

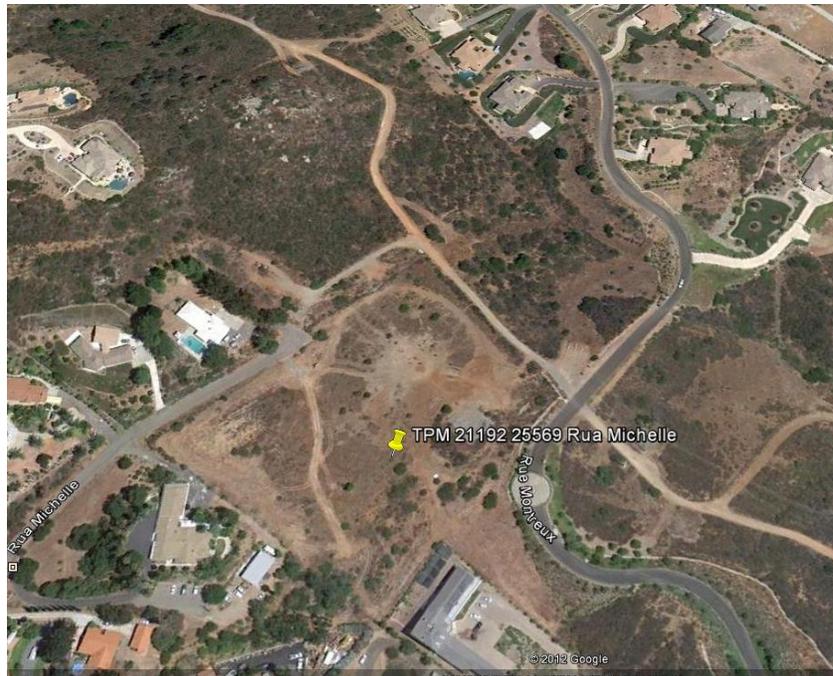


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RUA MICHELLE LOT DIVISION

25569 RUA MICHELLE, APN 187-520-11

TPM 21192; ER 02-08-054A

May 2012 (REVISED MARCH 2014)

APPLICANT: SCSS DEVELOPMENT, LLC

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Prepared for the County of San Diego

by

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Chapter 1. INTRODUCTION

This Fire Protection Plan (FPP) has been prepared for the Rua Michelle Lot Division, located at 22569 Rua Michelle, Escondido, CA. 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 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 methods of treatments 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.

1.1 Project Location, Description and Environmental Setting

1.1.1 Project Location

TPM 21192, 22569 Rua Michelle, is located in the unincorporated area of San Diego County commonly referred to as the Jesmond Dene community. The Jesmond Dene community is north of the City of Escondido, west of the unincorporated community of Valley Center, east of the City of San Marcos and south of the Deer Springs community and Lawrence Welk Resort and Champagne Village developments. Jesmond Dene is approximately 14.64 miles east of the Pacific Ocean, 44.5 miles north of the United States-Mexican border and 17.35 miles south of the San Diego-Riverside County borders. Jesmond Dene is on the east side of Interstate 15, one of two major north-south freeways connecting San Diego County with Riverside, San Bernardino and Los Angeles Counties. The community is within the jurisdictional boundaries of the Deer Springs Fire Protection District, which serves an estimated 13,000 residents in a forty-seven (47) square mile area.

The project site is located at the eastern terminus of Rua Michelle, a private residential street having an east-to-west configuration. Rua Michelle connects to Jesmond Dene Road, a two lane public paved right-of-way, approximately two miles south of the combined Center City Parkway/Interstate 15 and Deer Springs Road/Mountain Meadow Road intersections and one mile northwest of the North Broadway and Jesmond Dene Road intersection. The project site is on the south side of the Rua Michelle right-of-way and immediately adjacent to a dedicated San Diego Gas & Electric Company/Sempra Energy power transmission right-of-way that has a north-to-south configuration. The project site is at an elevation of 930 feet above sea level at GPS coordinates 33-10-32.2 North and 117-6-14.6 East.

1.1.2 Project Description

The project site, identified by San Diego County Assessor's Office as APN 187-520-11-00, is a 5.67 acre parcel currently zoned RR-1. The project site is at the eastern terminus of Rua Michelle on the south side of the private road right-of-way. The entire parcel is currently undeveloped, vacant and covered with natural native and invasive vegetation types. The project site is in the North County Metro Community Planning Area.

The undivided project parcel's north side frontage measures approximately 558 feet long and south frontage is approximately 477 feet. The western property line is approximately 560 feet long and the eastern property line is approximately 400 feet long.

There is existing development of single family dwellings on two sides of the proposed project site, with partial residential development on the north side. The northeast corner of the project site is exposed to a dedicated open space area on a steep hillside with unmanaged heavy natural vegetative fuels. A gated community of newer single family dwellings has been developed east of the project and exhibits fair compliance with existing defensible space regulations. The gated community is separated from the project site by a 300 foot wide Sempra Energy power transmission right-of-way that extends in a south-to-north configuration. Natural vegetative fuels beneath the twin overhead conductor tower paths appear unmanaged and fuel loading varies between medium and heavy fuel types.

The developer proposes a Lot Division project that will produce four separate parcels. Parcel 1, at the northwest corner of the project site, proposes a gross area of 1.29 acres and a net area of 1.03 acres. Parcel 4 is immediately east of Parcel 1, proposes a gross area of 2.11 acres while netting 2.06 acres. Parcel 3, a flag configuration lot, is immediately adjacent to Parcel 3 and covers the southeast corner and central portions of the project site. Parcel 2 is east of the proposed twenty-four foot (24') wide and 220 foot long easement providing access to Parcel 3 and immediately north of the main body of Parcel 3 at the northeast corner of the project site. Parcel 2 proposes a gross area of 1.21 acres while netting 1.0 acres.

The project is currently undeveloped and covered with a variety of natural vegetative fuels. There is evidence of a past attempts to develop the parcel. A knoll on the northeast corner of the project site has been graded to provide a building pad. A deteriorated graded dirt road intersects near the Rua Michelle terminus and moves in a southeasterly direction to provide access to the graded pad. Another dirt access road wyes from the hillside access road and moves in a southwestern direction across the parcel toward the southwest corner of the property. There is a paved parking pad near the southeast corner of the parcel. Aerial photographs of the project site reveal a vacant parcel until approximately 1995. From 1996 to January 2006, the aerial pictures reveal buildings or structures on the paved parking pad

near the southeast corner of the property. After January 2006, the buildings or structures are no longer visible.

1.1.2.1 Proposed Project Use

The Lot Division proposal is intended to provide four single family dwelling parcels. The Preliminary Grading Plan for TPM 21192 indicates that each proposed parcel provides a building pad measuring approximately forty feet (40') wide by eighty feet (80') long that could accommodate a building of up to 3200 square feet at ground level. The actual size of proposed structures has not been determined at the time of the writing of the Fire Protection Plan.

1.1.2.2 Location of Easements

1.1.2.2.1 – Private Road and Utilities Easement – an eighty foot wide (80') private road easement runs parallel to the north property line of the project site. Forty feet (40') of the private road easement is south of the centerline of the existing private road and extends onto the north side and to the northeast corner of the TPM 21192 project site. Recorded on November 7, 1980 as Instrument number 80-376581 and represented by Hexagon symbol "C" on the Tentative Parcel Map.

1.1.2.2.2 – San Diego Gas & Electric Easement – There is a ten foot (10') wide easement along the north property line of the project site. The easement makes a ninety degree (90°) turn to the south at the northwest corner of the project site and follows the west property line in a southerly direction. Recorded on July 10, 1979 as Instrument number 79-284917 and represented by Hexagon "A" on the Tentative Parcel Map.

1.1.2.2.3 – Pacific Telephone and Telegraph Company Easement – There is a six foot (6') easement along the north property line of the project site. The easement makes a ninety degree (90°) turn to the south at the northwest corner of the project site and follows the west property line in a southerly direction. Recorded on July 13, 1979 as Instrument number 79-291402 and represented by Hexagon "B" on the Tentative Parcel Map.

1.1.2.2.4 – Valley Center Water District Easement – the Tentative Parcel Map indicated a water district easement of non-specified dimensions at the southwest and southeast corners of the project site. Recorded on May 31, 2001 as Instrument number 2001-0353529 and represented on the Tentative Parcel Map as Hexagon "D".

1.1.2.3 – Open Space and Riparian Areas

There are no planned or existing Open Space or Riparian Areas on the project site.

1.1.2.4 – Off-Site Improvements

1.1.2.3.1 – Roads

1.1.2.3.1.1 - Rua Michelle

Rua Michelle is a private road, with an eighty foot (80') wide easement in a east to west configuration. The existing right-of-way is currently paved with asphaltic concrete with an improved width of approximately twenty-four feet (24'). Rua Michelle parallels the northern property line of the project site and extends to the west for a distance of approximately 1200 feet, where it intersects with Jesmond Dene Road, a two lane publicly maintained two lane road with an improved paved width of twenty-eight (28') feet.

1.1.2.3.1.2 – Rue Montreux

Rue Montreux is south and east of the project site. It is a privately maintained paved road with a forty foot (40') wide right-of-way and an improved paved width of twenty-four (24') feet. The Rue Montreux easement is immediately adjacent to the southeast corner of the project site. Rue Montreux has a generally south to north configuration and provides access to a gated community of single family dwellings northeast of the project site that was developed in 2004.

1.1.2.3.2 – Utilities

1.1.2.3.2.1 - San Diego Gas & Electric/Sempra Energy Transmission Right-of-Way

Immediately adjacent to, and running parallel to, the east property line of the project site is a 300 foot wide, 15.94 acre parcel dedicated to an overhead power line transmission right-of-way. The parcel has a south to north configuration. There are two overhead transmission lines stretching in a south to north configuration. A fourteen (14') foot wide semi-improved dirt maintenance access road runs parallel with the Project Site's eastern property line and continues in a northerly direction off-site. The native and invasive species natural vegetation growing on the right-of-way parcel is not actively managed to control fire spread to adjacent properties. The native vegetation on the energy transmission right-of-way has tight compactness, is contiguous with high fuel loading and ranges in height between three and fifteen feet.



***SDGE 300' Wide Transmission Line Right-of-Way Adjacent to East Property Line
Looking South – Project Property Line on Right Side***



Typical Fuel Loading and Height in SDGE Transmission Line Right-of-Way

The transmission line corridor is identified as Sempra Energy/SDGE TL-688. The western transmission line is rated at 69 kilovolts (69,000 volts) and the eastern transmission line is rated at 238 kilovolts (238,000 volts).

The conductor strand for the first overhead energy transmission line is approximately ten (10') feet east of the project's eastern property line. The western most overhead conductor strand of the second energy transmission line is approximately fifty-six (56') east of the project property line and is separated from the project by the dirt utility maintenance road.

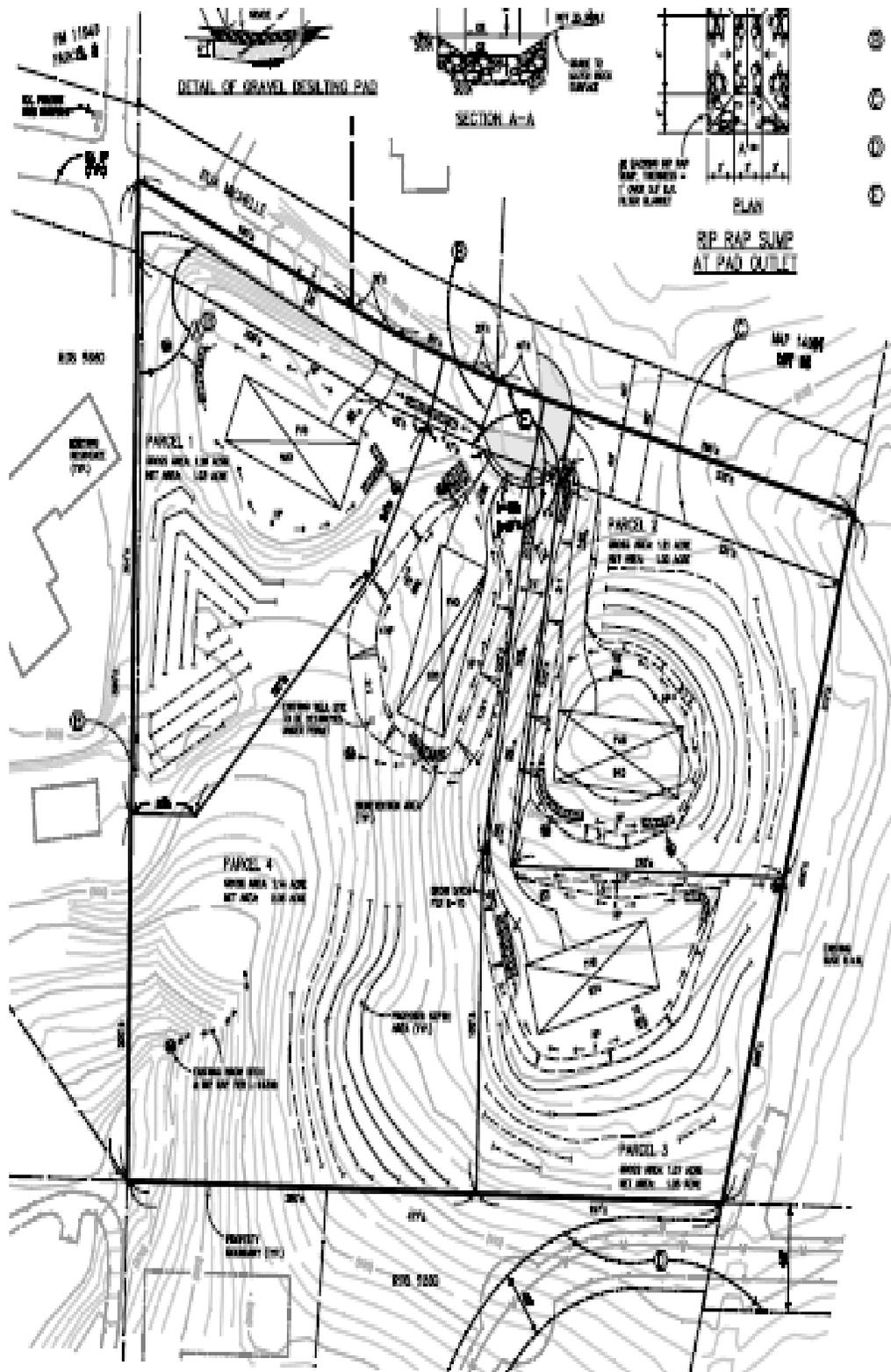


Figure 2 TPM 21192 Rúa Michelle Tentative Grading Plan

1.1.3 Environmental Setting

1.1.3.1 Dates of Site Inspections/Visits

Visit # 1 – Pre-assignment Visit and Evaluation – February 29, 2012

Visit # 2 – April 18, 2012 – Evaluate access, egress and evacuation routes; evaluate vegetative fuels; evaluate off-site vegetation and off-site Sempra Energy right-of-way; evaluate water distribution and hydrant systems

Visit # 3 – April 27, 2012 – Evaluate access, vegetation clearance for off-site transmission line towers.

1.1.3.2 Topography

The project site is located at the top and flanks of a hillside east of Jesmond Dene Road that has a elevation rise of approximately eighty (80'). Immediately north of the project site is a prominent hillside with a 120 foot elevation rise above the project site over a distance of 346 feet for a slope of approximately 28.62%.

The project site proposes four parcels; three of the parcels (1,2 and 3) have average slopes below 14%. Parcel 4, at the southwest corner of the project has average slopes of 19.3% (see Slope Table, Figure 1, *TPM 21192 Rua Michelle Tentative Parcel Map*).

Parcel 1 is at the northwest corner of the project site. It has fairly gentle slopes on the south side that rise to a fairly level plateau, which drop sharply with manufactured cut-bank slopes to the Rua Michelle right-of-way on the north side of the site. The manufactured cut-banks have measured slopes ranging from 32 to 44%.



Parcel 1 from Southeast

Parcel 2 is at northeast corner of the project site. There is a prominent knoll on Parcel 2 with a rise of approximately twenty (20') from the level of the road right-of-way on the northern property line. The top of the knoll was previously graded relatively flat as a building pad. Parcel 2 has average slopes of 13.47%.



