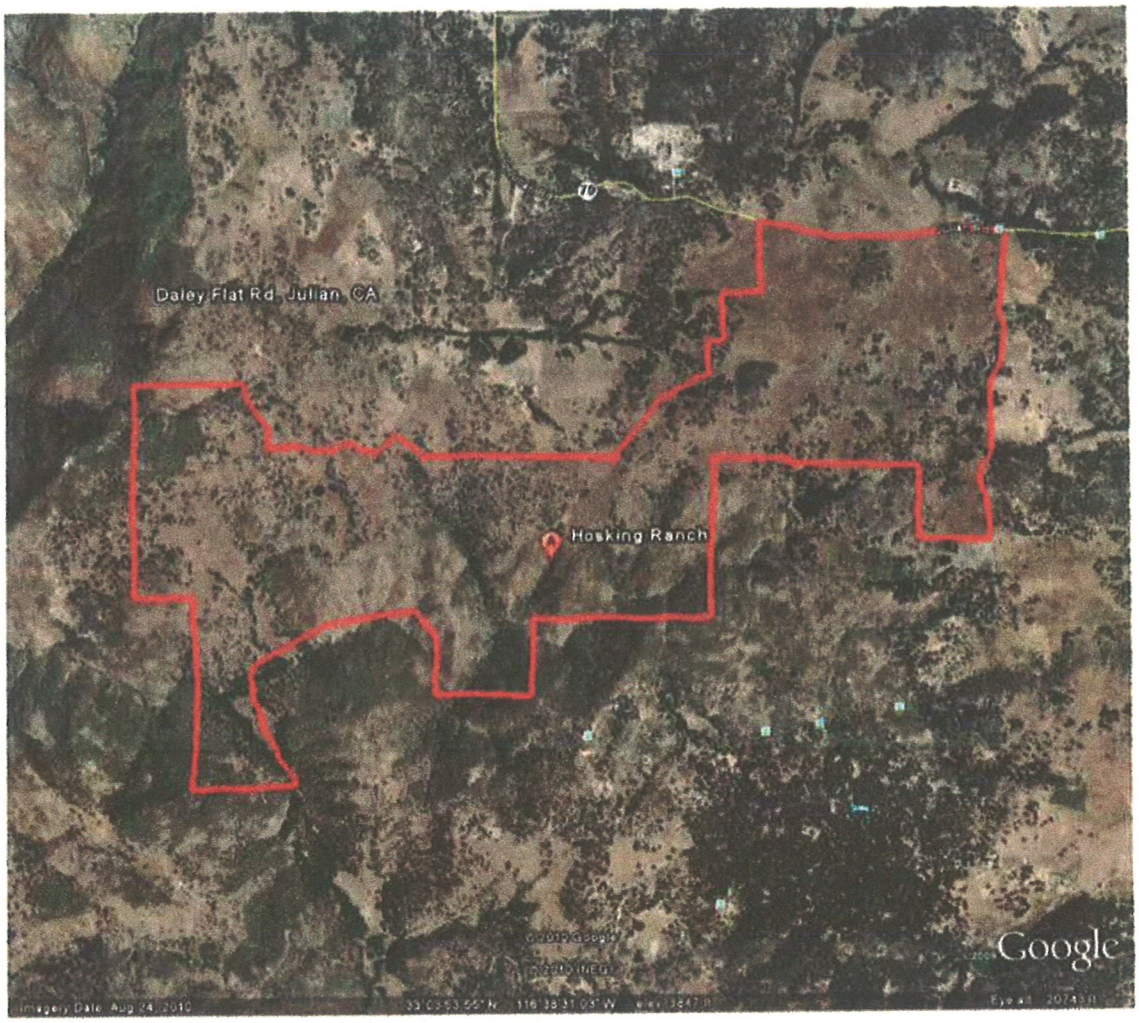


Hoskings Ranch
Highway 78/79
Julian CA

Lamont Landis Fire Consulting
43242 Modena Drive
Temecula CA 92592
Lamontlandis@yahoo.com
1-760-702-4370

Hoskings Ranch
TM 5312 RPL 2/3

Prepared for the County of San Diego
April 24, 2009/ revised November 1, 2011/May 16, 2012/September 27, 2012
February 10.2013

Principal Author

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The proposed project is TM 5312RPL 2 to subdivide a 1,412.75 acre parcel into 24 parcels or alternative plan with 34 parcels. The project is located at SR 78/79 between Hoskings Ranch Road and Pine Hills Road, Julian. The project encompasses gentle to moderate sloped land covered with Diegan Coastal Sage Scrub, Southern Mixed Chaparral, non-native grasses and scattered Oak Trees. The surrounding property is covered with Diegan Coastal Sage Scrub, Southern Mixed Chaprral, some non-native grasses and scattered trees. Removal of the vegetation for fuel modification this project will create infill that will reduce the fire hazard in the area. The flame length will be from 12 ft to 56 ft with a Santa Ana wind causing a rapid rate of spread of 20 miles per hr. The nearest fire protection for this project is Julian/Cuyamaca Fire Station No. 56 and is less than 2.52 minutes away from the north east corner of the property and an additional 6.63 minutes away from the farthest parcel in the project for a total of 9.15 minutes, or 5.1 miles via Hoskings Ranch Daley Flat for a total of 9.32 minutes. Access to this project will be off of SR 78/79 to Pine Hills Road to Tenaya Road. There is a secondary/alternate access of Hopkins Ranch Road and Daley Flats Road. This Fire Protection Plan is in response to a request from the County of San Diego DPLU.

Chapter 1 Introduction

This Fire Protection Plan/Fuel Modification Plan (FPP) has been prepared for TM 5312 to be subdivided into 24 parcels or alternative of 34 parcels. The purpose of the Fire Protection Plan 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 this 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 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. This plan has been developed to protect the residential structures from potential radiant heat from wildfire hazards to the maximum extent practical. This plan does not guarantee that the structures will not burn, but greatly reduces that possibility. These are not shelter in place residences. A multitude of factors have been incorporated into the Fuel Modification Plan including wildfire history, prevailing wind patterns, existing vegetation /fuel loading, terrain and adjacent vegetation/land use.

In February 2012, the California, the State of California State Board of Forestry and Fire Protection certified the current County Consolidated Fire Code and Building Code together as meeting or exceeding CCR Title 14 "SRA Fire Safe Regulations' and

authorized the application of these codes in lieu of the referenced portion of title 14 in SRA.

