifolia	Summer Holly	C
Convolvulus cneorum	Bush Morning Glory	C/I/M
Dalea		
orcuttii	Orcutt's Delea	D
spinosa**	Smoke Tree	I/D
Elaeagnus		
pungens	Silverberry	C/I/M
Encelia**		
californica	Coast Sunflower	C/I
farinose	White Brittlebush	D/I
Eriobotrya		
deflexa	Bronze Loquat	C/I
Eriophyllum		
confertiflorum**	Golden Yarrow	C/I
staechadifolium	Lizard Tail	C
Escallonia spp.	Escallonia	C/I
Feijoa sellowiana	Pineapple Guava	C/I/D
Fouqueria splendens	Ocotillo	D
Fremontodendron**		
californicum	Flannelbush	I/M
mexicanum	Southern Flannelbush	I
Galvezia		
juncea	Baja Bush-Snapdragon	C
speciosa	Island Bush-Snapdragon	C
Garrya		
elliptica	Coast Silktassel	C/I
flavescens**	Ashy Silktassel	I/M

Heteromeles arbutifolia**	Ashy Silktassel	I/M
Lantana spp.	Toyon	C/I/M
Lotus scoparius	Lantana	C/I/D
Mahonia spp.	Deerweed	C/I
	Barberry	C/I/M
Malacothamnus		
clementinus		
	San Clemente Island Bush Mallow	C
fasciculatus**		
	Mesa Bushmallow	C/I
Melaleuca spp.		
Mimulus spp.**	Melaleuca	C/I/D
Nolina	Monkeyflower	C/I (R)
parryi		
parryi ssp. wolfii	Parry's Nolina	I
Photinia spp.	Wolf's Bear Grass	D
Pittosporum	Photinia	All Zones
crassifolium		
rhombifolium		CI/I
tobira 'Wheeleri'	Queensland Pittosporum	C/I
undulatum	Wheeler's Dwarf	C/I/D
viridiflorum	Victorian Box	C/I
Plumbago auriculata	Cape Pittosporum	C/I
Prunus	Cape Plumbago	C/I/D
caroliniana		
ilicifolia**	Carolina Laurel Cherry	C
lyonii**	Hollyleaf Cherry	C
Puncia granatum	Catalina Cherry	C
Pyracantha spp.	Pomegranate	C/I/D
Quercus	Firethorn	All Zones
dumosa**		
Rhamus	Scrub Oak	C/I
alaternus		
californica**	Italian Blackthorn	C/I
Rhaphiolepis spp.	Coffeeberry	C/I/M
Rhus	Rhaphiolepis	C/I/D
integrifolia**		
laurina	Lemonade Berry	C/I
lentii	Laurel Sumac	C/I
ovata**	Pink-Flowering Sumac	C/D
trilobata**	Sugarbush	I/M
Ribes	squawbush	I
viburnifolium		
speciosum**	Evergreen Currant	C/I
Romneya coulteri	Fuschia-Flowering Gooseberry	C/I/D
Rosa	Matilija Poppy	I
californica**		
minutifolia		

Salvia spp.**	California Wild Rose	C/I
Sambucus spp.**	Baja California Wild Rose	C/I
Symphoricarpos mollis**	Sage	All Zones
Syringa vulgaris	Elderberry	C/I/M
Tecomaria capensis	Creeping Snowberry	C/I
Teucrium fruticans	Lilac	M
Toxicodendron**	Cape Honeysuckle	C/I/D
diversilobum	Bush Germander	C/I
Verbena		
lilacina	Poison Oak	I/M
Xylosma congestum		
Yucca**	Lilac Verbena	C
schidigera	Shiny Xylosma	C/I
whipplei		
	Mojave Yucca	D
	Foothill Yucca	I

GROUNDCOVERS		
Achillea**	Yarrow	All Zones
Aptenia cordifolia	Apteria	C
Arctostaphylos spp.**	Manzanita	C/I/D
Ceanothus spp.**	California Lilac	C/I/M
Cerastium tomentosum	Snow-in-Summer	All Zones
Coprosma kirkii	Creeping Coprosma	C/I/D
Cotoneaster spp.	Redberry	All Zones
Drosanthemum hispidum	Rosea Ice Plant	C/I
Dudleya		
brittonii	Brittonis Chalk Dudleya	C
pulverulenta**	Chalk Dudleya	C/I
virens	Island Live Fore-ever	C
Eschscholzia californica**	California Poppy	All Zones
Euonymus fortunei		
'Carrierei'	Glossy Winter Creeper	M
'Coloratus'	Purple-Leaf Winter Creeper	M
Ferocactus viridescens**	Coast Barrel Cactus	C
Gaillardia grandiflora	Blanket Flower	All Zones
Gazania spp.	Gazania	C/I
Helianthemum spp.**	Sunrose	All Zones
Lantana spp.	Lantana	C/I/D
Lasthenia		
californica**	Common Goldfields	I
glabrata	Coastal Goldfields	C
Lupinus spp.**	Lupine	C/I/M
Myoporum spp.	Myoporum	C/I
Pyracantha spp.	Firethorn	All zones
Rosmarinus officinalis	Rosemary	C/I/D
Santolina		
chamaecyparissus	Lavender Cotton	All Zones
virens	Santolina	All Zones
Trifolium fragariferum	O'Connor's Legume	C/I
Verbena		
rigida	Verbena	All Zones
Viguiera laciniata**	San Diego Sunflower	C/I
Vinca		
minor	Dwarf Periwinkle	M