Parcel 2 from South

Parcel 3 is a “flag lot” at the southeast corner of the project site. The northern portion of Parcel 2 is relatively flat and exhibits an asphalt paved area where aerial pictures of previous development on site reveal the presence of buildings and structures. Beyond the relatively flat plateau near the north and central portions of Parcel 3, the

topography slopes downward to the south, east and west. Parcel 3 has average slopes of 13.56%.



Parcel 3, from Northeast

Parcel 4 starts at the southwest corner of the project and extends north to the Rua Michelle right-of-way, forming the largest and central parcel on the proposed site. Parcel 4 has average slopes of 19.3% but presents the most diverse topography on the project site. There is a bowl-shaped depression near the southwest corner of the parcel, which is approximately fifty (50') below the road right-of-way. The depression transitions into a vee-shaped funnel, with relatively steep slopes, that has a southwest to northeast configuration extending to the northern side of the site and the road right-of-way.



Parcel 4 from Southeast



Parcel 4 from Northeast

1.1.3.3 Vegetation

The undeveloped project site is currently covered with native and invasive species annual grasses (Fuel Model 1), Short Pod Mustard (*Brassica geniculata*), laurel sumac (*Malosma laurina*), Sugar Bush (*Rhus ovata*), Cleveland Sage (*Salvia clevelandii*), Black Sage (*Salvia mellifera*), Coastal Sage (*Artemisia californica*) and manzanita (*Arctostaphylos*). There are examples of Mexican Fan Palms in the southwestern corner of the project site.

1.1.3.4 Fire History

According to the *Community Wildfire Protection Plan for the Communities in the Deer Springs Fire Protection District*, there has not been a significant vegetation fire in the District “in several decades.” According to the Community Plan, the last major fire occurred over thirty years ago and there has been no significant vegetation management during this period.

Information obtained from the CAL-FIRE FRAP (Fire & Resource Assessment Program) web-site indicates that there have been four major vegetation fires in the immediate vicinity of the project site since 1960:

1. “Outside Origin # 29 Fire”, July 23, 1960 – this fire was directly west of Rua Michelle on the west side of Interstate 15. It burned 745 acres and had an undetermined origin. The data does not identify structures that were damaged or destroyed.

2. “Moosa Fire”, August 22, 1969 – this fire was approximately two miles from the project site and burned 6944 acres. The data does not identify structures that were damaged or destroyed.
3. “Agency Fire”, unspecified date in 1978. This fire was approximately two miles east of the project site and burned 59 acres. The data does not identify structures that were damaged or destroyed.
4. “Deer Fire”, July 2, 1985 – 495 acres and burned over the entire project site. Aerial photography of the project site does not reveal the presence of structures until approximately ten years after this fire. The data does not identify structures that were damaged or destroyed.

The 2007 Witch and Poomacha Fire perimeters did not impact the project site.

1.1.3.5 Climate

Like most of Southern California, San Diego County and the project site has a Mediterranean Climate typified by warm to hot dry summers and mild to cool winters. Summer temperatures range between the mid-nineties and low one hundreds during the summer and fall months with occasional extraordinarily hot, dry spells similar to desert conditions occurring. Rainfall averages nine to fifteen inches at the lower elevations where the project site is located. Santa Ana winds are one of the most notable weather conditions in Southern California and San Diego County. Typically, these dry winds occur during the late summer and fall months (September through November) but may happen at any time during the year. With combined adiabatic (compression) heating (for every 1000 feet of elevation decline, temperature increases five degrees) and wind velocities exceeding 40 miles per hour, Santa Ana winds severely exacerbate wildfires, especially during drought conditions.

The U.S. Forest Service Weather Information Management System provides information about weather patterns in San Diego County. Daily afternoon weather observations in San Diego County were analyzed for forty-four years (1961-2005) at selected fire stations. San Diego County is divided into five climate zones between the coast and desert. Weather data between April and December are used to represent the annual fire season in San Diego County, with the most severe fire weather conditions in September and October. The following table was derived by the analysis of San Diego County’s Interior Climate Zone where the project is located.

Worst Case Weather and Burning Conditions, Interior Zone

Period	Temperature	Humidity	Wind Speed	Burning Index
Summer	90-109	5-9%	18 mph	153
Santa Ana	90-109	5-9%	24 mph	168
Peak	90-109	5-9%	56 mph	-

1.1.3.6 Land Ownership

The developed properties on north, west and south sides of the project site are residential parcels under private ownership. Immediately east of the project site is a 300 foot wide overhead power transmission right-of-way owned by SDGE/Sempra Energy. Immediately east of the Transmission Right-of-Way are additional privately owned residential properties. The project site proposes four privately owned residential parcels.

1.1.3.7 Existing Land Uses

With the exception of the Power Transmission Right-of-Way, the project site and surrounding parcels are zoned for rural residential properties. The hillside immediately north of the Project Site has been partially designated as an Open Space.

Chapter 2. GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

2.1 Emergency Services – Availability and Travel Time

2.1.1 Emergency Services Availability

Fire protection for the proposed project site is provided by the Deer Springs Fire Protection District. The Deer Springs FPD is located north of the City of Escondido and east of the cities of San Marcos and Vista in the north central unincorporated area of San Diego County. The District covers 47 square miles and serves a population of approximately 13000 residents. All-hazard fire protection and other emergency services are provided year-round from three dedicated District fire stations under a contract with the California Department of Forestry and Fire Protection (CAL-FIRE). A fourth CAL-FIRE wild land fire station is located near the northeastern part of the District, providing augmented apparatus and personnel resources. In addition to direct structural and wild land fire suppression services, the District also provides emergency medical care on the ALS-Paramedic level, fire prevention services and administrative services.

Two of the District's fire stations (FS 11 and 13) house a Type I structural engine and a Type III wild land engine. FS 12 houses a single Type I structural engine and Station 15 (CAL-FIRE "Miller" wild land station) houses a Type III wild land engine. Engine Companies are manned year-round by three (3) to four (4) career CAL-FIRE firefighters.

2.1.2 – Travel Time

Deer Springs FPD Fire Station 12, located at 1321 Deer Springs Roads, is the nearest Fire Station to the proposed project site. Travel distance from FS 12 to the farthest proposed parcel on Rua Michelle is approximately 2.46 miles. Per County of San Diego Fire Project Facility Availability Form DPLU 399F, Deer Springs FPD estimates that emergency response travel time is less than five (5) minutes.

2.1.3 – Fire Response Dispatch Patterns

The Deer Springs FPD provides the following First Alarm response patterns in its jurisdiction:

Residential Structure Fires – 2 Type I engines, 1 medic ambulance, 1 Battalion Chief, 1 Breathing Support Unit and 1 Rescue or Truck Company if available from automatic aid jurisdictions.

Vegetation Fires

Fire protection to Deer Springs is provided by a Cooperative Fire Agreement with CAL-FIRE. The Fire Protection District is designated as State Responsibility Area; Local Response Area fire suppression responses are augmented by a tiered wild land fire response dispatch pattern. Based on CAL-FIRE dispatch policies, Deer Springs FPD receives the following resources for a vegetation fire response:

Local Response Area –

Low Wildland – 2 engines (any resource type), 1 BC

Medium Wildland – 3 engines (any resource type), 1 BC

High Wildland – 5 engines (any resource type), 1 BC

State Responsibility Area –

Low Wildland – 2 Type III engines, 1 engine (any resource type), 1 BC

Medium Wildland – 4 Type III engines, 2 engines (any resource type), 1 BC, 1 dozer, 2 hand crews, 2 helicopters, 1 air attack, 2 air tanks

High Wildland – 6 Type III engines, 3 engines (any resource type), 1 BC, 2 dozers, 4 hand crews, 3 helicopters, 1 air attack, 3 air tankers

The District has Automatic Aid Agreements with the Cities of Escondido, San Marcos, Vista and the North Mutual Aid Zone of San Diego County. This places an additional six fire stations south and west of the project site with reasonable response times. The District is a signatory to the California and San Diego County Mutual Aid Agreements.

2.2 Emergency Access and Evacuation

Emergency access and evacuation routes to the Project Site are provided by a combination of private and publicly maintained streets and roads.

The project site is located at the eastern terminus of Rua Michelle, a paved privately maintained street with an improved width of approximately twenty-four (24') feet. Rua Michelle extends in an east to west configuration, with an elevation drop of approximately eighty (80) feet, to Jesmond Dene Road, a two lane publicly maintained road.



Eastern Terminus of Rua Michelle Adjacent to Project Site, Looking West

At the intersection of Rua Michelle and Jesmond Dene Road, residents are provided with two separate means of egress and evacuation.



Intersection of Rua Michelle and Jesmond Dene Road

Residents may proceed south on Jesmond Dene Road for approximately one mile and will arrive at the intersection of Jesmond Dene Road and North Broadway. This intersection is in the City of Escondido. North Broadway is a multi-lane (four lanes with center divider turn lane) street with a south to north configuration, and will provide access to multiple schools in the north-central portions of Escondido serving as temporary evacuation centers.



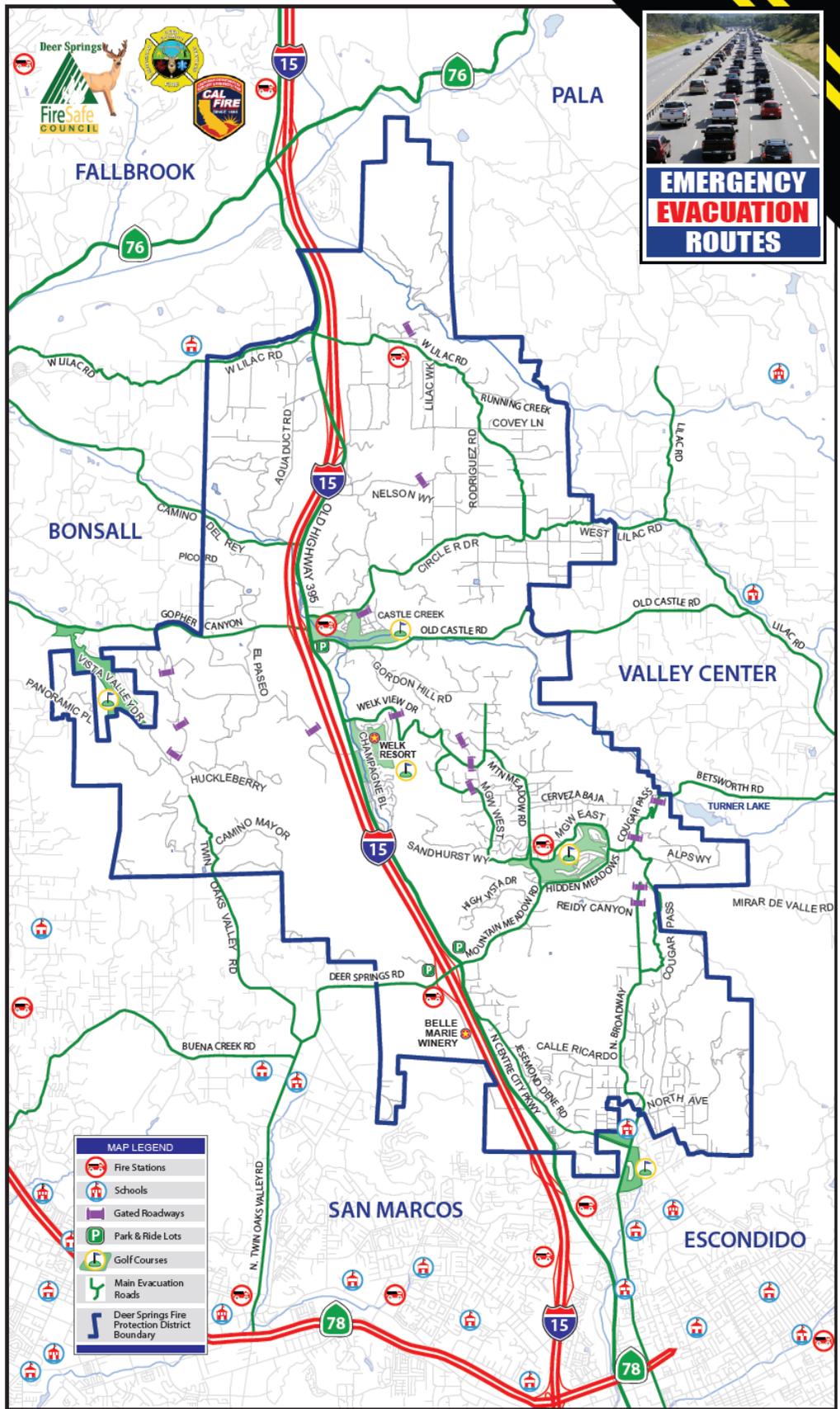
Jesmond Dene Road (looking North) South of Rua Michelle

Alternatively, residents may proceed north on Jesmond Dene Road for approximately 1.5 miles to the intersection of Center City Parkway. This intersection will provide an additional two directions of egress/evacuation travel.

Turning south on Center City Parkway, residents can proceed into Escondido after traveling approximately two miles. Center City Parkway leads into the established commercial district of the city; further travel south will provide access to Interstate 15 at the southern boundary of Escondido and the City of San Diego beyond.

Turning north of Center City Parkway, residents can travel an additional half mile to the intersection of Mountain Meadow Road. Turning west on Mountain Meadow Road provides direct access to Interstate 15, which, at this point, runs immediately adjacent to Center City Parkway. Residents can choose two directions of travel on Interstate 15 or may continue proceeding west on Deer Springs Road into the City of San Marcos.

The Deer Springs Fire Safe Council has published an Emergency Evacuation Routes map which is included on the next page. Major roads pre-designated as community escape routes are delineated in green. Interstate 15, delineated by bold red coloring, may also be used as an evacuation route by residents. Residents traveling north on Interstate 15 should avoid using west-bound State Route 76 west of Interstate 15 until road construction work is completed. State Route 76 is a relatively narrow two lane winding highway and consistently experiences heavy, slow-moving traffic on a daily basis.



2.3 Firefighting Water Supply

2.3.1 - Existing Water Distribution System

The proposed project site is within the jurisdictional boundaries of the Valley Center Municipal Water District. The initial site visit by the Consultant revealed the installation of a standard residential fire hydrant (one 2-1/2" discharge port and one 4" discharge port) at the driveway for 25548 Rua Michelle. This hydrant is near the northwest corner of the proposed project site and 260 feet from the proposed cul-de-sac bulb at the northeast corner of the project site.



Private Fire Hydrant at 25548 Rua Michelle

Consultation with the Valley Center MWD revealed that the hydrant was installed by the property owner of 25548 Rua Michelle. It is a private hydrant and not maintained by the Water District. The hydrant is served by a 6" private fire main extending in a west-to-east configuration from the intersection of Rua Michelle and Jesmond Dene Road to the driveway. The private fire main is connected to the municipal water distribution system by a back-flow preventer at the intersection. The public water distribution system on Jesmond Dene Road is a 10" steel main provided and served by the Water District. There are additional fire hydrants installed on Rue Montreux, a privately maintained street south and east of the southern property line of the project site. The closest hydrant, a Clow 2050 residential model with one 2-1/2" and one 4" port, is located 190 feet south the project property line.



Fire Hydrant on Rue Montreaux, South of Project Site

2.4 Fire Sprinkler Systems – There are no existing buildings on the Project Site. All new and future buildings will have automatic fire sprinkler systems compliant with NFPA Pamphlet 13-D for residential fire sprinklers in one and two family dwellings installed as required by the most current edition of the Deer Springs FPD ordinances and San Diego County Consolidated Fire Code.

2.5 Ignition Resistant Construction - There are no existing buildings or structures on the proposed Project Site. All new and future buildings and structures will be required to conform to Chapter 7-A of the County of San Diego Building Code for Ignition Resistant Building Construction Standards for Wildland-Urban Interface Areas.

2.6 Defensible Space, Ornamental Landscaping and Vegetation Management

There are no existing structures and buildings on the proposed Project Site.