1.1 Project Location, Description and Environmental Setting

1.1.1 Project Location

This project is located near the Community of Julian and is in the Julian Cuyamaca Fire Protection District response area. "There will be off-site improvements to the primary and alternate/secondary access roads." The project is located at SR 78/79 and Pine Hills Road Julian, California. The roads leading to the property are paved and in good condition (SR78/79). The roads Daley Flats Road and Hoskins Ranch Road will need to be improved to meet count fire code. There will be off site improvement to these roads.

1.1.2 Project Description

This project is within the Julian Cuyamaca Fire Protection District emergency response area. The project consists of approximately 1,412.75 acres; the project will be divided into 24 parcels (Figure 1.1.2.1) or the alternative 34 parcels (Figure 1.1.2.2. APN # include 289-030-7, 8 & 11; 289-060-34; 289-062-3, 4 &6; 289-061-1, 3; 289-100-4, 10 &11; 289-120-32, 40 & 4 and 289-470-18 & 19. The sizes of the structures are undetermined at this time. The type of occupancy will be single-family residences. The proposed potential use of the new parcels will be residential. There will be off site improvement to the roads. The roads leading to the property are paved and in good condition.

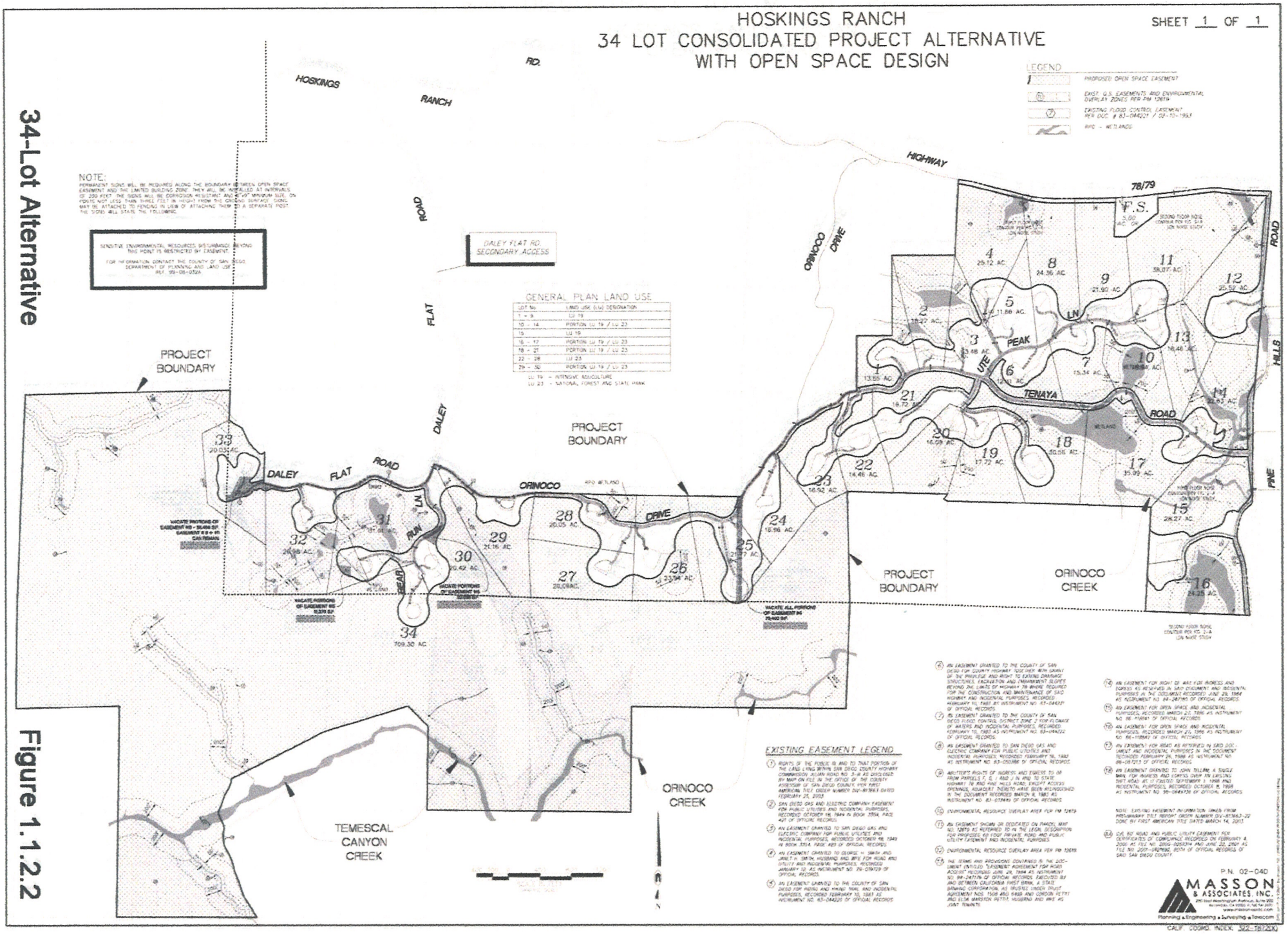
1.1.3 Environmental Setting

The site was visited on January 15, 2009 and September 23, 2010 by Lamont Landis

Topography, the project encompasses gentle sloped land to steep slope land.
Vegetation types are some non-native grass, Diegan Coastal Sage Scrub, Southern Mixed Chaparral and scattered trees.

Fuel loads: The property is covered with non-native grasses one foot in height, Southern Mixed Chaparral, Diego Coastal Sage Scrub approximately three feet in height and scattered trees. The fuel load for Diegan Coastal Sage Scrub will be approximately 3.6 tons per acre the fuel load for southern mixed Chaparral Chamise is 3 tons per acre (RMRS-GTR-153 USDA Forest Service). The fuel load for non-native grasses less than one foot will be .74 tons per acre (RMRS-GTR-153 USDA Forest Service).

On October 25, 2003 the Cedar Wildfire burned over 280,000 acres of natural open space and destroyed 2,232 homes. Embers from the wildfire traveled long distances due to Santa Ana winds and low humidity. The Cedar Fire was driven by Santa Ana winds fueled by 50 year old brush and an extended drought.