VINES		
Antigonon leptopus	San Miguel Coral Vine	C/I
Distictis buccinatoria	Blood-Red Trumpet Vine	C/I/D
Keckiella cordifolia**	Heart-Leaved Penstemon	C/I
Lonicera		
japonica 'Halliana'	Hall's Honeysuckle	All Zones
subspicata**	Chaparral Honeysuckle	C/I
Solanum		
jasminoides	Potato Vine	C/I/D

PERENNIALS		
Coreopsis		
gigantean	Giant Coreopsis	C
grandiflora	Coreopsis	All Zones
maritime	Sea Dahlia	C
verticillata	Coreopsis	C/I
Heuchera maxima	Island Coral Bells	C/I
Iris douglasiana**	Douglas Iris	C/M
Iva hayesiana**	Poverty Weed	C/I
Kniphofia uvaria	Red-Hot Poker	C/M
Lavandula spp.	Lavender	All Zones
Limonium californicum		
var. mexicanum	Coastal Statice	C
perezii	Sea Lavender	C/I
Oenothera spp.	Primrose	C/I/M
Penstemon spp.**	Penstemon	C/I/D
Satureja douglasii	Yerba Buena	C/I
Sisyrinchium		
bellum	Blue-Eyed Grass	C/I
californicum	Golden-Eyed Grass	C
Solanum		
xantii	Purple Nightshade	C/I
Zauschneria**		
californica	California Fuschia	C/I
cana	Hoary California Fuschia	C/I
'Catalina'	Catalina Fuschia	C/I

ANNUALS		
Lupinus spp.**	Lupine	C/I/M

APPENDIX F

COUNTY LIST OF UNDESIRABLE PLANTS
AND
CALEPPC LIST

UNDESIRABLE PLANT LIST

The following species are highly flammable and should be avoided when planting within the first 50 feet adjacent to a structure. The plants listed below are more susceptible to burning, due to rough or peeling bark, production of large amounts of litter, vegetation that contains oils, resin, wax, or pitch, large amounts of dead material in the plant, or plantings with a high dead to live fuel ratio. Many of these species, if existing on the property and adequately maintained (pruning, thinning, irrigation, litter removal, and weeding), may remain as long as the potential for spreading a fire has been reduced or eliminated.

BOTANICAL NAME	COMMON NAME
Abies species	Fir Trees
Acacia species	Acacia (trees, shrubs, groundcovers)
*Adenostoma sparsifolium***	Red Shanks
*Adenostoma fasciculatum***	Chamise
Agonis juniperina	Juniper Myrtle
Araucaria species	Monkey Puzzle, Norfolk Island Pine
*Artemesia californica***	California Sagebrush
Bambusa species	Bamboo
Cedrus species	Cedar
Chamaecyparis species	False Cypress
Coprosma pumila	Prostrate Coprosma
Cryptomeria japonica	Japanese Cryptomeria
Cupressocyparis leylandii	Leylandii Cypress
*Cupressus forbesii***	Tecate Cypress
Cupressus glabra	Arizona Cypress
Cupressus sempervirens	Italian Cypress
Dodonea viscosa	Hopseed Bush
*Eriogonum fasciculatum***	Common Buckwheat
Eucalyptus species	Eucalyptus
*Heterotheca grandiflora***	Telegraph Plant
Juniperus species	Junipers
Larix species	Larch
Lonicera japonica	Japanese Honeysuckle
Miscanthus species	Eulalia Grass
*Muehlenbergia species***	Deer Grass
Palmae species	Palms
Picea species	Spruce Trees
*Pickeringia Montana***	Chaparral Pea
Pinus species	Pines
Podocarpus species	Fern Pine
Pseudotsuga menziesii	Douglas Fir
Rosmarinus species	Rosemary
*Salvia mellifera***	Black Sage
Taxodium species	Cypress
Taxus species	Yew
Thuja species	Arborvitae
Tsuga species	Hemlock
*Urtica urens***	Burning Nettle

** San Diego County native species

References: Gordon, H. White, T.C. 1994. Ecological Guide to Southern California Chaparral Plant Series. Cleveland National Forest.

Willis, E. 1997. San Diego County Fire Chief's Association. Wildland/Urban Interface Development Standards

City of Oceanside, California. 1995. Vegetation Management. Landscape Development Manual. Community Services Department, Engineering Division.

City of Vista, California 1997. Undesirable Plants. Section 18.56.999. Landscaping Design, Development and Maintenance Standards.

www.bewaterwise.com. 2004. Fire-resistant California Friendly Plants.

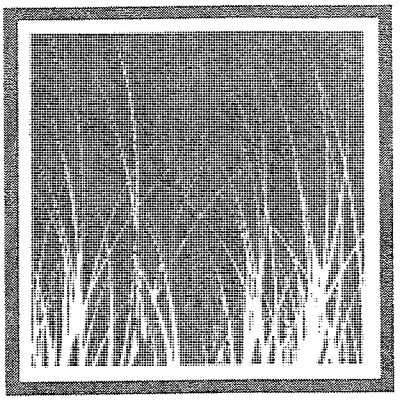
www.ucfpl.ucop.edu. 2004. University of California, Berkeley, Forest Products Laboratory, College of Natural Resources. Defensible Space Landscaping in the Urban/Wildland Interface. A Compilation of Fire Performance Ratings of Residential Landscape Plants.