Defensible Space, Vegetation Management and Ornamental Landscaping are regulated by provisions found in the County of San Diego Consolidated Fire Code, California Fire Code, International Wildland Urban Interface Code, California Public

Resources Code, California Health and Safety Code and the California Government Code. Buildings and structures erected in brush covered lands are generally required to have defensible space and fuel modification zones measuring 100 feet in depth. All regulatory provisions contain exception clauses allowing diminished defensible space depth when sufficient clearance cannot be accomplished because of parcel constraints and restrictions. In such cases, defensible space is provided as “Zone 1” (removal of all native vegetation with replacement consisting of fire- and/or drought-resistant species and “approved”, irrigated landscaping) fuel modification zones that extend to established property lines. Recent revisions to State legislation limits extension of 100 foot deep defensible space zones to properties in extra hazardous locations and only after an evaluation by CAL-FIRE (or Local Fire Authority Fire) Prevention personnel and when written justification has been produced. Property owners cannot be required to provide off-site fuel modification zones and defensible space beyond their property lines.

Existing off-site buildings and structures exhibit varying degrees of compliance with established defensible space, ornamental and vegetation management practices and requirements.

The residential development east of (and separated by the SDGE right-of-way from) the project site on Rue Montreux has established rear yard defensible space depths averaging between thirty-two (32) and fifty-four (54) feet as compared to code mandated 100 foot fuel modification zones. The residence at 25678 Rue de Lac, located at the top of the hill directly north of the project site, and surrounded by a dedicated Open Space Easement that also impinges on Rua Michelle, provides thirty-two feet (32’) of defensible space at its southeast corner and forty-six feet (46’) at its northeast corner. The house at 25566 Rua Michelle, abutting the dedicated Open Space, provides twenty-four (24’) feet of defensible space between the building and conifer trees abutting the Open Space and fifty-two (52’) of defensible space on the north side of the structure. 25560 Rua Michelle is forty-eight (48’) feet from unmanaged natural vegetative fuels.

Chapter 3. ANTICIPATED FIRE BEHAVIOR IN THE VICINITY

3.1 Fire Behavior Model

3.1.1 Summary Narrative

Anticipated Fire Behavior was analyzed after visiting the Project and identifying the on- and off-site natural vegetative fuels. Terrain and topographical inputs were determined by site visits and making comparisons with two- and three-dimensional maps. Weather inputs were derived from the Interior Zone Worst Case Weather and Burning Conditions table supplied by the County of San Diego Guidelines for Fire

Protection Plans and by 2003 Cedar Fire weather and fuel parameters, which were previously established as worst-case fire behavior conditions in San Diego County.

The above data inputs were subjected to analysis by the BEHAVE-Plus 5.0.5 Wildland Fire Modeling program to determine potential wild fire behavior at the Project Site.

The BEHAVE-Plus Fire Behavior Prediction and Fuel Modeling System is a computer-based systematic method of predicting wild land fire behavior. It was developed by the U.S. Forest Service at the Intermountain Forest Fire Laboratory, Missoula, Montana, and is used by wild land fire experts and scientists nationwide. BEHAVE-Plus is designed to predict fire spread and describes fire behavior only at the flame front of a fire. The primary parameter of the BEHAVE fire behavior calculations are dead fuels less than one-quarter (1/4") inch in diameter that readily carry fire across the landscape. Fuels larger than three (3) inches in diameter are not included in the BEHAVE calculations. The BEHAVE fire model describes a wildfire spreading through surface fuels, which are the burnable materials within six (6) feet of the ground and contiguous to the ground.

The fire behavior analysis was performed for three Fuel Model types matching the vegetation present at and around the project site – SH-7 Very High Load Dry Climate Shrub, typical of the unmanaged vegetation on the off-site SDGE right-of-way easement; SH-5 High Load Dry Climate Shrub, typical of the vegetation on the steep sloped Open Space Easement north of the project site; and SCAL-18, California Sage and Buckwheat species, typical of the fuels found on the undeveloped project site.

A fire involving a very high fuel load of ten foot (10') tall shrub fuels starting in the SDGE Right-of-Way will produce flame lengths of 38. feet, a spread rate of 284 chains (18,744 feet) per hour and down-wind fire brand spotting distances of 1.5 miles with 100% ignition of receptive fuels.

A fire involving high-load, ten feet (10') tall shrub vegetation on the Open Space hillside north of the project site will produce flame lengths of 41.3 feet, a spread rate of 450.1 chains (29,706.6 feet) per hour and downwind spotting distances of 1.6 miles with 100% ignition of receptive fuels.

A fire starting on the project site in a five foot tall coastal/Diegan Sage environment will produce flame lengths of 38.6 feet, a spread rate of 186 chains (12,276 feet) per hour and downwind spotting distances of 1.6 miles with 100% ignition of receptive fuels.

3.1.2 Use of Fire Model Inputs – Caveat

The BEHAVE-Plus Fire Behavior Model is a tool used by fire authorities to estimate the behavior of fire moving towards a structure under certain assumptions. The Fire

Behavior Model is only an estimate and is not designed to replace the experience of the local Fire Authority, who is familiar with local wildfire behavior. The Behave-Plus fire model is not the only recognized fire model that is available; it is identified in this report only because it is the model currently used by most fire consultants.

3.2 San Diego Gas & Electric Right-of-Way

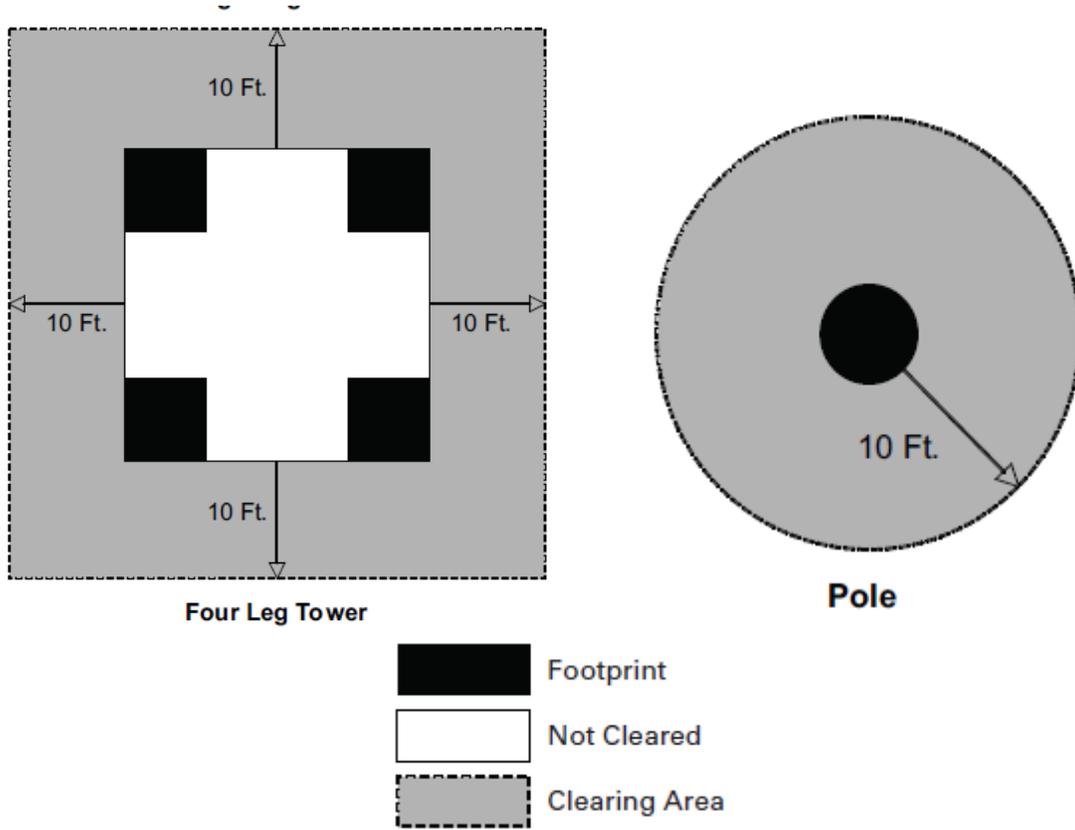
A 300 foot wide electric transmission right-of-way easement is immediately east of the proposed project site. The natural vegetative fuels beneath the dual overhead transmission towers and conductor spans exhibit long-term non-management and mitigation of hazardous brush.

During wildfires, heavy brush fuels with high oil and resin contents release significant amounts of dark, carbon-laden smoke over a short period of time. Contamination of transmission line conductors and insulators caused by the release of large amounts of carbon-based particulates can cause phase to ground arc faults and discharge of high voltage energy from tower transmission lines in the form of an electrical down-strike similar to lightning. Contamination of insulators and conductors by aerial retardant mists or by whipping of conductors by turbulent convective air currents created by wildfires can also cause phase to ground arcs.

Firefighter safety standards deny entry of ground-based firefighting operations and the parking (staging) of fire apparatus within the boundaries of power transmission line right-of-ways. It is highly recommended that aerial retardant drops run perpendicular to, and at sufficient distances from, transmission lines to avoid phase-to-ground arc discharges. It is recommended that firefighters remain outside of overhead power transmission right-of-ways to avoid the consequences of phase-to-ground arc discharges.

The *Power Line Fire Prevention Guide* published by the California State Fire Marshal's Office recommends, except for required clearance around tower legs, that right-of-way vegetation should not be cleared because the vegetation holds soil in place (preventing erosion) and provides the appearance of a natural environment. Section 4292 of the California Public Resource Code requires a minimum ten foot horizontal radius of vegetation clearance from the outside edges of tower legs. Section 4293 requires the clearing of all vegetation in specific radial distance from conductors, depending on conductor size. Vegetation clearances from conductors range from four feet (4') for conductors carrying up to 72,000 volts to ten feet (10') for conductors carrying voltages over 110,000 volts.

PRC 4292
14 CCR 1251
Definition of Outer Circumference Examples
(Plan View at Ground Level)





***Typical TL 688 Transmission Line Vegetation Clearance
Looking North, Immediately East of Northeast Corner of TPM 21192***

As depicted above, the transmission lines passing east of the Rua Michelle project site currently do not comply with Section 4292 vegetation clearance requirements.

The Public Resources Code, Government Code and Health & Safety Code limit fuel modification zones and defensible space to on-site property limits. Property owners are not required to clear off-site vegetation and are generally forbidden from entering off-site properties to clear vegetation unless they have a legal right or permission to do so. ***Sempra Energy and San Diego Gas & Electric Company, as property owners, have a mandated vegetation clearance requirement which requiring continued enforcement to mitigate potential fire hazards presented to properties adjacent to the transmission line right-of-way.***

In addition to the Public Resource Code requirements, San Diego County Ordinance 10147, Chapter 4, Division 8 of Title 6, requires a fuel clearance and fuel modifications along property lines for a minimum depth of thirty (30') feet where combustible vegetation encroaches on or endangers required Defensible Space on adjacent properties. ***The unmanaged vegetation inside the Transmission Line Right-of-Way does not comply with this requirement.***

Chapter 4. ANALYSIS OF PROJECT EFFECTS

4.1 Adequate Emergency Services

4.1.1 – Fire Authority Having Jurisdiction

Fire protection for the proposed project site is provided by the Deer Springs Fire Protection District. The Deer Springs FPD is located north of the City of Escondido and east of the cities of San Marcos and Vista in the north central unincorporated area of San Diego County. The District covers 47 square miles and serves a population of approximately 13000 residents. All-hazard fire protection and other emergency services are provided year-round from three dedicated District fire stations under a contract with the California Department of Forestry and Fire Protection (CAL-FIRE). A fourth CAL-FIRE wildland fire station is located near the northeastern part of the District, providing augmented apparatus and personnel resources. In addition to direct structural and wildland fire suppression services, the District also provides emergency medical care on the ALS-Paramedic level, fire prevention services and administrative services.

Two of the District's fire stations (FS 11 and 13) house a Type I structural engine and a Type III wildland engine. FS 12 houses a single Type I structural engine and Station 15 (CAL-FIRE "Miller" wildland station) houses a Type III wildland engine. Engine Companies are manned year-round by three (3) to four (4) career CAL-FIRE firefighters.

4.1.2 – Response Time and Nearest Fire Station

Station 12, located at 1321 Deer Springs Roads, is the closest Fire Station to the proposed project site. Travel distance from FS 12 to the farthest proposed parcel on Rua Michelle is approximately 2.46 miles. Travel time is estimated at 4.8 minutes using NFPA and ISO standards, which meets the County of San Diego General Plan requirements of five (5) minutes or less for Semi-Rural Residential zoning.

4.2 Fire Access

4.2.1 - Access to Project Site

The main access to the project site is provided from the intersection of Jesmond Dene Road, a paved public road, and Rua Michelle, a privately maintained paved street, and proceeding east from the intersection to the project site.

The southeast corner of the project site, Parcel # 3, has potential access from Rue Montreaux, a privately maintained street with an improved paved width of twenty-

four (24') feet. The proposed building pad on Parcel 3 is approximately 100 feet from Rue Montreaux.

The eastern side of the project has potential access from the SDGE-Sempra Energy utility road that parallels the eastern project property line. Access from the utility road is **not** recommended during wildfire incidents because of the potential for overhead transmission line phase-to-ground arcs due to smoke contamination of conductors and insulators and turbulent convective air disturbances caused by heat and smoke movement above fires.

Project driveways meet current access code requirements. The driveway for parcel one is approximately forty feet long with a maximum grade of 4%. The Parcel 2 driveway is approximately seventy feet long with a maximum grade of 15%. The Parcel 3 driveway is approximately 140 feet long with a maximum grade of 14%. The Parcel 4 driveway is the longest on the project site at approximately 260 feet long and has a maximum grade of 10%.

4.2.2 Current Road Conditions

Rua Michelle is a private street with a forty foot wide easement and an improved paved width of twenty-four (24') feet. The street is currently paved with distressed asphaltic concrete that requires maintenance.

The angle of approach and departure at the intersection of Rua Michelle and Jesmond Dene Road is 3.1 to 3.3%. The angle of approach to the existing gated dirt and stone road to the project site near the eastern terminus of Rua Michelle is 2.1%.

Rua Michelle is approximately 1200 feet long and there is an elevation rise between Jesmond Dene Road and the project site of approximately eighty (80') feet. The first section of Rua Michelle east of Jesmond Dene Road has a grade of 9.8%. The road then curves in a west to southwest configuration, where Rua Michelle has a 7.7% grade. The street steepens to a 10.1% grade at 25448 Rua Michelle, decreases slightly at the northwest corner of the project site with a grade of 9.6% and achieves a final slope of 4.9% at the eastern terminus.

There are no Fire Apparatus Access Road (Fire Lane) signs and posting along Rua Michelle. This is a deviation from current code requirements which mandate fire lane signage and posting for all roads and streets with an improved paved width of less than thirty-six (36') feet. Rue Montreaux, to the south and southeast of the project site, with a similar improved paved width, is supplied with approved Fire Lane signage.

4.2.3 – On-Going Road Maintenance

The project developer has three options for funding private road maintenance:

1. California Civil Code Section 845 – requires that the owner(s) of a private road easement to maintain the road in good repair through formal agreements or proportional sharing of costs incurred. Enforcement of the in perpetuity road maintenance operations is by legal action in a court of law having jurisdiction over the right-of-way or by judgment of a impartial arbitrator. The judgment may be enforced as a money judgment by any party against any other party to the legal action taken.
2. County of San Diego Private Road Maintenance Agreement - as authorized by Section 21065 of the California Public Resources Code and Sections 81.402(c)(1) and 81.703(c)(1) of the County of San Diego Code of Regulatory Ordinances, the developer, individual lot owners and the County may enter into private road maintenance agreements. This type of agreement binds current and future low owners to provide equal and proportional sharing of road maintenance costs that include, but are not limited to, the following operations - reasonable and normal road improvement and maintenance work to adequately maintain said private road easement and related drainage facilities to permit all weather access, filling of chuck holes, repairing cracks, repairing and resurfacing of roadbeds, repairing and maintaining drainage structures, removing debris, maintaining signs, markers, striping and lighting, if any, and other work reasonably necessary or proper to repair and preserve the easement for all weather road purposes.
3. Creation of a Permanent Road Division – A Permanent Road Division zone is a special district established at the request of property owners with a common road related need in a specific area for repairs and maintenance. Property owners must pay all of the costs of the PRD through a special benefit assessment or parcel charge assessment on their property tax bill. The cost to each individual property owner is determined by the benefit their property receives as a result of road repair and maintenance.