HOSKINGS RANCH
34 LOT CONSOLIDATED PROJECT ALTERNATIVE
WITH OPEN SPACE DESIGN
SHEET 1 OF 1
34-Lot Alternative
Figure 1.1.2.2
HOSKINGS RANCH RD.
DALEY FLAT ROAD
ORINOCO DRIVE
HIGHWAY 78/79
TENAYA ROAD
PEAK LN.
PINE HILLS ROAD
PROJECT BOUNDARY
DALEY FLAT RD. SECONDARY ACCESS
ORINOCO CREEK
TEMESCAL CANYON CREEK
BEAR RUN
LEGEND
PROPOSED OPEN SPACE EASEMENT
EXIST. U.S. EASEMENTS AND ENVIRONMENTAL OVERLAY ZONES PER PM 12679
EXISTING FLOOD CONTROL EASEMENT PER DOC. # 83-044221 / 02-15-1983
RPO = WETLANDS
NOTE:
PERMANENT SIGNS WILL BE REQUIRED ALONG THE BOUNDARY BETWEEN OPEN SPACE EASEMENT AND THE LIMITED BUILDING ZONE. THEY WILL BE INSTALLED AT INTERVALS OF 200 FEET. THE SIGNS WILL BE CORROSION RESISTANT AND 8"x10" MINIMUM SIZE. ON POSTS NOT LESS THAN THREE FEET IN HEIGHT FROM THE GROUND SURFACE. SIGNS MAY BE ATTACHED TO FENCING IN LIEU OF ATTACHING THEM TO A SEPARATE POST. THE SIGNS WILL STATE THE FOLLOWING:
SENSITIVE ENVIRONMENTAL RESOURCES, DISTURBANCE BEYOND THIS POINT IS RESTRICTED BY EASEMENT.
FOR INFORMATION, CONTACT THE COUNTY OF SAN DIEGO DEPARTMENT OF PLANNING AND LAND USE
REF. 99-08-032A
GENERAL PLAN LAND USE
LOT No. | LAND USE (LU) DESIGNATION
1 - 9 | LU 19
10 - 14 | PORTION LU 19 / LU 23
15 | LU 19
16 - 17 | PORTION LU 19 / LU 23
18 - 21 | PORTION LU 19 / LU 23
22 - 28 | LU 23
29 - 30 | PORTION LU 19 / LU 23
LU 19 = INTENSIVE AGRICULTURE
LU 23 = NATIONAL FOREST AND STATE PARK
EXISTING EASEMENT LEGEND
(1) RIGHTS OF THE PUBLIC IN AND TO THAT PORTION OF THE LAND LYING WITHIN SAN DIEGO COUNTY HIGHWAY COMMISSION ALPINE ROAD NO. 5-A AS DESCRIBED BY MAP ON FILE IN THE OFFICE OF THE COUNTY ASSESSOR OF SAN DIEGO COUNTY, PER FIRST AMERICAN TITLE ORDER NUMBER 01-0019651 DATED FEBRUARY 26, 2003.
(2) SAN DIEGO GAS AND ELECTRIC COMPANY EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED OCTOBER 16, 1944 IN BOOK 1559, PAGE 427 OF OFFICIAL RECORDS.
(3) AN EASEMENT GRANTED TO SAN DIEGO GAS AND ELECTRIC COMPANY FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED OCTOBER 09, 1945 IN BOOK 1934, PAGE 485 OF OFFICIAL RECORDS.
(4) AN EASEMENT GRANTED TO GEORGE H. SMITH AND JANET H. SMITH, HUSBAND AND WIFE FOR ROAD AND UTILITY AND INCIDENTAL PURPOSES, RECORDED JANUARY 12, AS INSTRUMENT NO. 79-019729 OF OFFICIAL RECORDS.
(5) AN EASEMENT GRANTED TO THE COUNTY OF SAN DIEGO FOR RIDING AND HIKING TRAIL AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 10, 1983 AS INSTRUMENT NO. 83-044221 OF OFFICIAL RECORDS.
(6) AN EASEMENT GRANTED TO THE COUNTY OF SAN DIEGO FOR COUNTY HIGHWAY TOGETHER WITH GRANT OF THE PRIVILEGE AND RIGHT TO EXTEND DRAINAGE STRUCTURES, EXCAVATION AND EMBANKMENT SLOPES BEYOND THE LIMITS OF HIGHWAY 78 WHERE REQUIRED FOR THE CONSTRUCTION AND MAINTENANCE OF SAID HIGHWAY AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 10, 1983 AS INSTRUMENT NO. 83-044227 OF OFFICIAL RECORDS.
(7) AN EASEMENT GRANTED TO THE COUNTY OF SAN DIEGO FLOOD CONTROL DISTRICT ZONE 2 FOR FLOWAGE OF WATERS AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 10, 1983 AS INSTRUMENT NO. 83-044221 OF OFFICIAL RECORDS.
(8) AN EASEMENT GRANTED TO SAN DIEGO GAS AND ELECTRIC COMPANY FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 16, 1983 AS INSTRUMENT NO. 83-050898 OF OFFICIAL RECORDS.
(9) WAIVER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM PARCELS 1, 2, 3, AND 4 IN AND TO STATE HIGHWAY 78 AND MEETS ROAD, EXCEPT ACCESS OPENINGS, ADJACENT THERETO, HAVE BEEN RELINQUISHED IN THE DOCUMENT RECORDED MARCH 8, 1983 AS INSTRUMENT NO. 83-078493 OF OFFICIAL RECORDS.
(10) ENVIRONMENTAL RESOURCE OVERLAY AREA PER PM 12679
(11) AN EASEMENT SHOWN OR DEDICATED ON PARCEL MAP NO. 12679 AS REFERRED TO IN THE LEGAL DESCRIPTION FOR PURPOSES OF FOOT PATH, ROAD AND PUBLIC UTILITY EASEMENT AND INCIDENTAL PURPOSES.
(12) ENVIRONMENTAL RESOURCE OVERLAY AREA PER PM 12679
(13) THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED "EASEMENT AGREEMENT FOR ROAD ACCESS" RECORDED JUNE 28, 1994 AS INSTRUMENT NO. 94-247176 OF OFFICIAL RECORDS. EXECUTED BY AND BETWEEN CALIFORNIA FIRST BANK, A STATE BANKING CORPORATION, AS TRUSTEE UNDER TRUST AGREEMENT NOS. 1568 AND 1569 AND GORDON PETRY AND ELSIE MARGARON PETRY, HUSBAND AND WIFE AS JOINT TENANTS.
(14) AN EASEMENT FOR RIGHT OF WAY FOR INGRESS AND EGRESS, AS RESERVED IN SAID DOCUMENT AND INCIDENTAL PURPOSES IN THE DEED/GRANT RECORDED JUNE 28, 1994 AS INSTRUMENT NO. 94-247180 OF OFFICIAL RECORDS.
(15) AN EASEMENT FOR OPEN SPACE AND INCIDENTAL PURPOSES, RECORDED MARCH 20, 1996 AS INSTRUMENT NO. 96-119847 OF OFFICIAL RECORDS.
(16) AN EASEMENT FOR OPEN SPACE AND INCIDENTAL PURPOSES, RECORDED MARCH 20, 1996 AS INSTRUMENT NO. 96-119847 OF OFFICIAL RECORDS.
(17) AN EASEMENT FOR ROAD AS RESERVED IN SAID DOCUMENT AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED FEBRUARY 24, 1988 AS INSTRUMENT NO. 88-087213 OF OFFICIAL RECORDS.
(18) AN EASEMENT GRANTED TO JOHN TILLEMA, A SINGLE MAN, FOR INGRESS AND EGRESS OVER AN EXISTING DIRT ROAD AS IT EXISTS SEPTEMBER 1, 1998 AND RESIDENTIAL PURPOSES, RECORDED OCTOBER 19, 1998 AS INSTRUMENT NO. 98-0445726 OF OFFICIAL RECORDS
NOTE: EXISTING EASEMENT INFORMATION TAKEN FROM PRELIMINARY TITLE REPORT ORDER NUMBER 01-0019651-22 DONE BY FIRST AMERICAN TITLE DATED MARCH 14, 2003.
(24) CA, 50' ROAD AND PUBLIC UTILITY EASEMENT FOR CERTIFICATES OF COMPLIANCE RECORDED ON FEBRUARY 4, 2000 AS FILE NO. 2000-0055974 AND JUNE 22, 2001 AS FILE NO. 2001-0429698, BOTH OF OFFICIAL RECORDS OF SAID SAN DIEGO COUNTY.
P.N. 02-040
MASSON & ASSOCIATES, INC.
Planning • Engineering • Surveying • Townscape
CALIF. COORD. INDEX: 322-1812(X)