County of Los Angeles Fire Department. 1998. Fuel Modification Plan Guidelines. Appendix I, Undesirable Plant List, and Appendix II, Undesirable Plant List.

The CalEPPC List:

Exotic Pest Plants of Greatest Ecological Concern in California

October, 1999



The CalEPPC list is based on information submitted by our members and by land managers, botanists and researchers throughout the state, and on published sources. The list highlights non-native plants that are serious problems **in wildlands** (natural areas that support native ecosystems, including national, state and local parks, ecological reserves, wildlife areas, national forests, BLM lands, etc.).

List categories include:

List A: Most Invasive Wildland Pest Plants; documented as aggressive invaders that displace natives and disrupt natural habitats. Includes two sub-lists; List A-1: Widespread pests that are invasive in more than 3 Jepson regions (see page 3), and List A-2: Regional pests invasive in 3 or fewer Jepson regions.

List B: Wildland Pest Plants of Lesser Invasiveness; invasive pest plants that spread less rapidly and cause a lesser degree of habitat disruption; may be widespread or regional.

Red Alert: Pest plants with potential to spread explosively; infestations currently small or localized. If found, alert CalEPPC, County Agricultural Commissioner or California Department of Food and Agriculture.

Need More Information: Plants for which current information does not adequately describe nature of threat to wildlands, distribution or invasiveness. Further information is requested from knowledgeable observers.

Annual Grasses: New in this edition; a preliminary list of annual grasses, abundant and widespread in California, that pose significant threats to wildlands. Information is requested to support further definition of this category in next List edition.

Considered But Not Listed: Plants that, after review of status, do not appear to pose a significant threat to wildlands.

Plants that fall into the following categories are not included in the List:

- Plants found mainly or solely in disturbed areas, such as roadsides and agricultural fields.
- Plants that are established only sparingly, with minimal impact on natural habitats.

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The CalEPPC list is updated regularly. Please use the form provided to send comments, suggestions or new information to: **Peter Warner, 555 Magnolia Avenue, Petaluma, CA, 94952-2080**, or via email at **peterjwarner@earthlink.net**

Thanks to all those who submitted comments for the 1999 list.

List A-1: Most Invasive Wildland Pest Plants; Widespread

Latin Name[1]	Common Name	Habitats of Concern and Other Comments	Distribution[2]
Ammophila arenaria	European beach grass	Coastal dunes	SCo,CCo,NCo
Arundo donax	giant reed, arundo	Riparian areas	cSNF,CCo,SCo,SnGb,D,GV
Bromus tectorum	cheat grass, downy brome	Sagebrush, pinyon-juniper, other desert communities; increases fire frequency	GB,D
Carpobrotus edulis	iceplant, sea fig	Many coastal communities, esp. dunes	SCo,CCo,NCo,SnFrB
Centaurea solstitialis[C]	yellow starthistle	Grasslands	CA-FP (uncommon in SoCal)
Cortaderia jubata	Andean pampas grass, jubatagrass	Horticultural; many coastal habitats, esp. disturbed or exposed sites incl. logged areas	NCo,NCoRO,SnFrB, CCo,WTR,SCo
Cortaderia selloana	pampas grass	Horticultural; coastal dunes, coastal scrub, Monterey pine forest, riparian, grasslands; wetlands in ScV; also on serpentine	SnFrB,SCo,CCo,ScV
Cynara cardunculus[B]	artichoke thistle	Coastal grasslands	CA-FP, esp. CCo,SCo
Cytisus scoparius[C]	Scotch broom	Horticultural; coastal scrub, oak woodlands, Sierra foothills	NW,CaRF,SNF,GV, SCo,CW
Eucalyptus globulus	Tasmanian blue gum	Riparian areas, grasslands, moist slopes	NCoRO,GV,SnFrB, CCo,SCoRO,SCo,nChI
Foeniculum vulgare	wild fennel	Grasslands; esp. SoCal, Channel Is.; the cultivated garden herb is not invasive	CA-FP
Genista monspessulana[C]	French broom	Horticultural; coastal scrub, oak woodlands, grasslands	NCoRO,NCoRI,SnFrB, CCo,SCoRO,sChI,WTR,PR
Lepidium latifolium[B]	perennial pepperweed, tall whitetop	Coastal, inland marshes, riparian areas, wetlands, grasslands; potential to invade montane wetlands	CA (except KR,D)
Myriophyllum spicatum	Eurasian watermilfoil	Horticultural; lakes, ponds, streams, aquaculture	SnFrB,SnJV,SNH(?); prob. CA
Pennisetum setaceum	fountain grass	Horticultural; grasslands, dunes, desert canyons; roadsides	Deltaic GV,CCo,SCo, SnFrB
Rubus discolor	Himalayan blackberry	Riparian areas, marshes, oak woodlands	CA-FP
Senecio mikanioides (=*Delairea odorata*)	Cape ivy, German ivy	Coastal, riparian areas, also SoCal (south side San Gabriel Mtns.)	SCo,CCo,NCo,SnFrB,SW
Taeniatherum caput medusae[C]	medusa-head	Grasslands, particularly alkaline and poorly drained areas	NCoR,CaR,SNF,GV,SCo
Tamarix chinensis, T. gallica, T. parviflora & T. ramosissima	tamarisk, salt cedar	Desert washes, riparian areas, seeps and springs	SCo,D,SnFrB,GV,sNCoR, sSNF,Teh,SCoRI,SNE, WTR
Ulex europaeus[B]	gorse	North, central coastal scrub, grasslands	NCo,NCoRO,CaRF, n&cSNF,SnFrB,CCo