4.3 Water

4.3.1 – Existing Water Distribution System

The proposed project site is within the jurisdictional boundaries of the Valley Center Municipal Water District. The initial site visit by the Consultant revealed the installation of a standard residential fire hydrant at the driveway leading to 25548 Rua Michelle. This hydrant is near the northwest corner of the proposed project site

and 260 feet from the proposed cul-de-sac bulb at the northeast corner of the proposed project site.

Consultation with the Valley Center MWD reveals that this hydrant was installed by the property owner of 25548 Rua Michelle and is considered a private hydrant that is not maintained by the Water District. The hydrant is served by a 6” private fire main extending in an east-to-west configuration to the intersection of Rua Michelle and Jesmond Dene Road.

4.4 Ignition-Resistant Construction and Fire Protection Systems

4.1.1 – Existing Structures on Project Site

There are no buildings or structures on the proposed Project Site. All new and future buildings and structures will be required to conform to Chapter 7-A of the County of San Diego Building Code for Ignition Resistant Building Construction Standards for Wildland-Urban Interface Areas. Likewise, automatic fire sprinkler systems conforming to NFPA Standard 13-D for residential fire sprinklers in one and two family dwellings shall be installed for all buildings and auxiliary structures designated by the most current Deer Springs FPD local ordinances and the San Diego County Consolidated Fire Code.

4.1.2 – Existing Off-Site Structures

There are no structures on the project site. Off-site, the community around the project is zoned for, and developed as, residential occupancies. The following off-site structures have been identified and analyzed for compliance with applicable code requirements

25566 Rua Michelle – a single family dwelling immediately north of the project site. This dwelling and property exhibits code compliance issues with driveway width, defensible space and fuel modification violations, and a woodpile spaced less than thirty (30’) feet from a structure. It has no automatic fire sprinklers.

25560 Rua Michelle – a single family dwelling with no apparent code violations and without automatic fire sprinklers.

25533 Rua Michelle – A single family dwelling converted to a residential care facility licensed as Country Club Guest Home. The facility is equipped with two paved driveways with appropriate widths and grades. Fuel modification zones and defensible space appears adequate and properly maintained. The facility address is placed on a mailbox at one of the driveways but is not readable (numbers painted over, not contrasting with background).

25548 Rua Michelle – a single family dwelling used as a Residential Care Facility. There is a residential fire hydrant at the driveway leading to this structure. The driveway is equipped with an electric gate but there is no apparent emergency override key switch mounted at or near the gate.

25522 Rua Michelle – a single family dwelling; no readily apparent Code or standards violations.

25515 Rua Michelle - a single family dwelling; no readily apparent Code or standards violations.

4.5 Fire Fuel Assessment

4.5.1 General Description of Vegetative Fuels

The project is undeveloped and covered with a variety of natural vegetative fuels including native and invasive species annual grasses (Fuel Model 1), Short Pod Mustard (*Brassica geniculata*), laurel sumac (*Malosma laurina*), Sugar Bush (*Rhus ovata*), Cleveland Sage (*Salvia clevelandii*), Black Sage (*Salvia mellifera*), Coastal Sage (*Artemisia californica*) and manzanita (*Arctostaphylos*). There are examples of Mexican Fan Palms in the southwestern corner of the project site. The vegetation types on the project site can be described as Coastal Sage environment, Fuel Model SCAL 18 (alternatively SH-5, High Load Dry Climate Shrub) and Fuel Model 1/GR-4 Moderate Load Dry Climate Grass.

The northeast corner of the project site is exposed to an dedicated open space area on a steep hillside with unmanaged heavy natural vegetative fuels. A 300 foot wide Sempra Energy power transmission right-of-way, extending in a south-to-north configuration, is immediately east of the project site. Natural vegetative fuels in the energy transmission lines are unmanaged and fuel types vary between medium and heavy fuel types with heavy loading and unbroken continuity and compactness over approximately three-quarters of the Right-of-Way. The vegetation inside the transmission line Right-of-Way and on the Open Space parcel can be described as Fuel Model SH-7, Very High Load Dry Climate Shrub.

4.5.2 Fire Behavior of Identified Vegetative Fuels

4.5.2.1 Grass Fuel Type Models (GR)

The primary carrier of fire in the GR fuel models is grass. Grass fuels can vary from heavily grazed grass stubble or sparse natural grass to dense grass more than 6 feet tall. Fire behavior varies from moderate spread rate and low flame length in the sparse grass to extreme spread rate and flame length in the tall grass models. All GR fuel models are dynamic, meaning that their live herbaceous fuel load shifts from

live to dead as a function of live herbaceous moisture content. The effect of live herbaceous moisture content on spread rate and intensity is strong.

GR4 (104) - Moderate Load, Dry Climate Grass (Dynamic)



Description: The primary carrier of fire in GR4 is continuous, dry-climate grass. Load and depth are greater than GR2; fuel bed depth is about 2 feet.

Fine fuel load (t/ac) 2.15
Characteristic SAV (ft-1) 1826
Packing ratio (dimensionless) 0.00154
Extinction moisture content (percent) 15

4.5.2.2 Shrub Fuel Type Models (SH)

The primary carrier of fire in the SH fuel models is live and dead shrub twigs and foliage in combination with dead and down shrub litter.

SH5 (145)

High Load, Dry Climate Shrub



Description: The primary carrier of fire in SH5 is woody shrubs and shrub litter. Heavy shrub load, depth 4-6 feet. Spread rate very high; flame length very high. Moisture of extinction is high.

Fine fuel load (t/ac)	6.5
Characteristic SAV (ft-1)	1252
Packing ratio (dimensionless)	0.00206
Extinction moisture content (percent)	15

SH7 (147) - Very High Load, Dry Climate Shrub



Description: The primary carrier of fire in SH7 is woody shrubs and shrub litter. There is very heavy shrub loading with fuel depths of 4 to 6 feet. Spread rate lower than SH5, but flame length similar. Spread rate is high; flame length very high.

Fine fuel load (t/ac)	6.9
Characteristic SAV (ft-1)	1233
Packing ratio (dimensionless)	0.00344
Extinction moisture content (percent)	15

4.5.3 Fire Behavior Threat Analysis

There has not been a significant vegetation fire near the project site in twenty-seven years, leading to a substantial threat of property loss due to wild fire. As a result, CAL-FIRE has identified the Deer Springs Fire Protection District, including the Jesmond Dene area, as having a “very high probability of burning.” CAL-FIRE’s FRAP evaluation of the natural vegetative fuels within the Deer Springs area ranks these fuels in the high to very high range of combustibility. The vegetation in the Jesmond Dene area and the project site is a combination of coastal sage (California Sagebrush, California buckwheat, laurel sumac) and chaparral (chamise, scrub oak, and manzanita). The unmanaged vegetation subjects the Jesmond Dene area to fast moving, highly destructive and difficult to control fires with potential for extreme fire behavior. Due to the nature of the District and the placement of homes and other structures near unmanaged vegetative fuel beds, Deer Springs will always have the potential for significant loss of structures because of wild land fires.

The extensive, unmanaged native and non-native vegetation represents a critical hazard for wildfires. As a result, the District developed the Community Wildfire Protection Plan that clearly identified the area surrounding the proposed project site as posing one of the greater threats or loss of structures from wildfires. In cooperation with the Deer Springs Fire Safe Council, the Jesmond Dene area has been selected as a Phase I Project Area for Fuel Reduction and Treatment of Structural Ignitability Mitigation. This selection was based on population densities, analysis of the fire threat model (CAL-FIRE FRAP), potential for spot fire propagation into adjacent communities and immediate fire threats to structures.

4.6 Fire Behavior Modeling

4.6.1 Fire Behavior Modeling Summary

Wildland fire behavior calculations have been projected for the hazardous vegetative fuels on the undeveloped adjacent sites bordering the project and inside the proposed residential development. These projections are based on “worst case” fire scenarios that could impact the project site.

The computer based BEHAVE-Plus Version 5.0.5 was used to develop the fire behavior assessments impacting the project. The BEHAVE Fire Behavior Calculations display the expected Rate of Fire Spread (expressed in feet per minute), Fire Line Intensity (Btu/ft/sec), and Flame Length (feet) for three different fuel models of native fuels during peak Santa Ana wind conditions expected in the Jesmond Dene climate zone. Variables were slope, projected wind speed, and the anticipated weather. The tables also include the calculation inputs used in the Modeling System obtained from project site observations and fuel levels typically observed during the local fire season.

4.6.1.1 Projected Fire Behavior

4.6.1.1.1 Anticipated Fire Behavior – Off-Site SDGE Energy Transmission Right of Way - A fire involving a very high fuel load of ten foot (10') tall shrub fuels starting in the SDGE Right-of-Way will produce flame lengths of 38 feet, a spread rate of 284 chains (18,744 feet) per hour and down-wind fire brand spotting distances of 1.5 miles with 100% ignition of receptive fuels.

4.6.1.1.2 Anticipated Fire Behavior – Off-Site Open Space - A fire involving high-load, ten feet (10') tall shrub vegetation on the Open Space hillside north of the project site will produce flame lengths of 41.3 feet, a spread rate of 958 chains (63,228 feet) per hour and downwind spotting distances of 1.6 miles with 100% ignition of receptive fuels.

4.6.1.1.3 Anticipated Fire Behavior – Untreated Project Site - A fire starting on the project site in a five foot tall coastal/Diegan Sage environment will produce flame lengths of 38.5 feet, a spread rate of 186.3 chains (12,276 feet) per hour and downwind spotting distances of 1.6 miles with 100% ignition of receptive fuels

4.6.1.1.4 Anticipated Fire Behavior – Treated Project Site -The combination of required defensible space around structures and enhanced fire resistive building code requirements for the project site will remove and/or modify the existing highly flammable natural vegetation, creating an entirely different fuel model most resembling Urban Development (NB-1) or Agricultural Land (NB-3).

Fuel Model NB-1 includes lands covered with suburban development that will not support wild fire spread but may experience structural fire losses during vegetation fire incidents. Building ignitions usually occur from house to house exposures or from firebrands, neither of which are modeled by current Fuel Model parameters.

Fuel Model NB-3 includes agricultural lands maintained in non-burnable condition. NB-3 vegetation includes irrigated crops and mowed landscaping. If not maintained in a non-burnable condition, NB-3 lands must be categorized as another fuel model type.

The fuel model sets currently used by fire scientists, fire behavior analysts and Fire Protection Plan consultants do not have the ability to simulate fire behavior changes created by various fuel treatments. Fuel Models are based on fully cured vegetation at or near their seasonal extinction moistures and, concurrently, at the worst part of the annual fire season. This tends to produce over-prediction of fire spread rates and other fire behavior parameters, especially in annual grass fuels.

The Fuel Model parameters used by BEHAVE-Plus for grass fuels expresses a extinction moisture content level of 15% for annual grasses and assumes a potential heat release rate of approximately 8000 BTUs per pound of fuel present on the landscape, whether the fuel is in a "live" or "dead" condition.

A fire starting on the project site in cured annual grass will produce flame lengths of 17.5 feet, a spread rate of 1145.2 chains per hour 75,570 feet and downwind spotting distances of .9 miles with 100% ignition of receptive fuels.

Irrigated lawns, as proposed as part of the defensible space guidelines for the project, will have a fuel moisture content of at least 120%. Fuel moisture contents of 120% result in green, non-cured vegetation, with all herbaceous materials remaining in the “live” fuel categories. As a result, grassy fuels with a high fuel moisture will produce flame lengths of one (1') or less and have a rate of spread of approximately 5 chains (330 feet) per hour when exposed to a 20 m.p.h. mid-flame wind.

4.7 Defensible Space and Vegetation Management

4.7.1 Flammable Vegetation

The undeveloped project site is currently covered with native and invasive species annual grasses (Fuel Model 1), Short Pod Mustard (*Brassica geniculata*), laurel sumac (*Malosma laurina*), Sugar Bush (*Rhus ovata*), Cleveland Sage (*Salvia clevelandii*), Black Sage (*Salvia mellifera*), Coastal Sage (*Artemisia californica*) and manzanita (*Arctostaphylos*). There are examples of Mexican Fan Palms in the southwestern corner of the project site capable of producing airborne fire brands that can be deposited long distances downwind and causing additional wild fires off-site.

4.7.2 Fuel Modification Zones for Building Pads

Fuel Modification Zones are specific areas on a property where vegetation has been removed, planted with alternative landscaping or modified in ways that increase the likelihood that a structure will survive a wildfire, improve defensible space around the structure for firefighting activities and prevent flame contact with the building from a spreading fire. In this strategy, vegetation, including ornamental plants, non-native, naturalized or invasive plant species may be removed and are re-planted with fire- and drought-tolerant species, or may be thinned to decrease the available natural vegetative fuel loading on the property. The reduction of available fuel effects the flame lengths and the amount of heat produced by the fire and decreases fuels around houses that can ignite through firebrands and ember showers produced by wildfires moving across the landscape.

Each sub-zone in a Fuel Modification Plan is designed to lower the amount of fuel available to a wildfire the closer the fire gets to a building. Additionally, the amount of moisture retained by plants inside Fuel Modification Zones increases as the distance from buildings decreases. However, it is important to remember that following Fuel Modification principles (removal of flammable vegetation, thinning flammable vegetation and providing irrigated fire resistant landscaping with in perpetuity maintenance of defensible space) does **not** guarantee structure survivability during wildfires. This strategy merely increases the chance of survivability to a reasonable level of relative safety.

Because of the nature of Southern California soils, it is imperative to consider the potential for hillside erosion and the need for slope stabilization. Every effort should be made to avoid the need for total removal of native vegetation on hillsides. Increasing structural setbacks for proposed structures on slopes will reduce the amount of work required on the adjoining hillside as well as improving defensible space around the structure. Efforts should be made to use modified native vegetation on slopes as much as possible to provide adequate hillside stabilization. Native plants are better adapted to local topography and provide important wildlife habitat and protection from erosion. Erosion concerns, combined with the need to address water conservation measures, require the careful selection of plant species as well as the placement of pathways, patios, retaining walls and other landscaping features so that a well-designed fire-wise landscape provides an environment that accomplishes more than achieving the goal of fire safety mitigation.

Defensible space can be accomplished in ways other than plant modification. Paved brick, gravel pathways, rock borders, dry streambeds, water features, swimming pools and other features made of non-combustible materials can contribute to a structure's defensible space. Structural survivability can also be improved through the use of fire resistive building construction standards as outlined in Chapter 7-A and 7-B of the California Building Code.

4.7.2.1 General Fuel Modification Zone Requirements

4.7.2.1.1 Fuel Modification Zone 1

Fuel Modification Zone 1 comprises the first defensible space surrounding a building and has a minimum width of 50 feet. Fuel Modification Zone 1 includes the level building pad. If 50 feet is not obtainable around each structure on a lot, each individual lot owner is still required to maintain his or her front, side and back yards to a zone depth of 50 feet on the flat building pad and on natural slopes or manufactured slopes around their homes with irrigated fire resistant Zone 1 landscaping requirements.

Plants in this irrigated Zone will not include any pryophytes, which are high in oils and resins, including eucalyptus, cedar and juniper species (**see Appendix A - Prohibited Plant list**). Trees must be planted and maintained so that when they reach maturity their branches are at least 10 feet away from any structure.

This fire-resistant landscaped zone is permanently irrigated and will consist of fire resistant and maintained plantings. Thick succulent or leathery leaf plant species are the most fire resistant' plants with paper-thin leaves and small twiggy branches are the least fire resistant.

Regular maintenance and continued irrigation is very important in Zone 1. Plants with high moisture content are less likely to burn. Sidewalks, concrete patios,

decorative rock, swimming pools, and similar landscape features may be included in this zone (and Zone 2) as these features will not support fire.