Elevations. The elevations onsite ranging between approximately 3,100 feet to 4,150 feet above sea level.

Climate

The property is located approximately 38 miles inland from the Pacific Ocean. The weather is influenced by interior air in a 24 hour period. Typical annual temperatures range from winter lows of 27 degrees to summer highs of 100 degrees.

The following scenarios are typical of the area and are to be considered worst case assumptions:

Summer
South, Southwest, Northwest and West wind condition can result in the following fuel moistures.

1-hour fuel moisture.....4%
10-hour fuel moisture.....6%
100-hour fuel moisture.....8%
Live woody fuel moisture.....80%

Fall = back down from a Santa Ana late fire season
South, Southwest, Northwest and West wind condition can result in the following fuel moistures.

1-hour fuel moisture..... 2%
10-hour fuel moisture.....3%
100-hour fuel moisture.....5%
Live woody fuel moisture.....50%

Santa Ana Wind Condition two to four times a year

1-hour fuel moisture 2%
10-hour fuel moisture.....3%
100- Hour fuel moisture.....5%
Live woody fuel moisture.....50%

The ownership of the area is private. Onsite vegetation consists of non-native dry climate grasses and Diegan Coastal Sage Scrub and Mixed Chaparral, off site consist of a mix of the same type of vegetation and are rural in nature with homes ranches and farms with groves.

Chapter 2 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent urbanized areas or where residences are intermixed with wildlands?

The project is located next to Diegan Coastal Sage Scrub and non-native grasses; however the new structures will be separated from the native vegetation by more than 100 feet of modified fuel selected from the San Diego County Acceptable Plant List. With recommended modifications the project would not expose people or structures to a significant risk of loss, injury or death.

Would the project result in inadequate emergency access?

The current map does show adequate emergency access. "The plan includes improvements to the substandard roads and adds an access road going east to Pine Hills Road to SR 78/79, and on the west end adds an access that continues north on Daley Flat Road to Hoskings Ranch Road to SR 78/79. All roads will be improved to the County Consolidated Fire Code, and San Diego County Private Road Standards (DPW) access road requirements of 24 foot all-weather paved surface. Both the 24 and ~~35~~ 34 lot designs will use the Tenya Road to Pine Hills Road to SR 78/79 and the Daley Flats Road to Hoskings Ranch Road to SR 78/79."

Would the project result in substantial adverse physical impacts associated with new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance ratios, or other performance objectives for fire protection?

The project will not adversely affect the fire district by the creation of new lots.

Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The water for firefighting will come from onsite water tanks and wells as per the San Diego County Fire Code minimum recommendations.

Chapter 3 ANTICIPATED FIRE BEHAVIORS IN THE VICINITY

The anticipated fire behavior onsite is expected to be significant. Flames in the unmodified non-native grasses on and off-site will be approximately 12.7 feet in height. The proper clearance of 30 feet next to the road sides should allow for egress in the event of a fire (non-native grasses with 12.7 foot max flame length). The flame length from the unmodified Diegan Coastal Sage Scrub on and off-site will be approximately 51.1 feet. Unmodified Southern Mixed Chaparral will produce 56.0 ft flame lengths. The new structures will be 100 feet from this vegetation and mitigated with enhanced wildland

urban interface construction as per Chapter 7A San Diego County Building Code. The project will meet the requirements of the California Fire Code, California Code of Regulations Title 14, (enforced by San Diego County Fire Authority) County Fire Code and the County Consolidated Fire Code.

Chapter 4 ANALYSES OF PROJECT EFFECTS

The development of this area will reduce the spread of a wildfire by reducing the fuel loading, along with the new water supply (new water tanks for fire fighting); improving of roads in the project and clearing of the home site will provide additional fuel breaks in the area, this will be a major fuel break that will buffer and slow down a fire in the area and the dedication of a site for a new fire station. The Hosking Development will fall within the guidelines of the San Diego County General Plan for emergency response time objectives.

All Roads shall meet the dead end road 2640 maximum allowable distance. There is an alternative proposal (35 lot proposal) that will have adequate access and meets the dead end requirements of the fire code. With the fuel modification 30 ft along the all roads and driveways, with the addition of secondary access and with 100 ft of fuel modification around the structures the project would not expose people and structures to a significant risk. This TM will fall within the guidelines of the San Diego County General Plan for emergency response time objectives. The project with 34 structures will result in moderate impact on the Julian/Cuyamaca Fire Protection District. This will be mitigated with a proposed 5 acre parcel on the northeast corner at the pl for parcels 10 and 12 for a fire station that will access off of SR 78/79. A fee or other funding mechanism may be applied to support a fire protect district. The water supply for this proposed project will come from proposed water tanks supplied with water from wells.