[1]Noxious Weed Ratings

F: Federal Noxious Weed; as designated by the USDA; targeted for federally-funded prevention, eradication or containment efforts.

A: CA Dept. of Food & Agriculture, on "A" list of Noxious Weeds; agency policies call for eradication, containment or entry refusal.

B: CA Dept. of Food & Agriculture, on "B" list of Noxious Weeds; includes species that are more widespread, and therefore more difficult to contain; agency allows county Agricultural Commissioners to decide if local eradication or containment is warranted.

C: CA Dept. of Food & Agriculture, on "C" list of Noxious Weeds; includes weeds that are so widespread that the agency does not endorse state or county-funded eradication or containment efforts except in nurseries or seed lots.

Q: CA Dept. of Food & Agriculture's designation for temporary "A" rating pending determination of a permanent rating.

For most species nomenclature follows *The Jepson Manual: Higher Plants of California* (Hickman, J., Ed., 1993).

List A-2: Most Invasive Wildland Pest Plants; Regional

Latin Name[1]	Common Name	Habitats of Concern and Other Comments	Distribution[2]
Ailanthus altissima	tree of heaven	Riparian areas, grasslands, oak woodlands, esp. GV, SCo	CA-FP
Atriplex semibaccata	Australian saltbush	SoCal, coastal grasslands, scrub, "high marsh" of coastal salt marshes	CA (except CaR,c&sSN)
Brassica tournefortii	Moroccan or African mustard	Washes, alkaline flats, disturbed areas in Sonoran Desert	SW,D
Bromus madritensis ssp. *rubens*	red brome	Widespread; contributing to SoCal scrub, desert scrub type conversions; increases fire frequency	CA
Cardaria draba[B]	white-top, hoary cress	Riparian areas, marshes of central coast; also ag. lands, disturbed areas	Problem only in CCo
Conicosia pugioniformis	narrow-leaved iceplant, roundleaf iceplant	Coastal dunes, sandy soils near coast; best documented in San Luis Obispo and Santa Barbara cos.	CCo
Cotoneaster pannosus, C. lacteus	cotoneaster	Horticultural; many coastal communities; esp. North Coast, Big Sur; related species also invasive	CCo,SnFrB,NW
Cytisus striatus	striated broom	Often confused with C. scoparius; coastal scrub, grassland	SnFrB,CCo,SCo,PR
Egeria densa	Brazilian waterweed	Streams, ponds, sloughs, lakes; Sacramento-San Joaquin Delta	n&sSNF,SnJV,SnFrB, SnJt,SNE
Ehrharta calycina	veldt grass	Sandy soils, esp. dunes; rapidly spreading on central coast	CCo,SCoRO,WTR
Eichhornia crassipes	water hyacinth	Horticultural; established in natural waterways, esp. troublesome in Sacramento-San Joaquin Delta	GV,SnFrB,SCo,PR
Elaeagnus angustifolia	Russian olive	Horticultural; interior riparian areas	SnJV,SnFrB,SNE,DMoj
Euphorbia esula[A]	leafy spurge	Rangelands in far no. CA, also reported from Los Angeles Co.	eKR,NCo,CaR,MP,SCo
Ficus carica	edible fig	Horticultural; Central Valley, foothill, South Coast and Channel Is. riparian woodlands	nSNF,GV,SnFrB,SCo
Lupinus arboreus	bush lupine	Native to SCo, CCo; invasive only in North Coast dunes	SCo,CCo,NCo
Mentha pulegium	pennyroyal	Santa Rosa Plain (Sonoma Co.) and Central Valley vernal pools; wetlands elsewhere	NW,GV,CW,SCo
Myoporum laetum	myoporum	Horticultural; coastal riparian areas in SCo	SCo,CCo
Saponaria officinalis	bouncing bet	Horticultural; meadows, riparian habitat in SNE, esp. Mono Basin	NW,CaRH,nSNF,SnFrB, SCoRO,SCo,PR,MP,SNE, GV
Spartina alterniflora	Atlantic or smooth cordgrass	S.F. Bay salt marshes; populations in Humboldt Bay believed extirpated	CCo(shores of S.F. Bay)