This irrigated zone (unless irrigation causes erosion) consists of native and non-native fire resistant and maintained plantings less than 18 inches high. This Zone may also contain fire resistant specimen size trees or single well-spaced ornamental shrubs taller than 18 inches, intermixed with ground covers

Although all plants will burn under extreme fire conditions, research has shown that some types of plants, including many natives, are more fire resistant than others. The Recommended Plant List in **Appendix 'A'** includes a list of low fuel volume, non-oily, non-resinous plants commonly referred to as "fire resistant". This term comes with the caveat that these plants must be annually pruned, all dead wood removed, and all grasses or other plant material are removed from beneath the circumference of their canopies. The Recommended Plant List in **Appendix 'A'** includes native species occurring on the project property that are not considered undesirable from either a biological or wildfire risk management perspective if they are properly maintained by June 1st of each year.

(See **Appendix D** for Fuel Modification Zone 1 requirements).

4.7.2.1.2 Fuel Modification Zone 2

Fuel Modification Zone 2 starts at the outer perimeter edge of Zone 1 and extends outward for an additional 50 feet but may extend beyond the minimum required depth of 50 feet (for a minimum total defensible space of 100 feet). Zone 2 Fuel Modifications thin out fifty percent (50%) of vegetation canopies in the area, especially in undesirable plants (**See Appendix A**). Zone 2 also requires the removal of dead and dying materials in vegetation canopies; thinning, lacing and pruning of branches; and mowing and weed-whipping of grasses and weedy plants. Landscaping and maintenance of plantings will include limited irrigation to ensure establishment of fire-resistant landscaping (ground covers, shrubs and trees).

(See **Appendix D** for Fuel Modification Zone 2 requirements)

4.7.2.2 – Defensible Space Around Buildings

Fuel modification zones are required around every building designed for human habitation and buildings designed to house farm animals.

Fuel modification zones shall comply with the following requirements:

(a) When a building is located 100 feet or more from the property line, the fuel modification zone shall have a depth of 100 feet from habitable buildings. The area within the first fifty (50') feet of buildings shall be cleared of non-fire resistive vegetation and re-planted with fire-resistant plants or approved irrigated landscaping. In the area between 50 to 100 feet from a building, all dead and dying

vegetation shall be removed. Native vegetation may remain in this area if the vegetation is modified and thinned so that combustible vegetation does not occupy more than 50% of the area. Trees may remain in both areas provided that the horizontal distance between crowns of adjacent trees and crowns of trees and structures is not less than 10 feet.

(b) When a building or structure in a hazardous fire area is setback less than 100 feet from the property line, the requirements above shall be met to the extent possible in the area between the building and the property line.

(c) The building official and the FAHJ may provide lists of prohibited and recommended plants. Samples of prohibited and recommended plant lists are included in Appendix A.

(d) When the subject property contains an area designated to protect biological or other sensitive habitat or resource, no building or other structure requiring a fuel modification zone shall be located so as to extend the fuel modification zone into a protected area.

All required Fuel Modification Zones and Defensible Spaces shall be in place prior to Final Building Inspection and issuance of a Certificate of Occupancy. Fuel Modification Zones and Defensible Space shall be maintained in perpetuity.

Representatives of the Deer Springs Fire Protection District shall have the right to enter private property to insure the fuel modification zone requirements are met.

4.7.2.2.1 – Parcel 1 Defensible Space Requirements

The proposed building setbacks for Parcel 1 provide less than 100 feet of defensible space on three (north, west and east) sides of the building, with setback depths ranging between forty (40) and sixty (60) feet. The remaining side of the building will have a setback depth of approximately 140 feet.

To compensate for the proposed less than 100 feet of defensible space, the north, west and east sides of parcel one shall provide Zone 1 Fuel Modification Zones from the exterior walls of the proposed building to the property lines on these sides of the residences. All natural, non-fire resistive vegetation shall be removed and replaced with approved fire- and drought-resistive plants or irrigated landscaping (including tree species) as approved by the County of San Diego Approved Plants for Defensible Space in Hazardous Fire Areas list (**see Appendix A**). Trees shall be planted with consideration given to anticipated vegetative crown growth measurements, clustered in maximum groups of three trees, and provided with horizontal distance between crowns of adjacent trees and crowns of trees and structures of not less than ten (10') feet.

4.7.2.2.2 – Parcel 2 Defensible Space Requirements

The proposed building setbacks for Parcel 2 provide less than 100 feet of defensible space on three (west, south and east) sides of the building, with setback depths ranging between forty (40) and seventy (70) feet. The north side of the building will have a setback depth, including the measurement to the center of the Rua Michelle Right-of-Way easement, ranging between 100 and 110 feet.

To compensate for the proposed less than 100 feet of defensible space, the south, west and east sides of parcel one shall provide Zone 1 Fuel Modification Zones from the exterior walls of the proposed building to the property lines on these sides of the residences. All natural, non-fire resistive vegetation shall be removed and replaced with approved fire- and drought-resistive plants or irrigated landscaping (including tree species) as approved by the County of San Diego Approved Plants for Defensible Space in Hazardous Fire Areas list (**see Appendix A**). Trees shall be planted with consideration given to anticipated vegetative crown growth measurements, clustered in maximum groups of three trees, and provided with horizontal distance between crowns of adjacent trees and crowns of trees and structures of not less than ten (10') feet. The north side of the parcel shall have a 100 foot deep Fuel Modification Zone 1 extending outward from the proposed building.

4.7.2.2.3 – Parcel 3 Defensible Space Requirements

The proposed building setbacks for Parcel 3 provide less than 100 feet of defensible space on three (north, west and east) sides of the building, with setback depths ranging between thirty-five (35) and seventy (70) feet. The south side of the building will have a setback depth of 100 feet.

To compensate for the proposed less than 100 feet of defensible space, the entire parcel shall use a Zone 1 Fuel Modification Zone extending from the exterior walls of the proposed building to all property lines. All natural, non-fire resistive vegetation shall be removed and replaced with approved fire- and drought-resistive plants or irrigated landscaping (including tree species) as approved by the County of San Diego Approved Plants for Defensible Space in Hazardous Fire Areas list (**see Appendix A**). Trees shall be planted with consideration given to anticipated vegetative crown growth measurements, clustered in maximum groups of three trees, and provided with horizontal distance between crowns of adjacent trees and crowns of trees and structures of not less than ten (10') feet.

4.7.2.2.4 – Parcel 4 Defensible Space Requirements

The proposed building setbacks for Parcel 4 provide less than 100 feet of defensible space on three (north, west and east) sides of the building, with setback depths ranging between thirty-five (35) and sixty (60) feet. The south side of the building will have setback depths between 150 and 180 feet.

To compensate for the proposed less than 100 feet of defensible space, the north, west and east sides of parcel one shall provide Zone 1 Fuel Modification Zones from the exterior walls of the proposed building to the property lines on these sides of the residences.

The south side of the parcel shall be provided with Defensible Space with standard Zone 1 (0 to 50' from the exterior of the building) and Zone 2 (50 to 100' from the building) Fuel Modification Zones. All natural, non-fire resistive vegetation in the Zone 1 Fuel Modification Zone shall be removed and replaced with approved fire- and drought-resistive plants or irrigated landscaping (including tree species) as approved by the County of San Diego Approved Plants for Defensible Space in Hazardous Fire Areas list (*see Appendix A*). Natural vegetative fuel in the Zone 2 Fuel Modification Zone shall be modified by removing all dead, dying and downed vegetation and removing 50% of the living fuel in vegetative canopies and crowns.

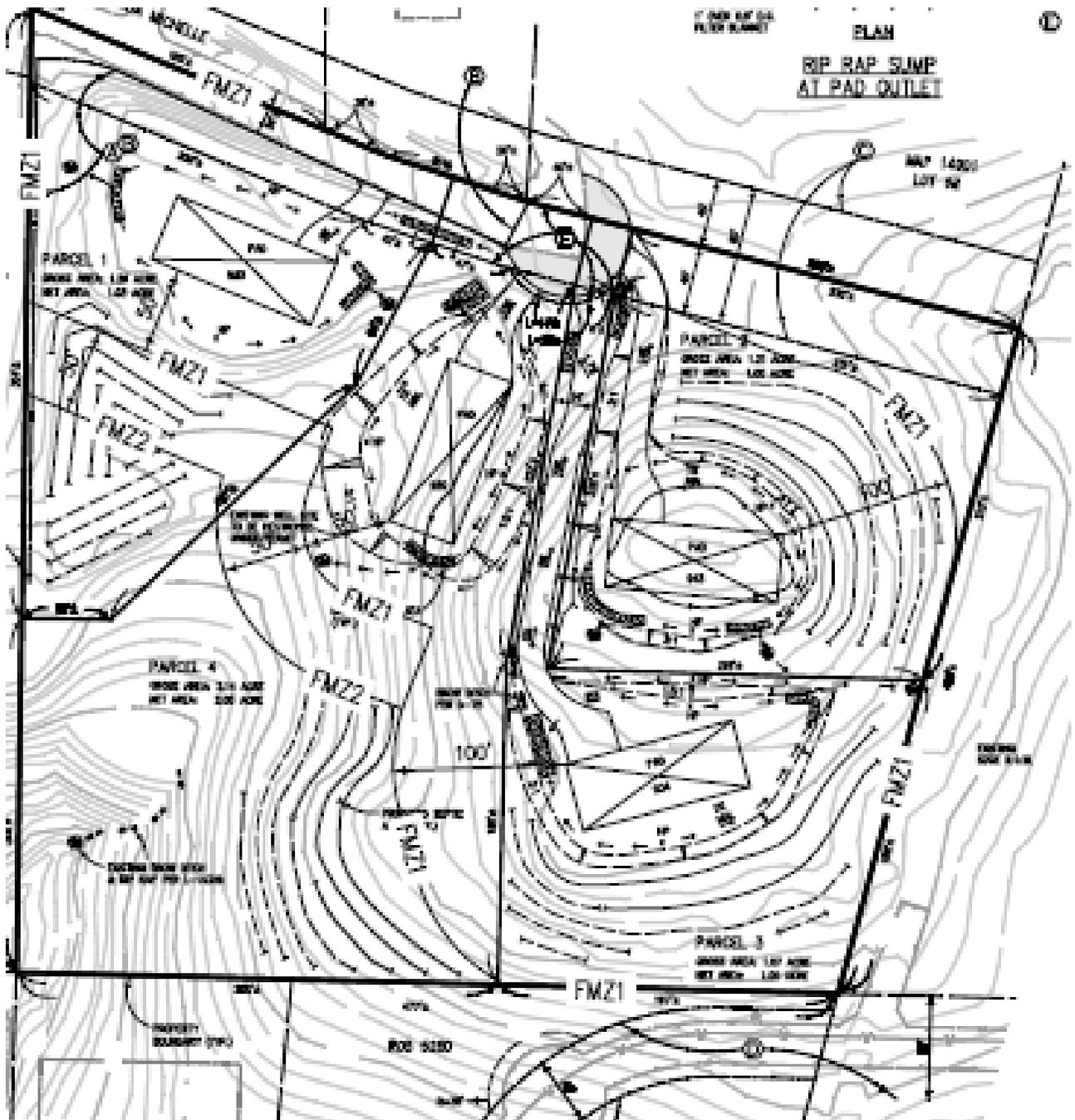
Trees shall be planted with consideration given to anticipated vegetative crown growth measurements, clustered in maximum groups of three trees, and provided with horizontal distance between crowns of adjacent trees and crowns of trees and structures of not less than ten (10') feet.

The non-compliant palm trees on the south side of Parcel 4 will be allowed to remain in place and shall be subject to annual (or as needed to mitigate fire hazards) removal of excessive "skirt" and frond growth. Maintenance of the palm tree "skirts" and frond growth shall be performed in perpetuity.

4.7.2.3 – Roadside Fuel Modification Zones

Roadside Fuel Modification Zones shall be provided along the south side of the Rua Michelle right-of-way easement and along the private residential driveways of the proposed parcels. Roadside fuel modification zones may be combined with required defensible space provided around buildings or as stand-alone Fuel Modification Zones depending on road and lot configuration(s). Combustible vegetation alongside of Rua Michelle and private driveways shall be modified in the area within 20 feet from each side of the driveway or adjacent to the private road to establish a roadside fuel modification zone.

Representatives of the Deer Springs Fire Protection District shall have the right to enter private property to insure the fuel modification zone requirements are met.



Proposed Fuel Modification Zones for TPM 21192

4.7.3 Vegetation Management Practices

Fuel Modification Zones must be maintained to fulfill the requirements of this Fire Protection Plan and meet the requirements of the Deer Springs Fire Protection District. Maintenance shall include, but is not limited to, initial planting, weeding, irrigation installation, maintenance and plant pruning, the removal of dead or dying and downed vegetation and replacement of plants as required.

The following requirements shall apply to this project:

1. Each property owner shall be responsible for all irrigation and landscaping of Fuel Modification Zones within their property boundaries. Fuel Modification Zones and Defensible Space shall be limited to the area within established property lines and shall not extend off-site of established parcels.
2. The Deer Springs Fire Protection District will hold each parcel owner within the proposed project accountable for enforcement of all wildfire protection issues discussed in this Fire Protection Plan.
3. Each property owner shall not allow dumping of trash or disposal of yard trimmings within Fuel Modification Zones and Defensible Space areas.
4. The Deer Springs Fire Protection District, or its designated representative(s), shall decide any disputes relating to individual lot landscaping or fuel treatments involving the interpretation of this Fire Protection Plan. Decisions made by the Fire Protection District shall be final and binding on property owners.
5. If modifications to the Tentative Map Plans occur, any and/or all of the Fire Protection Plan may be revised at the discretion of the Deer Springs Fire Protection District.
6. All exterior boundaries of Zones 1 and 2 Fuel Modification Zones shall be permanently marked on the ground for the purpose of guiding annual fuel management maintenance and inspection operations. The most reliable markers are steel fence posts with a baked-on painted finish. The upper half of the aboveground portion of the fence post shall be painted a bright “day-glow” orange color to improve visibility. Fuel Treatment Zone markers shall be spaced so that other markers on each side of installed markers can be readily seen from that marker.
7. Brush removal shall be completed prior to commencing any flammable construction.
8. During construction at least 50 feet of clearance around the structures shall be free of all flammable vegetation as an interim fuel modification zone during construction of any structure.
9. Debris and trimmings produced by thinning and pruning will be removed from the site
10. The annual completion of all designated Fuel Modification Treatments will occur before June 15th.
11. All individual landscaping plans, including additional structures, will comply with the Fire Protection Plan.
12. Trees and plants will be planted in accordance with the County of San Diego Approved Plants for Defensible Space in Fire Prone Areas List as shown in Appendix A or as approved by the Deer Springs Fire Protection District.

4.8 Cumulative Impact Analysis

San Diego County’s weather, fuel, and terrain contribute to the development of intense, uncontrolled wild fires as evident by the recent Cedar, Paradise and Otay fires of October 2003 and the Witch, Harris and Poomacha Fires of 2007. The areas of greatest concern for the impact of wild fires on developments are projects

immediately adjacent to, or intermixed with, undeveloped wild land areas or unmanaged vegetation stands in Open Space preserves. As the population of San Diego County increases and the Wildland Urban Interface (WUI) expands, fire hazards and risks will continue to be encountered. Vehicle access to residential subdivisions next to WUI areas or Open Space easements and an increase in other human activities in these areas increases the risk of property loss, injury or death and contribute to the impact of potential wild land fires.

The proposed development of the parcel is an “in-fill” project between existing developed residential properties. TPM 21192 proposes a four lot land division for future residential development on a currently undeveloped parcel covered with unmanaged native, naturalized and invasive vegetation. The existing undeveloped parcel represents a potentially significant fire hazard to adjacent off-site properties and creates an unrestricted path of fire extension into developed residential areas because of its proximity and contiguousness to unmanaged vegetation fuel beds on an energy transmission right-of-way parcel and an Open Space easement to the north located on a steep sloped hillside. These threats will continue until the mitigations proposed by this Fire Protection Plan are implemented with the development of the four parcels.

Development of TPM 21192 will have a positive impact on Deer Springs Fire Protection District finances. The current San Diego County Fire Mitigation Fees, based on \$.46 per square foot of habitable space, will provide an initial return of between \$1150 (anticipated 2500 square foot Single Family Dwelling) to \$1840 (4000 sq.ft. SFD) to the District for capital improvements such as apparatus replacement, hose purchase, fire station maintenance and firefighting equipment. Based on a \$400,000 sales price, the proposed single family dwelling on the project site will produce an annual combined and approximated property tax and assessment fee income of \$2160 to the District. These figures are based on estimated \$4800 per year in 1% general San Diego County property taxes per residence, Fire Standby Fees of \$14.58 per unit (four units per SFD) and the Deer Springs Fire Suppression Assessment of \$.12 per unit (four units per SFD).