4.1 Adequate Emergency Services

Initial Fire Department response is from Julian Cuyamaca Fire Department Station No. 56 which is located at 2645 Farmer Road, Julian; this station is staffed by 2 firefighters (two full-time paid on the ambulance and volunteers on the engine). Apparatus include one type-two engine, one type-three engine and one rescue truck. Travel distance to the most remote cul-de-sac (23/24 for the 24 lot plan, and lot 34 for the 34 lot plan) is 4.43 miles From JCFPD Headquarters via Pine Hills or 9.15 minutes, and 5.1 miles via Hoskings Ranch Daley Flat or 9.32 minutes. These times do meet General Plan requirements. (Travel from the CalFire Julian Station adds 0.5 miles and 0.85 minutes to these Calculations.

CAL/FIRE Julian Station and Cuyamaca Station have an automatic aid agreement Julian Cuyamaca Fire Protection District and have minimum staffing of 3.0 full time fire fighters year round 24 hr. 7 days week. The CAL/FIRE station is located at 587 SR 78/79 and is approximately 6 miles from the farthest proposed parcel in the project. Travel time from this fire station is approximately 11 minutes per NFPA 1142. The project is west of Julian and has 8 acre zoning that will be classed under the rural category which allows for

a 20 minute response time under the General Plan.

4.2 Fire Access

The proposed fire access road is designed to allow for egress for the public and fire fighting access Tenaya Road to Pine Hills Road to SR 78/79 for the Fire Department. There is a second access off of SR 78/79 Hoskings Ranch Road to Daley Flat Road. The fuel modification on or adjacent to the road adds to the reduction of the spread of the fire and is part of the overall Fuel Modification Plan. All new roads and driveways shall have a minimum clearance of 30 feet on each side. Turnarounds and cul-de-sacs shall comply with Appendix B. Angle of approach shall not exceed 7 Deg. The proposed access roads shall meet or exceed all San Diego County DPLU and Julian Cuyamaca Fire Protection District requirements by complying with the San Diego County Fire Code.

All gates shall comply with section 503.6 of the San Diego County Consolidated Fire Code. All roads and driveways shall be all-weather surface suitable for travel by a 50,000 lb. fire apparatus. All driveways or roads that exceed 15% of grade will be Portland cement concrete with deep broom finish perpendicular to the direction of travel to enhance traction; no grade will exceed 20% of grade. All gates shall comply with sac. 503.6 Of the San Diego County Fire Code.

Secondary Access

Egress from the project will comply with San Diego County Standards for Private Roads (DPW) and the County Consolidated Fire Code. No dead-end roads will exceed the maximum allowable 2640 feet (both project proposals). Both project designs will utilize Daley Flat Road and Hoskings Ranch Road, which will be improved to County Private Road Standards. The Julian Cuyamaca FPD Fire Code specifies an all-weather approved paved surface.
Both project designs will be using Tenaya Road to Pine Hills Road and Daley flat Road and Hoskings Ranch Road for access. Easement documents for Daley Flat Road and Hoskings Ranch Road are in Appendix I. (Easement language was not evaluated by the County Fire Marshal.)

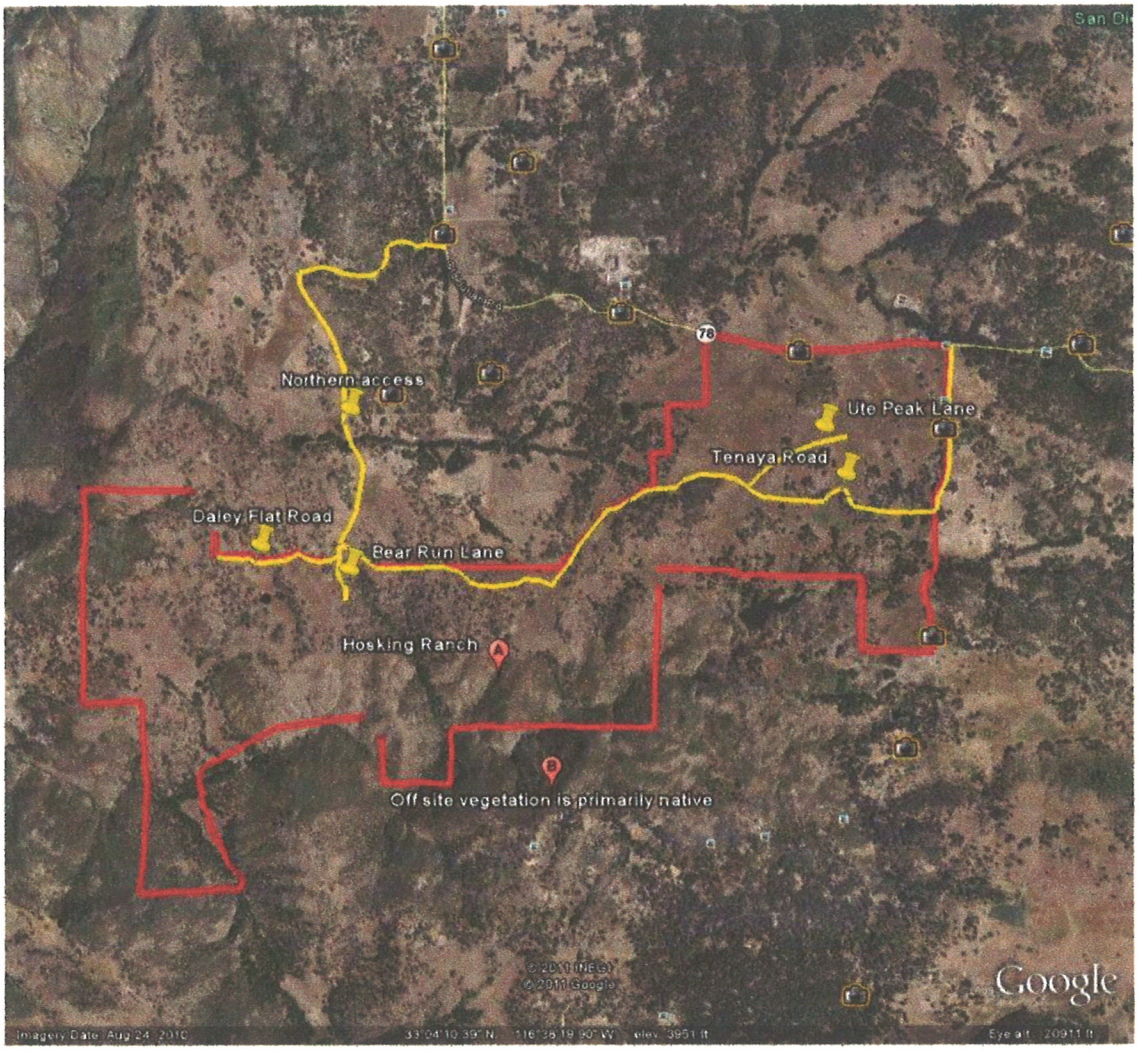


Figure 4.2.1 offsite access

4.3 Water

4.3.1 Private Water

"The water supply for this proposed project will come from wells". "Storage required for firefighting will comply with the following conditions as per Table 507.2.2, County Consolidated Fire Code.