[2]Distribution by geographic subdivisions per the Jepson Manual

CA=California
CA-FP=California Floristic Province
CaR=Cascade Ranges
CaRF=Cascade Range Foothills
CCo=Central Coast
ChI=Channel Islands
CW=Central Western CA
D=Deserts
DMoj=Mojave Desert
DSon=Sonoran Desert
GB=Great Basin
GV=Great Valley
KR=Klamath Ranges
MP=Modoc Plateau
NCo=North Coast
NCoRI=Inner NCo Ranges
NCoRO=Outer NCo Ranges
NW=Northwestern CA
PR=Peninsular Ranges
SCo=South Coast
SCoRI=Inner SCo Ranges
SCoRO=Outer SCo Ranges
ScV=Sacramento Valley
SnJV=San Joaquin Valley
SN=Sierra Nevada
SNE=East of SN
SNF=SN Foothills
SNH=High SN
SnFrB=San Francisco Bay Area
SnGb=San Gabriel Mtns
SW=Southwestern CA
Teh=Tehachapi Mtns
WTR=Western Transverse Ranges

List B: Wildland Pest Plants of Lesser Invasiveness

Latin Name[1]	Common Name	Habitats of Concern and Other Comments	Distribution[2]
Ageratina adenophora[F]	eupatory	Horticultural; coastal canyons, coastal scrub, slopes, Marin to San Diego Co; San Gabriel Mtns.	CCo,SnFrB,SCo,SCoRO
Bassia hyssopifolia	bassia	Alkaline habitats	CA (except NW,SNH)
Bellardia trixago	bellardia	Grasslands, on serpentine, where a threat to rare natives	NCoRO,CCo,SnFrB
Brassica nigra	black mustard	Coastal communities, esp. fog-belt grasslands; disturbed areas	CA-FP
Cardaria chalepensis[B]	lens-podded white-top	Wetlands of Central Valley	CA
Carduus pycnocephalus[C]	Italian thistle	Grasslands, shrublands, oak woodlands	sNCo,sNCoR,SNF,CW, SCo,ScV
Centaurea calcitrapa[B]	purple starthistle	Grasslands	NW,sCaRF,SNF,GV,CW,SW
Centaurea melitensis	tocalote, Malta starthistle	Widespread; sometimes misidentified as C. solstitialis; perhaps a more serious invader than currently recognized	CA-FP,D
Cirsium arvense[B]	Canada thistle	Especially troublesome in riparian areas	CA-FP
Cirsium vulgare	bull thistle	Riparian areas, marshes, meadows	CA-FP,GB
Conium maculatum	poison hemlock	Mainly disturbed areas but may invade wildlands; known to poison wildlife; early expanding stage in many areas, esp. San Diego Co. riparian, oak understory	CA-FP
Crataegus monogyna	hawthorn	Horticultural; recent invader, colonizing healthy native forest around Crystal Springs reservoir on S.F. peninsula	SnFrB,CCo,NCo,NCoR
Ehrharta erecta	veldt grass	Wetlands, moist wildlands; common in urban areas; potential to spread rapidly in coastal, riparian, grassland habitats	SnFrB,CCo,SCo
Erechtites glomerata; E. minima	Australian fireweed	Coastal woodlands, scrub, NW forests, esp. redwoods	NCo,NCoRO,CCo,SnFrB, SCoRO
Festuca arundinacea	tall fescue	Horticultural (turf grass); coastal scrub, grasslands in NCo, CCo	CA-FP
Hedera helix	English ivy	Horticultural; invasive in coastal forests, riparian areas	CA-FP
Holcus lanatus	velvet grass	Coastal grasslands, wetlands in No. CA	CA exc. DSon
Hypericum perforatum[C]	Klamathweed, St. John's wort	Redwood forests, meadows, woodlands; invasion may occur due to lag in control by established biocontrol agents	NW,CaRH,n&cSN,ScV, CCo,SnFrB,PR
Ilex aquifolium	English holly	Horticultural; coastal forests, riparian areas	NCoRO,SnFrB,CCo
Iris pseudacorus	yellow water iris, yellow flag	Horticultural; riparian, wetland areas, esp. San Diego, Los Angeles cos.	SnFrB,CCo,sSnJV,SCo
Leucanthemum vulgare	ox-eye daisy	Horticultural; invades grassland, coastal scrub	KR,NCoRO,n&cSNH, SnFrB,WTR,PR
Mesembryanthemum crystallinum	crystalline iceplant	Coastal bluffs, dunes, scrub, grasslands; concentrates salt in soil	NCo,CCo,SCo,ChI
Myriophyllum aquaticum	parrot's feather	Horticultural; streams, lakes, ponds	NCo,CaRF,CW,SCo
Olea europaea	olive	Horticultural and agricultural; reported as invasive in riparian habitats in Santa Barbara, San Diego	NCoR,NCoRO,CCo, SnFrB,SCoRO,SCo
Phalaris aquatica	Harding grass	Coastal sites, esp. moist soils	NW,cSNF,CCo,SCo
Potamogeton crispus	curlyleaf pondweed	Scattered distribution in ponds, lakes, streams	NCoR,GV,CCo,SnFrB, SCo,ChI,SnGb,SnBr,DMoj
Ricinus communis	castor bean	SoCal coastal riparian habitats	GV,SCo,CCo
Robinia pseudoacacia	black locust	Horticultural; riparian areas, canyons; native to eastern U.S.	CA-FP,GB
Schinus molle	Peruvian pepper tree	Horticultural; invasive in riparian habitats in San Diego, Santa Cruz Is.	SNF,GV,CW,SW,Teh