Chapter 5. MITIGATION MEASURES AND DESIGN CONSIDERATIONS

5.1 – Road and Access Mitigations

5.1.1 Existing Road and Access

Rua Michelle has an eighty (80') foot wide road easement and has an improved paved width of twenty-four (24') feet. The paving surface is asphaltic concrete and is privately maintained. The road surface exhibits a distressed covering in need of maintenance. The weight-bearing capability of the paving surface has not been determined at this time.

5.1.2 – Proposed Mitigations

5.1.2.1 – Rua Michelle surface – the project developer is proposing re-paving the existing road surface from Jesmond Dene Road to the proposed cul-de-sac terminus of Rua Michelle in cooperation with the existing landowners of adjacent properties. An additional two (2") of asphaltic concrete is to be placed over the existing roadbed and distressed surface. The proposed re-paving of the existing roadbed will provide the minimum 75,000 pound weight-bearing capacity for fire apparatus operations and will, if properly maintained, extend road service life up to an additional twenty-five (25) years or more.

5.1.2.2. – Private Driveways – all private driveways on the project site will be provided with an approved all-weather paved surface. Driveway slopes shall not exceed 15% without additional mitigation consisting of a minimum of three (3") of concrete that is brush perpendicular to the driving surface to provide additional traction. Driveway widths shall have a minimum improved paved surface of sixteen (16') feet and maximum slope shall not exceed 20%. Angle of approach and departure at the intersection of driveways and roads shall not exceed 7 degrees or a 12% slope.

5.1.2.3 Parcel 3 Driveway - The proposed driveway for Parcel 3 is approximately 200 feet long and will require an approved fire department turnaround. The turnaround area may not be used for parking of private vehicles or otherwise obstructed.

5.1.2.4 Additional Fire Apparatus Access Roads – All proposed building pads are within 150 feet of proposed private driveways providing fire department access to future buildings. The four parcels do not require additional Fire Apparatus Access Roads to insure that all portions of buildings are within 150 feet of fire department access.

5.1.2.5 – Fire Apparatus Access Road Obstructions - all roads, excluding private driveways, with an improved paved width of less than thirty-six (36') shall be considered Fire Apparatus Access Roads (Fire Lanes). Fire Lanes shall be provided with red curbs and posted signs that identify the presence of the Fire Lane. Red curbs shall be supplied with white stenciled letters that are plainly visible from vehicles, which indicate the presence of the Fire Lane and prohibit parking. Fire Lane Signs shall be posted at appropriate distances apart, further identifying the presence of the Fire Lane and mandating "No Parking" within the Fire Lane. The Fire Lane shall extend from the northwest corner of the project site (Parcel 1) to, and including, the cul-de-sac terminus. Signs, posting, red curbs and white stenciling shall comply with the requirements of Section 22500.1 of the California Vehicle Code. Signs, posts, red curbs and white stenciling shall be maintained in perpetuity.



Example of Approved Fire Lane Regulatory Sign

5.2 – Water Supply Mitigations

5.2.1 Existing Water Supply

There are two fire hydrants in relatively close proximity to the project site.

The first hydrant is near the northwest corner of the proposed project site and 325 feet from the proposed cul-de-sac bulb at the northeast corner of the proposed project site. This is a private hydrant and is not maintained by the local water district.

There are additional fire hydrants installed on Rue Montreux, a privately maintained street south and east of the southern property line of the project site. The closest hydrant, a Clow 2050 residential model with one 2-1/2" and one 4" port, is located 190 feet south the project property line. These hydrants were installed in 2004 and were required to have the capability of flowing the minimum required 2500 gpm fire

flow before the Rue Montreux development received final inspection and Certificates of Occupancy from the County of San Diego.

5.2.2 Proposed Mitigations

The San Diego County Fire Authority Fire Marshal's Office has indicated that the existing fire hydrants at and adjacent to the proposed project site meet the fire protection requirements for the project and, therefore, no additional fire hydrants will be required.

5.3 – Ignition Resistant Construction and Automatic Fire Sprinkler Mitigations

5.3.1 Existing Structures

There are no existing structures at the project site.

5.3.2 Proposed Mitigations

All new buildings and structures shall be provided with automatic fire sprinklers complying with National Fire Protection Pamphlet 13-D - Fire Sprinklers for One- and Two-Family dwellings.

All new and future buildings and structures will be required to conform to Chapter 7-A of the County of San Diego Building Code for Ignition Resistant Building Construction Standards for Wildland-Urban Interface Areas and California Building Code Chapter 7-A construction standards.

Examples of detailed, but not-all-inclusive, requirements for building construction in Very High Severity Areas are included in **Appendix C**.

5.4 - Defensible Space and Fuel Modification Mitigations

As previously stated, Fuel Modification Zones on properties are areas where vegetation has been removed, planted with alternative landscaping or modified in other ways to increase the likelihood that structures will survive a wildfire, improve defensible space around the structure for firefighting activities and prevent flame contact with the building from spreading fires.

During initial consultations, representatives of the Deer Springs Fire Protection District raised concerns about the possibility of a wild fire spreading from the southeast out of the Sempra Energy transmission right-of-way onto the TPM 21192 parcel. This concern evolved from the long-term presence of unmanaged heavy chaparral type fuels, the normal day-to-day wind patterns that could push a fire originating from this location into the project site, and the age of the natural

vegetation in this fuel bed. The last recorded major fire at the project site was in 1985, resulting in a decadent fuel bed, large amounts of dead and dying fuels in vegetation canopies, release of a large number of firebrands, potentially high rates of heat release and extreme rates of fire spread across the landscape.

According to the County of San Diego Defensible Space Ordinance, once TPM 21192 is developed San Diego Gas & Electric/Sempra Energy will be required to provide an in perpetuity, minimum thirty (30')-foot wide property line Fuel Modification Zone along the eastern border of the project site. This property line Fuel Modification Zone may be extended to a maximum depth of 100 feet if deemed necessary by the Fire Authority Having Jurisdiction and the County Fire Warden. Enforcement of the property line Fuel Modification Zone will be a joint responsibility of San Diego Gas & Electric/Sempra Energy, as the property owner, and the Deer Springs Fire Protection District as the Fire Authority Having Jurisdiction.

5.4.1 – Proposed Mitigations

5.4.1.1 – Defensible Space Mitigations for Parcels 2 and 3

Parcels 2 and 3 have the most severe exposure to wild fires spreading out of the Sempra Energy Transmission Right-of-Way. The eastern property lines of Parcels 2 and 3 run parallel to the right-of-way, which is covered by nearly contiguous, tightly compacted shrub and brush fuels with high fuel loading and heights reaching up to fifteen feet above the ground. The eastern property lines of Parcels 2 and 3 are separated from the unmanaged fuel beds by a distance of approximately twenty-five (25') feet, including a fourteen (14') foot wide unimproved dirt road which has questionable all-weather use capability. The western-most overhead transmission cable for the 69KV transmission line is ten (10') east of the project eastern property line. Under standard wild fire operating procedures, fire apparatus parking and tactical firefighting operations are restricted within the boundaries of transmission line right-of-ways for firefighter safety because of the possibility of phase-to-ground electrical arcs.

Given these factors, defensible space fuel modifications for the eastern sides of Parcels 2 and 3 have been established as having a minimum 100 foot deep Zone 1 configuration. Anticipated flame lengths from the unmanaged right-of-way fuel bed are modeled at 38 feet, encroaching approximately 13.5 feet on to the project landscape. This mitigation conforms to County of San Diego Fuel Modification Zone guidelines, as applied to Shelter-in-Place communities, where the provided Fuel Modifications Zones are maintained to a minimum depth of at least two times the anticipated flame length of an approaching wildfire to provide adequate structural defenses against ignition. The 100 feet of defensible space provided on Lots 2 and 3 is more than double the projected flame lengths entering the project from unmanaged off-site vegetative fuel beds.

It should be noted that TPM 21192 is **not** being proposed as, or intended to become, a Shelter-in-Place community. The proposed use of Shelter-in-Place community defensible space guidelines are used as a means to provide minimization of Significant Impacts caused by off-site vegetation fire encroachment and reduce the possibility of structural ignitions caused by these fires.

Chapter 6. CONCLUSION

6.1 Significant Impacts Mitigated by Fire Protection Plan requirements

Due to the severity of impacts from the improper management of wild land areas, the existing laws are stringent and regulate all aspects of wild land fire including building standards, fuel modification, water availability/flow, and access.

6.1.1 Emergency Services – the project site is served by the Deer Springs Fire Protection District. The Deer Springs Fire Protection District is an all-hazard fire protection agency that provides services year-round under a contract with the California Department of Forestry and Fire Protection (CAL-FIRE). The fire protection services provided by the District meet or exceed the requirements to reduce the Significant Impact of providing adequate emergency services.

The project is zoned Rural Residential property and the majority of the proposed lots are less than two (2) acres, placing the parcels in the “Town” Land Use Category.

Maximum fire travel time for Town Land Use Designation for Single Family Dwellings is five minutes.

LAND USE CATEGORY	MAXIMUM TRAVEL TIME	LAND USE CATEGORY DEFINED
Town	5 minutes	Single-family residential lots of less than two acres, or more intensive uses such as multi-family residential. Includes all industrial development and all commercial development except neighborhood commercial
Estate	10 minutes	Single-family residential lots from two to four acres in size. Includes neighborhood commercial development.
Rural	20 minutes	Large lot single-family residential and agricultural development. Lot sizes of greater than four acres.

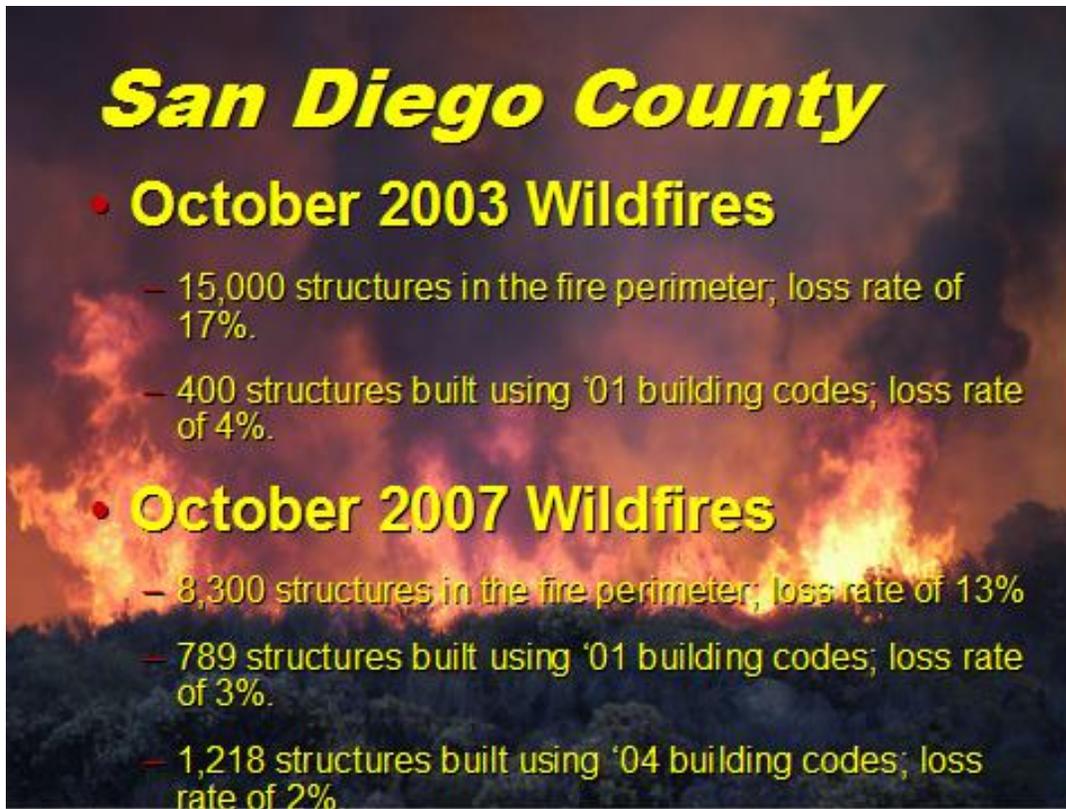
Project documentation and agency recommendations have determined that the project meets or exceeds the requirements of this Significant Impact.

6.1.2 Access and Evacuation – The primary road providing emergency access and egress meets the minimum Fire Code width, paving and slope requirements between the project site and an intersection where two directions of egress travel are available. There are no actual or potential bottlenecks or other constraints between the project site and the above intersection. Private driveways will be provided with sufficient width to allow simultaneous passage of civilian vehicles and fire apparatus. Fire Lanes established under the requirements of this Fire Protection Plan will be maintained in perpetuity according to the requirements of Section 22500.1 of the California Vehicle Code, allowing local law enforcement and fire officials the ability to enforce fire lane regulations without restrictions. When met, the Fire Protection Plan provisions for Access and Evacuation will meet or exceed the Significant Impacts in this category.

6.1.3 – Water Supply – the water supply and distribution system on Rua Michelle is a private, unmaintained fire main and hydrant. The San Diego County Fire Authority Fire Marshal's Office has indicated that the existing fire hydrants at and adjacent to the proposed project site meet the fire protection requirements for the project and, therefore, no additional fire hydrants will be required.

6.1.4 – Ignition Resistant Construction - all new buildings and structures erected on the project site will be required to meet the County of San Diego Building Code Chapter 7-A requirements for Wildland Urban Interface Areas and Chapter 7-A requirements of the California Building Code. These requirements mandate the installation of automatic fire sprinkler systems compliant with NFPA Pamphlet 13-D *Installation of Automatic Fire Sprinklers in One and Two Family Dwellings* standards.

Roof composition is an important factor in structural survivability. One study shows that typical single family dwellings with non-combustible roofs and thirty-three (33) to sixty-six feet of fuel clearance have a 95% chance of survival (Howard, et.al., 1973). A second study in Santa Barbara counted revealed that houses with a non-combustible roof and thirty-three to sixty feet of vegetation clearance had an 86% chance of survival (Foote, 1994). The proposed single family dwellings on TPM 21192 will be required to have Class A non-combustible roof decks or assemblies.



The above Power Point slide, from a presentation given by the San Diego County DPLU Fire Marshal's Office, indicates a 96 to 98% survivability rate for buildings erected under Enhanced Fire Resistant Construction/Chapter 7A and 7B requirements during actual, extreme fire behavior conditions in similar and more hazardous vegetation types than found on the project site.

The building standards proposed by this Fire Protection Plan will provide a reasonable degree of ignition resistant buildings at the project site and reduce the Significant Impact caused by less resistant construction standards.

6.1.5 Defensible Space and Fuel Modifications – TPM 21192 is designed with adequate and properly managed fuel modification zones that have a depth of at least twice the anticipated flame length modeled for fuels on and adjacent to the project site. The ornamental landscaping at the project is required to be properly maintained with plant species consistent with the County of San Diego Approved List for Plants for Defensible Space in Fire Prone Areas List. The primary road giving access to the project site, and all private driveways leading to proposed residences will be provided with clearing of native and fire prone vegetation that meets Fire Code requirements. Defensible space fuel reduction, as proposed for TPM 21192, has in-perpetuity maintenance requirements.

Fire progressing onto the Project Site from the East and North will encounter mandated Fuel Modification Zones that eliminates non-fire resistive vegetation. This will cause a reduction of rate of fire spread and heat production, decreasing continuing active and aggressive fire progression across the landscape.

Because of the possibility of fire entering the Project Site from the unmanaged Power Transmission Line Right-of-Way to the east, the Fuel Modification Zones on Lots 2 and 3 will be required to have a minimum 100 foot deep Zone 1 fuel reduction zone between buildings and property lines. Zone 1 Fuel Reduction Zones have all natural non-fire resistive natural vegetation removed; these will be replaced with irrigated fire- and drought-resistive landscaping from the County of San Diego's Approved Plants for Defensible Space in Fire Prone Areas List.