WATER TANK REQUIREMENTS Table 508.2.2 County Fire Code

Building Square Feet	Gallons Per Minute Water Flow	Capacity Gallons	Duration Minutes
Up to 1,500	250	5,000	20
Over 1,500	250	10,000	40

When the exposure distance is one hundred feet (100') or less from an adjacent property, or where additional hazards or calculated fire flow exists, the required water storage may be modified by the fire code official.

1. Tank elevation shall be equal to or higher than the fire department connection on the premises. Regardless of domestic use, all tanks shall be equipped with a device that will ensure that the tank contains the designated amount of water for fire flow duration as determined by the FAHJ. Tank size may be increased to serve multiple structures on a single parcel.

2. Supply outlet shall be at least 4 inches in diameter from the base of the tank to the point of outlet at the fire department connection. The fire department connection shall be at least one 4-inch National Standard Thread (male), reduced to one 2½ inch National Standard Thread (male). Additional outlets may be required.

3. Location of fire department outlet shall be shown on the plot plan when submitted to the FAHJ. Consideration will be given to topography, elevations, and distance from structures, driveway access, prevailing winds, etc.

4. The outlet shall be located along an access roadway and shall not be closer than 50 feet or further than 150 feet from the structure.

5. All exposed tank supply pipes shall be of an alloy or other material listed for above ground use. Adequate support shall be provided.

6. Water storage tanks shall be constructed from materials approved by the fire code official and installed per manufacturer recommendations.

7. The fire code official may require any necessary information to be submitted on a plot plan for approval.

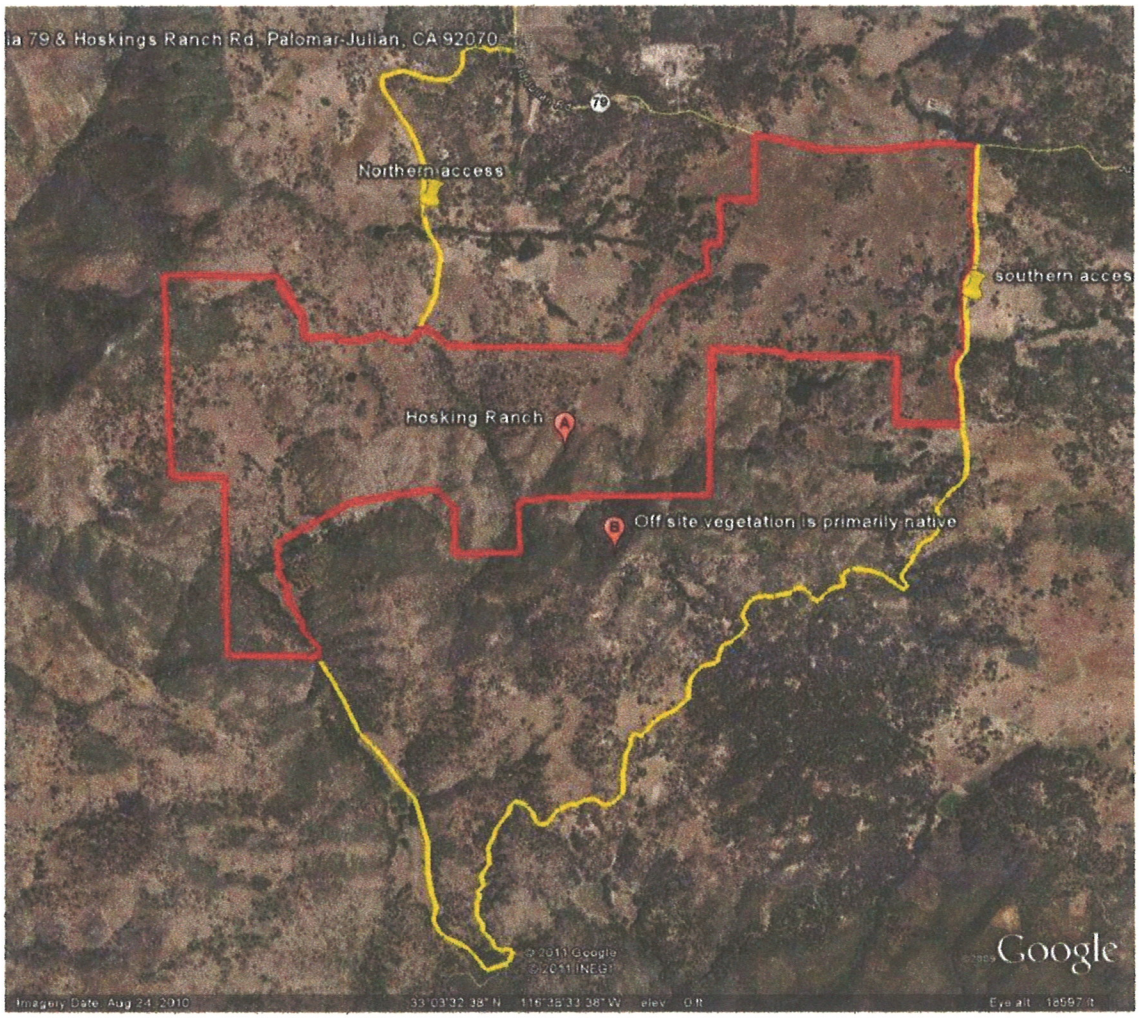
8. Vessels previously used for products other than water shall not be allowed.

4.4 Ignition Resistant Construction and Fire Protection Systems

All new structures shall be equipped with the following interface features:

1. Roofs will be a Class "A" noncombustible material and shall meet the DPLU standards.
2. Eaves and balconies will be of noncombustible material and meet the San Diego County Building Code.
3. Exterior walls will be a noncombustible or ignition resistive material and meet the San Diego County Building Code Chapter 7A.

4. All habitable structures and attached garages will be equipped with automatic fire sprinklers per the County Consolidated Fire Code requirements (NFPA-13D). All sprinkler systems shall be approved by the Julian Cuyamaca Fire Protection District prior to installation.
5. All future outbuildings must be approved by the Julian Cuyamaca Fire Protection District prior to installation.
6. All structures will comply with the wildland area structural requirements of the County Building Code Chapter 7A in affect at the time of a building permit application.