List B: Continued

Latin Name[1]	Common Name	Habitats of Concern and Other Comments	Distribution[2]
Schinus terebinthifolius	Brazilian pepper	Horticultural; riparian areas	sSCo
Senecio jacobaea[B]	tansy ragwort	Grasslands; biocontrol agents established	NCo,wKR,s&wCaR, nSNF, nScV,SW
Spartium junceum	Spanish broom	Coastal scrub, grassland, wetlands, oak woodland, NW forests, esp. redwoods; also roadcuts	NCoRO,ScV,SnFrB, SCoRO,SCo,sChl,WTR
Verbascum thapsus	woolly or common mullein	SNE meadows, sagebrush, pinyon-juniper woodlands; shores of Boggs Lake (Lake Co.)	CA
Vinca major	periwinkle	Horticultural; riparian, oak woodland, other coastal habitats	NCoRO,SnFrB, CCo, sSCoRO,SCo

Red Alert: Species with potential to spread explosively; infestations currently restricted

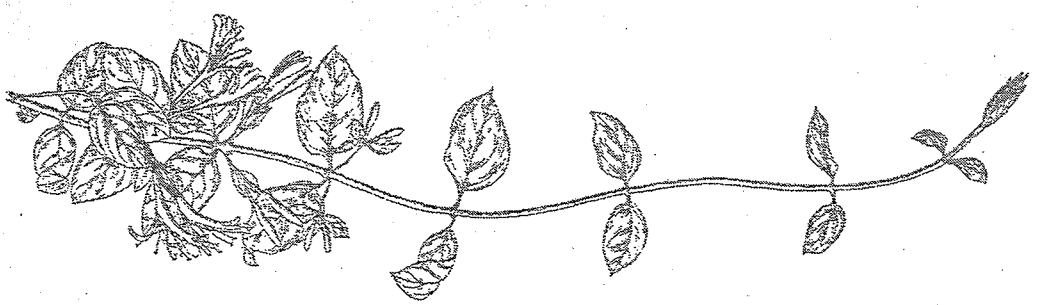
Latin Name[1]	Common Name	Habitats of Concern and Other Comments	Distribution[2]
Alhagi pseudalhagi[A]	camel thorn	Noxious weed of arid areas; most infestations in California have been eradicated	GV,sSNE,D
Arctotheca calendula[A]	Capeweed	Seed-producing types are the problem; most are vegetative only	NCo,SnFrB,CCo
Centaurea maculosa[A]	spotted knapweed	Riparian, grassland, wet meadows, forest habitats; contact CA Food & Ag if new occurrences found	CaR,SN,nScV,nCW,MP, nSNE,sPR,NW
Crupina vulgaris[F,A]	bearded creeper, common crupina	Aggressively moving into wildlands, esp. grassland habitats	NCoR (Sonoma Co.),MP
Halogeton glomeratus[A]	halogeton	Noxious weed of Great Basin rangelands; report locations to CA Food & Ag; goal is exclusion from CA	GB
Helichrysum petiolare	licorice plant	North coastal scrub; one population on Mt. Tamalpais, w. Marin Co.	Not in Jepson
Hydrilla verticillata[F,A]	hydrilla	Noxious water weed; report locations to CA Food & Ag; eradication program in place; found in Clear Lake (Lake Co.) in 1994	NCoRI,n&cSNF,ScV,SCo,D
Lythrum salicaria[B]	purple loosestrife	Horticultural; noxious weed of wetlands, riparian areas	sNCo,NCoRO,nSNF,ScV, SnFrB,nwMP
Ononis alopecuroides[Q]	foxtail restharrow	Eradication efforts underway in San Luis Obispo Co.; to be looked for elsewhere in CA	CCo; not in Jepson
Retama monosperma	bridal broom	First noted at Fallbrook Naval Weapons Station, San Diego Co; could rival other invasive brooms	San Diego Co.; not in Jepson
Salvinia molesta[F]	giant waterfern	Ponds, lakes, reservoirs, canals	Napa, Sonoma cos., lower Colorado River; not in Jepson
Sapium sebiferum	Chinese tallow tree	Horticultural; riparian, wetland habitats, open areas and understory	ScV,SnFrB; not in Jepson
Sesbania punicea	scarlet wisteria tree	Horticultural; riparian areas; American River Parkway, Sacramento Co., Suisun Marsh, San Joaquin River Parkway	ScV,SnJV; not in Jepson
Spartina anglica	cord grass	Scattered in S.F. Bay	Not in Jepson
Spartina densiflora	dense-flowered cord grass	Scattered in S.F. Bay, Humboldt Bay salt marshes	CCo,NCo
Spartina patens	salt-meadow cord grass	One site in S.F. Bay, also Siuslaw Estuary, OR and Puget Sound, WA	CCo