The 100 foot deep Zone 1 fuel reduction zone is used despite allowances in the San Diego County Consolidated Fire Code allowing reductions of required thirty (30') foot wide Fire Setbacks from property lines and reductions of Fuel Modification Zones allowed when using fire resistive construction technology to insure relative safety of ignition from radiant and convective heat exposure.

Fire behavior, under these mitigations strategies, is expected to significantly diminish when a wildfire encroaches upon the Fuel Modification Zones on the property line exposed to off-site unmanaged vegetative fuels. Vegetation management beyond a structure's immediate vicinity has little effect on house ignitions unless a minimal break of continuous surface fuels is maintained around the perimeter of the house. For this reason, home site protection includes eliminating continuous ground fuels that lead from wild land fuel beds to the house. This can be accomplished with rock landscaping, cement sidewalk, green grass or by removing dried vegetation and tree needles (Jack Cohen, USFS).

In 1997, Cohen conducted a full-scale experiments that revealed that a typical Type V-B combustible wall thirty-three feet from a crown fire in 43 foot (13 meter) tall Black Spruce trees. These fires produced flame heights of 20 meters or 65.616 feet. Twenty meter long flame heights are produced by a 100 megawatt fire. The walls on the test site only ignited when actually touched by flames. These full-scale fire tests are the basis for the 100 foot wide Fuel Modification Zones mandated by the County of San Diego.

The off-site Coastal Sage shrub environment on the north and sides of the project will produce a 3.5502631035 megawatt fire. These heat energy are approximately 3% of the energy produced by Cohen's full scale test fires.

The BEHAVE Fire Modeling calculation for the Project Site indicate that a wild fire moving through Fuel Model 1-GR-1 native and invasive species annual grasses will produce a Fire Line Intensity of 2868 BTU/foot/second. This value can be anecdotally applied to irrigated lawns and used to determine ignition times for residential construction materials by using various formulas and tables.

For example, using the formula:

$$t_{ig} = \pi kpc (T_{ig} - T_o) / 2q_e \quad (\text{National Fire Academy } Fire \text{ Dynamics pg. 5-3})$$

where

t_{ig} = time to ignition, seconds

kpc = thermal inertia of material

T_{ig} = temperature of ignition source

T_o = surface temperature of exposed material

q_e = incident heat flux to the material

The ignition time of solid materials can be estimated.

For a gypsum based one hour fire resistive or non-combustible stucco plaster wall (as required by Chapter 7A of the County and California Building Codes) at a temperature of 100 degrees (solar exposure), having a kpc of $5.8 \times 10^5 q_e$ (*Fire Dynamics*, pg. 2-15), exposed to radiative heat from a 1400 degree flame front thirty feet (30') away producing 2868 BTUs, ignition time would be 32762970.24 seconds or **379.2 days**.

The BEHAVE Fire Modeling Calculation indicates that non-irrigated Fuel Model 1/GR-1 light fuels under worst case 2003 Cedar Fire Event burning conditions will produce 2868 BTUs, equivalent to 840.324 watts or **.840324 kilowatts**.

Referring to *Fire Dynamics* Figure 2-5 *Damage Caused by Radiation* below, the calculated fire crossing into the TMP 21192 Project Site from the adjacent properties, with the potential ignition of landscaped lawns, will not produce sufficient radiant heat to cause significant damage of proposed new single family dwellings.

Damage Description	Heat Flux – kW/m ²
Skin burns	4.7 to 5.0
Pain threshold	1.5
Pain at one minute	2.1
Plastic melts	12.0
Cable insulation degrades	18.0 to 20.0
<i>Piloted ignition occurs:</i>	
Wood	14.6
Painted Wood	16.7
Wood spontaneously ignites	33.5

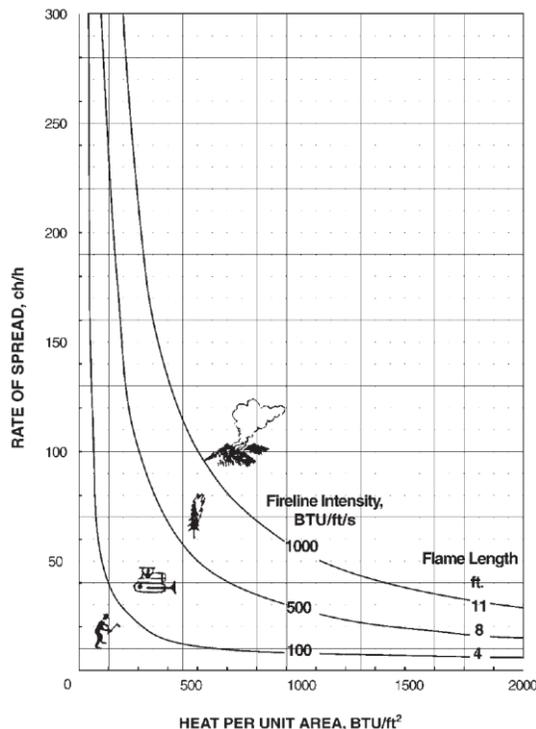
Type of Heat Exposure	Heat Flux Value
Flame Radiation	0-200 kW/m ²
Flame Convection	10-20 kW/m ²

Hot Gas Convection	0-10 kW/m ²
Hot Gas Radiation	0-150 kW/m ²

Table 5.5 Heat Flux Direct Contact Values, NFA Fire Dynamics

While Fuel Model SH-5 and SH-7 vegetation produce relatively long flame lengths (41.3' for SH-5 and 38' for SH-7) and higher burning intensities (2955 BTU/sq.ft. [SH-7] and 22335 BTU/sq.ft. [SH-5]), fire behavior will change when the flame front transitions into the irrigated grass fuel bed. Irrigated lawns, as proposed as part of the defensible space guidelines for the project, will have a fuel moisture content of at least 120%. Fuel moisture contents of 120% result in green, non-cured vegetation, with all herbaceous materials remaining in the "live" fuel categories. As a result, grassy fuels with a high fuel moisture will produce flame lengths of one (1') or less and have a rate of spread of approximately 5 chains (330 feet) per hour when exposed to a 20 m.p.h. mid-flame wind

The fire behavior characteristics of irrigated grass fuels is well within the capabilities of fire suppression forces using non-mechanized firefighting tools to control fires in this vegetation type. The change of burning characteristics and intensity as fire moves across the grassy fuels will provide more opportunities for responding resources to take defensive suppression action at the established Fuel Modification Zones around the TPM 21192 structures (see the Fire Behavior Characteristics Chart below).



This fire protection plan demonstrates compliance with the applicable regulations. It will ensure adequate compliance with codes/regulations and significance standards, including required fuel modifications and construction resistive materials. In addition, it can be incorporated by reference into the project's Final Conditions of Approval and enforced through each proposed structure's Certificate of Occupancy Conditions.

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Chapter 8. REFERENCES

APPENDIX A COUNTY OF SAN DIEGO APPROVED PLANT LISTS

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		
japonica	Loquat	C/I/D
Erythrina caffra	Kaffirboom Coral Tree	C
Ginkgo biloba "Fairmount"	Fairmount Maidenhair Tree	I/M
Gleditsia triacanthos	Honey Locust	I/D/M
Juglans		
californica	California Walnut	I
hindsii	California Black Walnut	C/I
Lagerstroemia indica	Crape Myrtle	I/D/M
Ligustrum lucidum	Glossy Privet	I
Liquidambar styraciflua	Sweet Gum	C/I/M
Liriodendron tulipifera	Tulip Tree	I
Lyonothamnus floribundus		
ssp. Asplenifolius	Fernleaf Catalina Ironwood	C
Melaleuca spp.	Melaleuca	C/I/D
Parkinsonia aculeate	Mexican Palo Verde	C/I
Pistacia		
chinensis	Chinese Pistache	
	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
Baccharis**		
glutinosa	Mule Fat	C/I
pilaris	Coyote Bush	C/I/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
Fouquieria 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**	Δchy Silktassel	I/M

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

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		
gigantea	Giant Coreopsis	C
grandiflora	Coreopsis	All Zones
maritima	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

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.

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

APPENDIX B

ACCESS ROAD REQUIREMENTS

All roadways serving this Project shall be a minimum of twenty-four (24) feet improved paved width. Private driveways shall have a minimum improved paved width of sixteen (16') feet.

All roads and driveways shall not exceed 20% grades. Any road or driveway between 15 and 20 percent will be a concrete surface and have a deep broom finish perpendicular to the direction of travel to enhance traction.

All dead-end roads (including driveways) in excess of 150 feet in length shall be provided with approved provisions for the turning around of fire apparatus.

All roads within the development shall be all-weather paved streets capable of supporting fire apparatus weighing up to 75,000 pounds.

All roads shall be provided with the approved paved driving surface prior to construction and/or bringing combustible building products onto each parcel.

Gates Across Roads - There are no entrance gates planned for this residential development. If in the future or at a later date a gate is, the following shall be required:

- Gates shall be automatic
- Gates shall be equipped with approved emergency key-operated switches that overrides all gate command functions and opens the gate(s).
- Gates shall also be equipped with approved emergency tract control-activating strobe light sensor(s) or other devices approved by the DSFPD Chief, which will activate the gate on the approach of emergency apparatus.
- Gate opening mechanisms shall be provided with battery back-up or manual mechanical disconnects in the event of power failures.
- Gates shall conform to DSFPD requirements and County design requirements DS-17, 18, and 19.

Roads having improved paved width less than thirty-six (36') feet shall be designated Fire Apparatus Access Roads (Fire Lanes). Fire Lanes shall be identified by:

- Red curbs with white stenciled letters plainly visible from a vehicle
- White stenciled letters on red curbs shall state "Fire Lane-No Parking"
- Fire Lane signs posted in compliance with Section 22500.1 of the California Vehicle Code

APPENDIX C

IGNITION RESISTANT CONSTRUCTION & FIRE PROTECTION SYSTEMS

Several pre-cautionary ignition-resistant construction measures will be used to reduce potential ignition of residences from wild land fires firebrands.

All structures shall be built with Class A Roof Assemblies, including a Class A roof covering.

The exterior wall surface materials shall be non-combustible, or an approved alternate, and shall be protected by two inch nominal solid blocking between rafters all roof overhangs or by stucco boxed-in eaves.

Attic or foundation ventilation louvers or ventilation openings shall not exceed 144 square inches per opening and shall be covered with 1/4-inch mesh corrosion-resistant metal screening or other approved material that offers equivalent protection. Attic ventilation shall also comply with the requirements of the California Building Code (C.B.C.). Attic ventilation openings or ventilation louvers in soffits, eave overhangs, between rafters at eaves, or in other overhanging areas shall not be permitted.

Paper-faced insulation shall be prohibited in attics or ventilated spaces.

All chimney, flue or stovepipe openings will have an approved spark arrester. Spark arrestors shall be installed to be visible for the purposes of inspection and maintenance.

Glass or other transparent, translucent or opaque glazing, including skylights, shall be constructed of tempered glass or multi-layered panels with at least one tempered pane or glass block construction. Exterior glazing shall have a minimum fire-resistance rating of not less than 20 minutes.

All residential structures will have automatic interior fire sprinklers installed according to the National Fire Protection Association (NFPA) 13D-*Standard for the Installation of Automatic Fire Sprinklers in One- and Two-family Homes and Manufactured Homes* and Deer Springs Fire Protection District standards.

Rain gutters, down spouts and gutter hardware will be constructed from metal or other approved non-combustible material. Gutters will be designed to reduce the accumulation of leaf litter and debris.

The first five feet of fences and other construction (gates, gate posts, fence posts) attached to structures shall be of non-combustible material.

All projections (patio covers, unenclosed roofs and floors, and similar architectural appendages and projections) will be of non-combustible construction, one-hour fire resistive construction on the underside, or heavy timber construction. When such appendages and projections are attached to exterior fire-resistive walls, they will be constructed to maintain the fire-resistive integrity of the wall.

Exterior balconies and decks will be of non-combustible construction, one-hour fire resistive construction on the underside, or heavy timber construction. Exterior decks shall be completely enclosed from the bottom of the deck surface to ground level and covered with approved non-combustible construction materials.

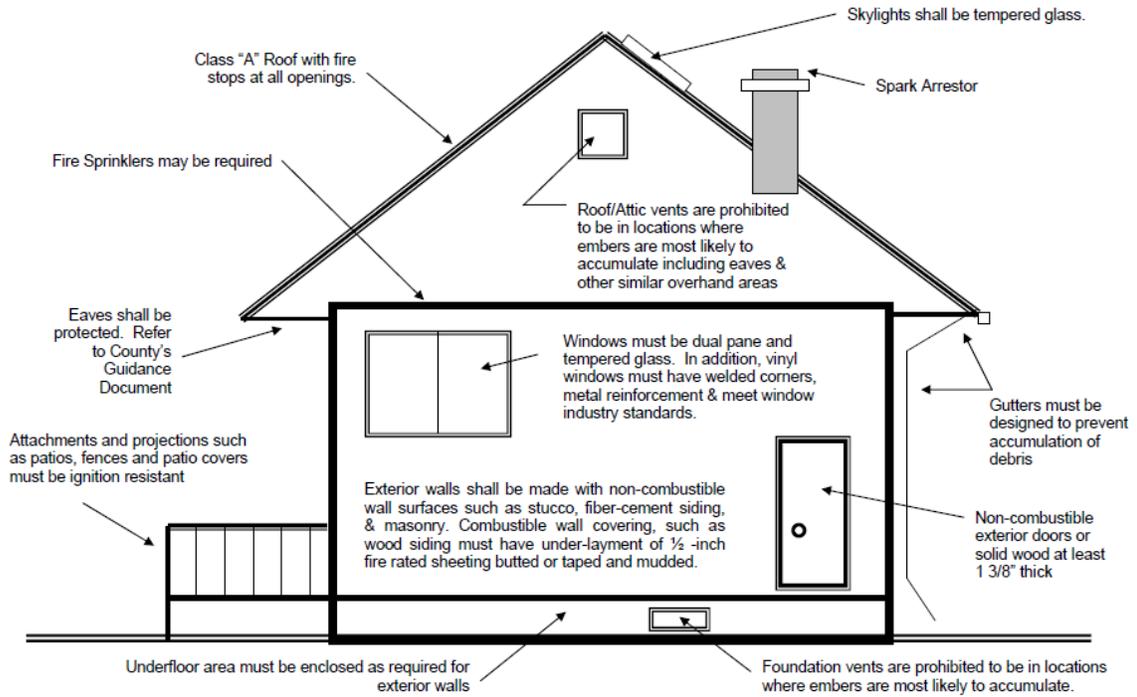
Exterior doors will be approved non-combustible construction, solid core wood not less than 1-3/8 inches thick (or equivalent) and have a fire resistive rating of not less than 20 minutes.

All windows will be provided with 1/8 inch metal mesh or similar non-combustible screens to prevent embers from entering the structure during high wind conditions.

Any damaged or replacement window, siding, roof coverings, and other mitigation measures will meet or exceed the original intent of the fire protection discussed in this Plan.



County of San Diego, Department of Planning and Land Use
FIRE RESISTIVE CONSTRUCTION REQUIREMENTS
 BUILDING DIVISION



DPLU #662 (5/08)

5201 RUFFIN ROAD, SUITE B, SAN DIEGO, CA 92123 • (858) 565-5920 • (888) 336-7553
[HTTP://WWW.SDCDPLU.ORG](http://www.sdcdplu.org)

APPENDIX D

DEFENSIBLE SPACE AND VEGETATION

Additional Zone 1 Fuel Modification Requirements

All undesirable non-native vegetation (See APPENDIX A) will be removed and replanted with drought tolerant, fire resistant landscaping.

Vegetation may include single or cluster of trimmed fire resistant native and ornamental plants (oaks, sumac, toyon, SEE APPENDIX A.)

Dense plant masses adjacent to the structures and at bases of trees and tree clusters will not be placed in this Zone. Provide low growing, fire resistive, deep rooted, drought tolerant planting to maintain erosion control and soil stability, especially on manufactured slopes.