Off site vegetation map Figure 4.5.1

4.5 Fire Fuel Assessment

The site has the potential to experience a vegetation fire; this is based on the type of

vegetation and its continuous nature, Santa Ana winds, high temperatures, low humidity and drought conditions. Onsite vegetation consists of Diegan Coastal Sage Scrub (Model sh5 (145) fuel). The fuel load for sh5 fuel is 3.6 tons per acre maximum with a flame length of 51.1 feet. The onsite Southern Mixed Chaparral fuel model sh7 has a maximum fuel load of 5.3 tons per acre with a flame length of 56 ft. The non-native grasses with a fuel load of .74 tons per acre and produce a flame length of 12.7 ft. The surrounding property is rural in nature and is covered with some non-native grassland, Diegan Coastal Sage Scrub, Chaparral and scattered trees.

4.6 Fire Behavior Modeling

BehavePlus Wildfire Modeling

The BehavePlus Fire Modeling System (Version 4.0.0) developed by the U.S. Forest Service Rocky Mountain Research Station is the generally accepted software for modeling large-scale wildfire behavior and characteristics. The BehavePlus System was designed to evaluate a variety of wildfire variables for large wildland fires including surface fire spread, safety zones, fire containment, spotting distance crown scorch and probability of ignition. Two aspects of this program (surface fire spread and safety zone) have been utilized to assist in determining acceptable fuel modification requirements. The BehavePlus Program coupled with onsite and surrounding area vegetation, access, slope and weather conditions are the basis for the following.

The BehavePlus Fire System has been run for the following worst case scenarios:

60 MPH wind, 100-degree ambient air temperature, 2 % dead fuel moisture, 50 % live fuel moisture and 50% max slope with 25 % average slope aspect. The model was run for three fuel model scenarios, as the project contains varying types of fuels.

It should be noted that the BehavePlus Model does not and cannot include all variables associated with a specific site and regime, and adjacent mixed land uses can influence the results.

The BehavePlus Model run results are summarized in Table 1.

Table 1

BehavePlus Fire Model

Fuel Model sh5 High Load; Dry Climate Shrub (S) (145)

Wind Speed & Direction	Mid-flame	Rate of Spread	Fire Line Intensity	Flame Length
60 mph N, NE, E	30.0 mph	790.7 Ch/h	29331 Btu/ft/s	51.1 ft.

Up-slope spotting distance= 3.0 miles

Fuel Model 1 Short Grass (S)

Wind Speed & Direction	Mid-flame	Rate of Spread	Fire Line Intensity	Flame Length
60 mph N, NE, E	24.0 mph	665.6 Ch/h	1415 Btu/ft/s	12.7 ft

Up-slope spotting distance= 1.1 miles

Fuel Model sh7 very high load dry climate shrub (S) (147) Southern Mixed Chaparral

Wind speed & Direction	Mid-flame	Rate of Spread	Fire Line Intensity	Flame Length
60 mph N, NE, E	30.mph	947.1 Ch/h	35899 Btu/ft/s	56.0 ft.

Up-slope spotting distance= 3.2 miles

The Behave Plus coupled with the expected offshore Santa Ana wind direction, anticipated down slope fire line aspect and relatively low fuel vegetation within the urban wildland interface areas, and existing fuel modified areas serves as a basis for formulation of the recommended Fuel Modification Zone locations.

4.7 Defensible Space and Vegetation Management

Fuel Management Zones:

All parcels

As proposed the residential structure from the structure to a point 50 feet in all directions shall be maintained as Zone 1 and from a point 50 feet from the structure to 100 feet shall be maintained as Zone 2. Zones 1 and 2 shall be clearly and permanently marked for annual maintenance.

All roads and driveways shall have 30 ft of clearing on both sides of the road or driveway and shall comply with zone 3.

Note: All Fuel Modification Zones must be delineated with permanent markers until such times as they are no longer needed as determined by the Fire Marshal. The most reliable markers are metal fence posts with a baked on painted finish (day glow orange on the top half).

Fuel Management Zone 1:

Zone 1 is the first 50 feet or as otherwise indicated; this is an area where native vegetation has been removed, irrigated and planted with drought-tolerant and fire resistant plant material. Plant selection shall be from Appendix A, (The San Diego County Acceptable Plant List).

The purpose of Zone 1 (set back zone) is to provide a defensible space for fire suppression forces to protect structures from radiant. The following shall be part of fuel management of this zone:

1. No combustible construction, groves, firewood, propane tanks, fuel or combustible native or ornamental vegetation shall be allowed within the 50 foot set back Zone 1 or within 30 feet of the edge of slopes.
2. Mature trees (>18') to be limbed up or canopied 6' to 8' from ground level.
3. No tree limbs within 10' of chimney outlets or dead limbs overhanging structures.
4. Spacing between mature tree canopies must be as follows:
   A. Slopes 0-20 % ----10 Feet.
   B. Slopes 21-40 % ----20 Feet.
   C. Slopes > 41 % ----30 Feet.

The minimum horizontal space between the edges of shrubs

A. Slopes 0-20%----2 times the height of the shrub.
B. Slopes 21-40%----4 times the height of the shrub.
C. Slopes > 40%----6 times the height of the shrub.

The minimum vertical space between the top of the shrub and the bottom of the lower tree braches is three times the height of the shrub.

(Gilmer, M. 1994 California Wildfire Landscaping, adapted by the State Board of Forestry and Fire Protection on February 8, 2006.)

Fuel Management Zone 2

This Fuel Management Zone will be the area between 50 feet to 100 feet of the structure. The landscape plans shall include methods of erosion control to protect against slope failure. The following shall apply to Zone 2:

1. Clear all of the existing native combustible vegetation including all dead and dying. This area must be modified so all combustible native vegetation does not exceed a height of 1 foot and does not occupy more than 50% of the total square footage. All grasses shall be maintained at a height of no more that 4 to 6 inches. Trees may remain provided that the horizontal distance between crowns of the adjacent trees is not less than 10 feet. If non-native vegetation is added, it must be from the acceptable plant list from the County of San Diego and maintained the same as zone 1.
2. Orchards, groves and vineyards shall be maintained as per sec. 4707.3.2 of the San Diego County Consolidated Fire Code adopted October 28, 2011.
3. Fire resistive plant materials are also required in Zone 2 to control soil erosion and/or to reduce vegetation mass near the wildland interface.
4. Plant spacing will be the same as noted for Zone 1.
5. All plants used in Zone 1 and 2 comply with the San Diego County Acceptable Plant List, Appendix A.