Need More Information

Latin Name[1]	Common Name	Habitats of Concern and Other Comments	Distribution[2]
Acacia dealbata	silver wattle	Aggressive in natural areas?	SnFRB,SCoRO,SCoRI,CCo
Acacia decurrens	green wattle	Sometimes confused with A. dealbata; aggressive in natural areas?	Unknown
Acacia melanoxylon	blackwood acacia	Reported from S.F. Bay area, central coast, Santa Cruz Is.; spreads slowly; other areas?	SnFrB,SCoRO,SCo,CCo
Aeschynomene rudis[B]	rough jointvetch	Princeton area, Colusa Co.; pest of rice crops; potential threat to riparian, wetland habitats?	ScV
Agrostis avenacea	Pacific bentgrass	Invading vernal pools in San Diego area; attempts at manual eradication unsuccessful so far; problem in other areas?	sNCo,sNCoR,SNF, GV,CW,nSCo
Aptenia cordifolia	red apple	Habitats where invasive?	CCo,SCo,sChI
Asphodelus fistulosus	asphodel	Common in SCo highway rights-of-way, other disturbed sites; threats to wildlands?	sSnJV,SCo
Carduus acanthoides[A]	giant plumeless thistle	Threatens wildlands?	NCoRI,nSN,SnFrB, nSCoRO,MP
Cistus ladanifer	gum cistus	Horticultural; invades coastal sage scrub, chaparral; areas where problematic?	sCCo,SnGb
Cordyline australis	New Zealand cabbage	Infestation at Salt Point State Park; bird-dispersed; other problem areas?	Not in Jepson
Cotoneaster spp. (exc. C. pannosus, C. lacteus)	cotoneaster	Horticultural; bird-distributed; which species are problems in wildlands?	Unknown
Cupressus macrocarpa	Monterey cypress	Native only to Monterey Peninsula; planted and naturalized CCo, NCo; threat to wildlands?	CCo
Descurainia sophia	flixweed, tansy mustard	Entering Mojave wildlands through washes; threat to wildlands?	CA
Dimorphotheca sinuata	African daisy, Cape marigold	Horticultural; reported as invasive in w. Riverside Co., Ventura Co.; problem elsewhere?	SnJV,SCoRO,SCo,PR
Echium candicans, E. pininana	pride of Madeira, pride of Teneriffe	Horticultural; riparian, grassland, coastal scrub communities; spreads by seed	CCo,SnFrB,SCo,sNCo
Ehrharta longiflora	veldt grass	Reported from San Diego	Not in Jepson
Erica lusitanica	heath	Threat to wildlands?	NCo (Humboldt Co.)
Euphorbia lathyris	caper spurge, gopher plant	Invades coastal scrub, marshes, dunes; Sonoma, Marin cos.; threat to wildlands?	NCo,CCo,GV,SCo
Gazania linearis	gazania	Horticultural; invades grassland in S.F., coastal scrub?	CCo,SCo
Glyceria declinata		Although reported from Central Valley vernal pools; genetic research is needed to confirm identity; plants that have been called G. declinata key in Jepson to native G. occidentalis	Uncertain; not in Jepson
Hedera canariensis	Algerian ivy	Horticultural; invasive in riparian areas in SoCal?	Not in Jepson
Hirschfeldia incana	Mediterranean or short-pod mustard	Increasing in western, southern Mojave; threat to wildlands?	NCo,SNF,GV,CW,SCo, DMoj
Hypericum canariense	Canary Island hypericum	Reported in San Diego area, coastal sage scrub, grassland; threat to wildlands?	SCo
Hypochaeris radicata	rough cat's ear	Widespread in coastal grasslands, wetlands; threat to wildlands?	NW,CaRI,F,nSNF,ScV, CW,SCo
Isatis tinctoria[B]	dyers' woad	Well-known invader in Utah; threat to wildlands?	KR,CaR,nSNH,MP
Ligustrum lucidum	glossy privet	Horticultural; spreading rapidly on Mendocino coast; problem in other areas?	NCo; not in Jepson
Limonium ramosissimum ssp. provinciale	sea lavender	Reported spreading in Carpinteria Salt Marsh; problem in other areas?	Not in Jepson

Need More Information: Continued

Latin Name[1]	Common Name	Habitats of Concern and Other Comments	Distribution[2]
Ludwigia uruguayensis (= *L. hexapetala*)	water primrose	Invasive in aquatic habitats; non-native status questioned?	NCo,sNCoRO,CCo, SnFrB,SCo
Malephora crocea	ice plant	Invades margins of wetlands, bluffs along SCo	CCo,SCo,sChI
Maytenus boaria	mayten	Horticultural; scattered in riparian forests, ScV; east SnFrB	ScV,SnFrB
Mesembryanthemum nodiflorum	slender-leaved iceplant	Abundant on Channel Islands; invades wetlands; habitats where problematic?	SnFrB,SCo,ChI
Nicotiana glauca	tree tobacco	Disturbed places; not very competitive with natives in coastal scrub, chaparral; spreading along Putah Creek (Yolo Co.); problems elsewhere?	NCoRI,c&sSNF, GV,CW,SW,D
Oxalis pes-caprae	Bermuda buttercup	Invades disturbed sites; invasive in undisturbed habitats?	NCo,NCoRO,CCo, SnFrB,SCoRO,SCo
Parentucellia viscosa		Threat to NCo (Humboldt Co.) dune swales?	NCo,NCoRO,CCo,SCo
Passiflora caerulea		Horticultural; reported from SoCal; threat to wildlands?	SCo; not in Jepson
Pennisetum clandestinum[F,C]	Kikuyu grass	Disturbed sites, roadsides; threat to wildlands?	NCo,CCo,SnFrB,SCo, Santa Cruz Is.
Phyla nodiflora	mat lippia	Most varieties in CA are native; taxonomy unclear; status of plants in vernal pools, wetlands?	NW(except KR,NCoRH), GV,CCo,SnFrB,SCo, PR,DSon
Pinus radiata cultivars	Monterey pine	Cultivars invading native Monterey, Cambria forests, where spread of pine pitch canker is a concern	CCo
Piptatherum miliaceum	smilo grass	Aggressive in SoCal creeks, canyons; threats to wildlands?	NCo,GV,CW,SCo
Pistacia chinensis	Chinese pistache	Horticultural; invades riparian areas and woodlands in ScV	ScV
Prunus cerasifera	cherry plum	Oak woodland, riparian areas; esp. Marin, Sonoma cos.; bird-distributed; problems elsewhere?	SnFrB,CCo
Pyracantha angustifolia	pyracantha	Horticultural; spreads from seed in S.F. Bay area; bird-distributed; problem elsewhere?	sNCoRO,CCo,SnFrB, SCo
Salsola soda	glasswort	Threat to salt marshes?	nCCo,SnFrB
Salsola tragus[C]	Russian thistle, tumbleweed	Abundant in dry open areas in w. Mojave Desert, Great Basin; not limited to disturbed sites; threats?	CA
Salvia aethiopis[P]	Mediterranean sage	Creates monocultures in E. Oregon grasslands; threat to CA wildlands?	MP
Stipa capensis		Distribution and threats?	Not in Jepson
Tamarix aphylla	athel	Spreading in Salton Sea area; threats to wildlands?	nSnJV,nSCo,D
Tanacetum vulgare	common tansy	Jepson reports as uncommon, escape from cultivation in urban areas; problem in wildlands?	NCo,NCoRO,CaRH, SCoRO
Vinca major L.	[illegible]	Horticultural, invades riparian forests, wetlands, extensive along ScV riparian corridors, roadsides (Yuba Co.), elsewhere?	ScV,nSnJV,nSnFrB,CCo



Annual Grasses

Latin Name[1]	Common Name	Habitats of Concern and Other Comments	Distribution[2]
Aegilops triuncialis[B]	barbed goatgrass	Serpentine soils, grasslands	sNCoR,CaRF, n&cSNF, ScV,nCW
Avena barbata	slender wild oat	Lower elev. in SoCal; coastal slopes, coastal sage scrub, disturbed sites	CA-FP,MP,DMoj
Avena fatua	wild oat	Lower elev. in SoCal; coastal slopes, coastal sage scrub on deeper soil, disturbed sites	CA-FP,MP,DMoj
Brachypodium distachyon	false brome	Expanding in SoCal; common in Orange Co.	sNCoR,sCaRF, SNF,GV,CW,SCo,sChl
Bromus diandrus	ripgut brome	Coastal dunes, coastal sage scrub, grasslands	CA
Lolium multiflorum	Italian ryegrass	Wetland areas, esp. vernal pools in San Diego Co.; common in disturbed sites	CA-FP
Schismus arabicus	Mediterranean grass	Threat to Mojave and Colorado desert shrublands?	SnJV,CW,sChl,D
Schismus barbatus	Mediterranean grass	Threat to Mojave and Colorado desert shrublands?	SnJV,SW,D

Considered, but not listed

Latin Name[1]	Common Name	Habitats of Concern and Other Comments
Albizia lophantha	plume acacia	Not invasive
Anthoxanthum odoratum	sweet vernal grass	Disturbed sites on coast; Marin, Sonoma, Mendocino cos.
Carpobrotus chilensis	sea fig	Native status in question; not a threat to wildlands
Centranthus ruber	red valerian	Horticultural; roadcuts in Marin Co.; not a threat to wildlands
Convolvulus arvensis[C]	field bindweed	Disturbed sites; ag lands
Coprosma repens	mirror plant	No evidence of wildland threat
Crocosmia x crocosmiiflora		Generally in disturbed coastal, urban areas, roadsides
Digitalis purpurea	foxglove	Horticultural; scattered in prairies, meadows, disturbed sites; not a major wildland threat
Dipsacus sativus, D. fullonum	wild teasel, Fuller's teasel	Roadsides, disturbed sites
Fumaria officinalis, F. parviflora	fumitory	S.F. Bay area, Monterey Bay salt marshes, sandy disturbed sites
Medicago polymorpha	California bur clover	Grasslands, moist sites; mainly restricted to disturbed sites
Melilotus officinalis	yellow sweet clover	Restricted to disturbed sites in CA
Nerium oleander	oleander	Horticultural; not invasive, although reported from riparian areas in Central Valley, San Bernardino Mtns.
Picris echioides	bristly ox-tongue	Disturbed areas
Silybum marianum	milk thistle	Disturbed areas, especially overgrazed moist pasturelands; may interfere with restoration
Xanthium spinosum	spiny cocklebur	Identified as native in *The Jepson Manual* (Hickman, 1993) and *A California Flora* (Munz and Keck, 1968); restricted to disturbed areas
Zantedeschia aethiopica	calla lily	Horticultural; mainly a garden escape in wet coastal areas
Zoysia cultivars	Amazoy and others	Horticultural; no evidence of wildland threat