Zone 3 roadside fuel modification

Zone three is the area from the edge of the road or driveway to a point 30 out on each side of the road.
All vegetation must be maintained at a height of 4 to 6 inches with all dead and down removed. If plants are added they must be from the San Diego County Acceptable plant list (Appendix A) and maintained as zone 1.

The off-site fuel management along Daley Flat Road and Hoskings Ranch Road shall be pledged memorialized and attached to the parcels through a Private Road Maintenance Agreement thru DPW.

Landscape Requirements/Restrictions

The landscaping within the Fuel Modification Zones must be approved by the Julian Cuyamaca Fire Protection District and shall include low fuel, drought tolerant type vegetation from the list adopted by the County of San Diego (see Appendix A).

Fuel Modification Zone Maintenance Requirements

Fuel Modification Zones must be maintained in a manner that will fulfill the intent of the Fuel Modification Plan and meet the requirements of the Julian Cuyamaca Fire Protection District. Maintenance will include initial planting, weeding, irrigation installation, maintenance and plant pruning; removal of dead and down vegetation, and the replacement of plants as required.

The following will also apply to this project:

1. Each lot owner is personally responsible for all irrigation and landscaping Fuel Treatment Zones within their property boundaries.
2. The Julian Cuyamaca Fire Protection District will hold each lot owner accountable for enforcement of all wildland fire protection issues discussed in this plan.
3. Each lot owner shall not allow trash dumping or disposal of any yard trimmings in the Fuel Treatment Zones.
4. The Julian Cuyamaca Fire Protection District or its designated representative shall decide any disputes related to individual lot landscaping or fuel treatment, with respect to interpretation of the Fire Protection Plan. Decisions shall be final and binding on the lot owner.
5. Should modifications to the Tentative Map Plans occur, any and/or all of the Fire Protection Plan may be revised at the discretion of the Julian Cuyamaca Fire Protection District and the San Diego County Fire Marshal.
6. All exterior boundaries of Zones 1 and 2 shall be permanently marked on the ground for purposes of guiding annual fuel management maintenance and inspection operations. The most reliable markers are steel fence post with a baked on painted finish. The upper half of the above ground portion of the fence post is then painted a bright "day glow" orange to improve visibility. These Fuel

Treatment Zone markers must be spaced so that the markers on each side of an installed marker can be seen from that marker.

4.8 Cumulative Impact Analysis

This and other projects may have a cumulative impact on the ability to protect residences from wildfires. Over time with this project and other development in the area the population in rural areas will increase, which may increase the chances of a wildfire and increase the number of people and structures exposed to the risk of loss, injury or death.

Property taxes and other currently applicable fees generated by the project may not adequately fund fire services.

This project must participate in sufficient mitigation measures that will assist the Julian Cuyamaca Fire Protection District in providing fire and medical emergency response to this project and contiguous neighborhoods based upon travel time, fire protection equipment and resourses. This participation may include and is not limited to a mello roos funding district or similar funding mechanism authorized by the Julian Cuyamaca Fire Protection District.

Chapter 5 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

The fuel modification will reduce the threat to the structure from the vegetation onsite. The structure will be designed with enhanced fire resistive construction as per the County Building Code Chapter 7A. The driveway and access roads will have 30 feet of clearing (fuel modification) on both sides. The structure will have 100 feet of fuel modification. The fire hydrant and the on site road improvements will allow for fire fighting access. This project will have water tanks installed for firefighting.

Chapter 6 CONCLUSIONS

The development of this area will reduce the spread of a wildfire by reducing the fuel loading, and the addition of water supply (water tanks); improving of roads in the project and the clearing of off-site roads serving it, and the clearing of home sites will provide additional fuel breaks in the area. A two tiered Fuel Modification Zone system is proposed to create an adequate fire safety buffer along the proposed development areas and access roads, which would be defensible space in case of a wildfire. The Fuel Modification Zone recommendations are based upon a combination of BehavePlus modeling data, onsite vegetation, access, surrounding area fuel conditions, slope and worst-case weather conditions. The Fuel Modification Zones have been designed to meet the requirements of the Julian Cuyamaca Fire Protection District and San Diego County DPLU Fire Authority. The proposed mitigation will reduce the significance to a "less than significant" status in accordance with guidelines.

(Note that the County Fire Authority, Public Safety Group, is now the author of the County Consolidated Fire Code, and the County Fire Code Official.)

Chapter 7 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

Mark Thomson TRS Consultants
Julian Cuyamaca Fire Protection District.
Lamont Landis - Principal Author (is on the San Diego County list of approved consultants)

Chapter 8 REFERENCES

1. Behave: Fire Behavior Prediction and Fuel Modeling – Burn Subsystems. Part 1 General Technical Report INT-194. January 1986. Patricia L. Andrews USDA Forest Service, Intermountain Station, Ogden Utah, 84401.
2. Behave: Fire Behavior Prediction and Fuel Modeling- Burn Subsystem Part 2. General Technical Report INT-360. May 1989 Patricia L. Andrews and Carolyn H. Chase. USDA Forest Service. Intermountain Station, Ogden, Utah 84401.
3. BehavePlus Fire Modeling System, Version 3.02 Patricia L. Andrews, Collins D. Bevins and Robert C. Seli. US Forest Services, Rocky Mountain Research Station, Fire Sciences Laboratory. Missoula MT.
4. How to Predict the Spread and Intensity of Forest and Range Fires. General Technical Report INT-1943 May 1989. Richard C. Rothermel, USDA Forest Service Intermountain Station, Ogdan Utah, 84401.
5. 2007 California Fire Code, California Code of Regulations Title 24 Part 9. Which is based on the 2006 International Fire Code,
6. County of San Diego Fire Code and Building Code and Amendments Effective January 30, 2008. Section 96.1.001
7. National Fire Protection Association NFPA 1142 Water Supplies for Suburban and Rural Firefighting 2001 Edition.
8. International Code Council Urban-Wildland Interface Code 2006 Edition
9. Standard Fire Behavior Fuel Models: A Comprehensive Set For Use with Rothermel's Surface Fire Spread Model. Authors Joe H. Scott and Robert E. Burgan General Technical Report RMRS-GTR-153 USDA Forest Service Rocky Mountain Research Station.
10. Aids for Determining Fuel Models for Estimating Fire Behavior. By Hal E Anderson USDA Forest Service General Technical Report INT-122
11. General Guidelines for Creating Defensible Space Adopted by The State Board of Forestry and Fire Protection on February 8, 2008