Native or ornamental trees to be retained within fuel modification zones shall be pruned to maintain a vertical separation of approximately ten (10) feet above underlying shrubs or groundcover. Pruning of the shrubs will minimize the impact of the tree pruning.

Trees and large shrubs over 15 feet in height (oaks, sumac, toyon, etc.) shall be pruned to provide clearance between plants of three (3) times the height of understory plants, or 10 feet, whichever is greater.

Trees may be planted and maintained as individual specimens, or clustered with no more than three (3) trees in a single cluster with a minimum distance between mature canopies of 20 feet. Avoid planting trees directly uphill of one another.

Tree canopies will not be allowed to overhang the roof of any structure; the outer edge of the canopies of mature trees will be a minimum of ten (10) feet from the building eaves, and free of all dead or dying parts.

All the dead material must be pruned out of all vegetation on an annual and as-needed basis by June 1st of each year.

Mature heights of new shrub plantings will be a maximum of 36 inches.

Zone 1 Defensible Space is an irrigated landscaping zone. This zone may be irrigated with micro-irrigation when overhead irrigation may cause erosion.

Firewood and combustible material shall not be stored within thirty (30') of buildings and structures, under unenclosed spaces beneath buildings or structures, or on decks or under eaves, canopies or other projections or overhangs.

Highly flammable plant species will be permanently removed from Zone 1 Defensible Space because of their susceptibility to wild land fire. Additionally, certain ornamental plants shall not be planted or allowed to become established within the Zone 1 Defensible Space unless otherwise specified as acceptable in the Recommended Plant List in Appendix A or as approved by the Fire Marshal.

Additional Zone 2 Fuel Modification Requirements

If shrubs are located underneath a tree's drip line, the lowest branch shall be at least three times as high as the under story shrubs or 10 feet, whichever is greater.

Large continuous masses of shrubs and understory less than 15 feet in height will be thinned to remove fuel and provide at least ten (10) feet between shrub masses, or individual shrubs. Thinning will reduce the overall canopy coverage of the area a minimum of fifty (50) percent.

Mulches, chips and other small multi-cuttings (cut to less than two inches in diameter and four inches in length) will only be evenly spread over the area no more than 6 inches at least 50 feet from structures. This can be used to prevent grass and weed encroachments within the treated areas. Mulching helps to maintain soil moisture for designated plants, reduces the growth of annual grasses, and minimizes soil erosion.

There is a very high probability that the openings will be dominated with non-native weed or grass species. Therefore, all grasses and weeds are to be mowed or weed-whipped to a four (4) inch stubble height by June 1st of each year or when the fuels become cured, whichever occurs first. Any vegetation biomass (debris and trimmings) produced by thinning and pruning shall be removed from the site or converted to mulch by chipping and evenly distributed to a maximum depth of four (4) inches and kept at least 50 feet from a structure.

Additional General Fuel Modification Measures

Brush removal shall be completed prior to commencing any flammable construction.

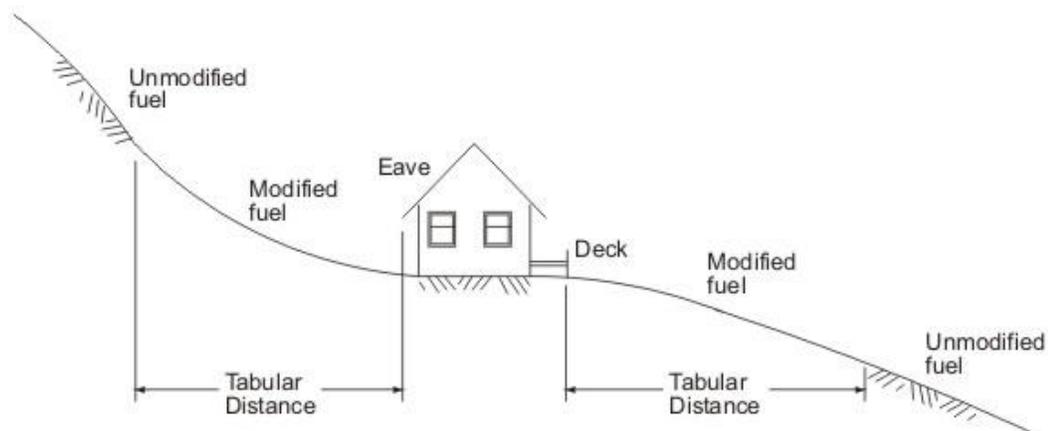
During construction at least 50 feet of clearance around the structures shall be free of all flammable vegetation as an interim fuel modification zone.

The annual completion of all designated Fuel Modification Treatments will occur prior to June 15th.

All individual landscaping plans, including additional structures, will comply with the Fire Protection Plan.

Trees and plants will be planted in accordance with the County of San Diego Approved Plants for Defensible Space in Fire Prone Areas List or as approved by the Deer Springs Fire Protection District.

Any disputes of yard landscaping regarding the interpretation of this Fire Protection Plan (FPP) will be decided by the Deer Springs Fire Marshal. The Fire Marshal's decision will be final and binding on the landowner.



Example of Fuel Modification Zone configuration for 100' depth between structure and unmodified fuel – “tabular distance” is the required lateral distance, without regard to distances produced by slope inclination or declination, from the edge of buildings to the unmanaged vegetative fuel bed.

APPENDIX E BEHAVE-PLUS FIRE MODELING



BehavePlus 5.0.5

Sun, May 27, 2012 at 11:29:10

Page 1

Inputs: SURFACE, SIZE, SPOT, IGNITE

Description Rua Michelle SH-7 SDGE Right-of-Way

Fuel/Vegetation, Surface/Understory

Fuel Model sh7

Fuel/Vegetation, Overstory

Downwind Canopy Height ft 10

Fuel Moisture

1-h Moisture % 1

10-h Moisture % 3

100-h Moisture % 5

Live Herbaceous Moisture % 30

Live Woody Moisture % 50

Weather

20-ft Wind Speed (upslope) mi/h 30

Wind Adjustment Factor .5

Air Temperature oF 85

Fuel Shading from the Sun % 0

Terrain

Slope Steepness % 28.62

Ridge-to-Valley Elevation Difference ft 120

Ridge-to-Valley Horizontal Distance mi .15

Spotting Source Location MW

Fire

Elapsed Time h 1

Run Option Notes

Maximum reliable effective wind speed limit IS imposed [SURFACE].

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 is blowing upslope [SURFACE].

Output Variables

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

Flame Length (ft) [SURFACE]

(continued on next page)



Input Worksheet (continued)

Area (ac) [SIZE]

Perimeter (ch) [SIZE]

Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]

Probability of Ignition from a Firebrand (%) [IGNITE]

Notes



Rua Michelle SH-7 SDGE Right-of-Way

Surface Rate of Spread (maximum)	284.2	ch/h
Heat per Unit Area	2955	Btu/ft ²
Fireline Intensity	15398	Btu/ft/s
Flame Length	38.0	ft
Area	1336.2	ac
Perimeter	605	ch
Spot Dist from a Wind Driven Surface Fire	1.5	mi
Probability of Ignition from a Firebrand	100	%



Discrete Variable Codes Used
Rua Michelle SH-7 SDGE Right-of-Way

Fuel Model

sh7 Very high load, dry climate shrub (S) (147)

Spotting Source Location

MW Midslope, Windward

**Inputs: SURFACE, SIZE, SPOT, IGNITE**

Description	Rua Michelle SH-5 Open Space	
Fuel/Vegetation, Surface/Understory		
Fuel Model		sh5
Fuel/Vegetation, Overstory		
Downwind Canopy Height	ft	10
Fuel Moisture		
1-h Moisture	%	1
10-h Moisture	%	3
100-h Moisture	%	5
Live Herbaceous Moisture	%	30
Live Woody Moisture	%	50
Weather		
20-ft Wind Speed (upslope)	mi/h	30
Wind Adjustment Factor		.5
Air Temperature	oF	85
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	28.62
Ridge-to-Valley Elevation Difference	ft	120
Ridge-to-Valley Horizontal Distance	mi	.15
Spotting Source Location		MW
Fire		
Elapsed Time	h	1

Run Option Notes

Maximum reliable effective wind speed limit IS imposed [SURFACE].
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 is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]
Heat per Unit Area (Btu/ft²) [SURFACE]
(continued on next page)



Input Worksheet (continued)

Fireline Intensity (Btu/ft/s) [SURFACE]
 Flame Length (ft) [SURFACE]
 Area (ac) [SIZE]
 Perimeter (ch) [SIZE]
 Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]
 Probability of Ignition from a Firebrand (%) [IGNITE]



Rua Michelle SH-5 Open Space

Surface Rate of Spread (maximum)	450.1 ch/h
Heat per Unit Area	2235 Btu/ft2
Fireline Intensity	18440 Btu/ft/s
Flame Length	41.3 ft
Area	3357.4 ac
Perimeter	958 ch
Spot Dist from a Wind Driven Surface Fire	1.6 mi
Probability of Ignition from a Firebrand	100 %



Discrete Variable Codes Used
Rua Michelle SH-5 Open Space

Fuel Model
 sh5 High load, dry climate shrub (S) (145)

Spotting Source Location
 MW Midslope, Windward

**Inputs: SURFACE, SIZE, SPOT, IGNITE**

Description	Rua Michelle On Site	
Fuel/Vegetation, Surface/Understory		
Fuel Model		SCAL18
Fuel/Vegetation, Overstory		
Downwind Canopy Height	ft	5
Fuel Moisture		
1-h Moisture	%	1
10-h Moisture	%	3
100-h Moisture	%	5
Live Herbaceous Moisture	%	30
Live Woody Moisture	%	50
Weather		
20-ft Wind Speed (upslope)	mi/h	30
Wind Adjustment Factor		.5
Air Temperature	oF	85
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	10
Ridge-to-Valley Elevation Difference	ft	20
Ridge-to-Valley Horizontal Distance	mi	.15
Spotting Source Location		MW
Fire		
Elapsed Time	h	1

Run Option Notes

Maximum reliable effective wind speed limit IS imposed [SURFACE].
 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 is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]
 Flame Length (ft) [SURFACE]
 (continued on next page)



Input Worksheet (continued)

Area (ac) [SIZE]

Perimeter (ch) [SIZE]

Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]

Probability of Ignition from a Firebrand (%) [IGNITE]



Rua Michelle On Site

Surface Rate of Spread (maximum)	186.3	ch/h
Heat per Unit Area	4672	Btu/ft ²
Fireline Intensity	15954	Btu/ft/s
Flame Length	38.6	ft
Area	584.4	ac
Perimeter	397	ch
Spot Dist from a Wind Driven Surface Fire	1.6	mi
Probability of Ignition from a Firebrand	100	%

Discrete Variable Codes Used
Rua Michelle On Site

Fuel Model

SCAL18 Sage / Buckwheat

Spotting Source Location

MW Midslope, Windward



Inputs: SURFACE, SIZE, SPOT, IGNITE

Description		Rua Michelle Grass
Fuel/Vegetation, Surface/Understory		
Fuel Model		1
Fuel/Vegetation, Overstory		
Downwind Canopy Height	ft	1
Fuel Moisture		
1-h Moisture	%	1
10-h Moisture	%	
100-h Moisture	%	
Live Herbaceous Moisture	%	30
Live Woody Moisture	%	20
Weather		
20-ft Wind Speed (upslope)	mi/h	30
Wind Adjustment Factor		.5
Air Temperature	oF	85
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	10
Ridge-to-Valley Elevation Difference	ft	20
Ridge-to-Valley Horizontal Distance	mi	.15
Spotting Source Location		MW
Fire		
Elapsed Time	h	1

Run Option Notes

Maximum reliable effective wind speed limit IS imposed [SURFACE].
 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 is blowing upslope [SURFACE].

Output Variables

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

(continued on next page)



Input Worksheet (continued)

Area (ac) [SIZE]
 Perimeter (ch) [SIZE]
 Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]
 Probability of Ignition from a Firebrand (%) [IGNITE]



Rua Michelle Grass

Surface Rate of Spread (maximum)	1145.2	ch/h
Heat per Unit Area	137	Btu/ft2
Fireline Intensity	2868	Btu/ft/s
Flame Length	17.5	ft
Area	25350.5	ac
Perimeter	2480	ch
Spot Dist from a Wind Driven Surface Fire	0.9	mi
Probability of Ignition from a Firebrand	100	%



Discrete Variable Codes Used
Rua Michelle Grass

Fuel Model	1	Short grass (S)
Spotting Source Location	MW	Midslope, Windward

APPENDIX F FIRE PROJECT FACILITY AVAILABILITY FORM



COUNTY OF SAN DIEGO DEPARTMENT OF PLANNING AND LAND USE: Zoning PROJECT FACILITY AVAILABILITY FORM, Fire

Please type or use pen		F						
SCSS Development, LLC Owner's Name 12905 Sedge Court Owner's Mailing Address San Diego CA 92129 City State Zip	858-922-6424 Phone Street CA 92129 State Zip	ORG _____ ACCT _____ ACT _____ TASK _____ DATE _____ AMT \$ _____ DISTRICT CASHIER'S USE ONLY						
SECTION 1. PROJECT DESCRIPTION TO BE COMPLETED BY APPLICANT								
A. <input type="checkbox"/> Major Subdivision (TM) <input type="checkbox"/> Specific Plan or Specific Plan Amendment <input type="checkbox"/> Minor Subdivision (TPM) <input type="checkbox"/> Certificate of Compliance: <input type="checkbox"/> Boundary Adjustment <input type="checkbox"/> Rezone (Reclassification) from _____ to _____ zone. <input type="checkbox"/> Major Use Permit (MUP), purpose: _____ <input type="checkbox"/> Time Extension... Case No. _____ <input type="checkbox"/> Expired Map... Case No. _____ <input type="checkbox"/> Other _____		Assessor's Parcel Number(s) (Add extra if necessary) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">187-520-11</td> <td style="width: 50%;"></td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	187-520-11					
187-520-11								
B. <input checked="" type="checkbox"/> Residential Total number of dwelling units <u>4</u> <input type="checkbox"/> Commercial Gross floor area _____ <input type="checkbox"/> Industrial Gross floor area _____ <input type="checkbox"/> Other Gross floor area _____		Thomas Bros. Page <u>1109</u> Grid <u>F2</u> 25569 Rua Michelle Project address Street Escondido 92026 Community Planning Area/Subregion Zip						
C. Total Project acreage <u>5.67</u> Total lots <u>4</u> Smallest proposed lot <u>1.07</u>								
OWNER/APPLICANT AGREES TO COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT. X Applicant's Signature: _____ X Date: <u>5-16-11</u> Address: <u>12905 Sedge Court, San Diego, CA 92129</u> Phone: <u>858-922-6424</u> (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 <u>DEER SPRINGS FIRE PROTECTION DISTRICT</u> Indicate the location and distance of the primary fire station that will serve the proposed project: <u>STATION 12, 1321 DEER SPRINGS ROAD / 2.5 MILES AT 6 MINUTES</u>								
A. <input checked="" type="checkbox"/> Project is in the District and eligible for service. <input type="checkbox"/> Project is not in the District but is within its Sphere of Influence boundary, owner must apply for annexation. <input type="checkbox"/> Project is not in the District and not within its Sphere of Influence boundary. <input type="checkbox"/> Project is not located entirely within the District and a potential boundary issue exists with the _____ District.								
B. <input checked="" type="checkbox"/> 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 <u>6 MINUTES</u> minutes. <input type="checkbox"/> Fire protection facilities are not expected to be adequate to serve the proposed development within the next five years.								
C. <input type="checkbox"/> District conditions are attached. Number of sheets attached: _____ <input checked="" type="checkbox"/> 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.								
<input checked="" type="checkbox"/> Within the proposed project <u>160</u> feet of clearing will be required around all structures. <input checked="" type="checkbox"/> 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 <u>George E. Lucia</u>	Phone <u>760-752-7600</u> Date <u>8-24-11</u>						
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.								



DPLU-399F (12/09)

DEER SPRINGS FIRE PROTECTION DISTRICT
ESCONDIDO, CA 92026
(760) 749-8001

APPENDIX G
DEER SPRINGS FIRE PROTECTION DISTRICT REVIEW DOCUMENTS



Deer Springs Fire Protection District

8709 Circle R Drive • Escondido, CA 92026 • tel 760-749-8001 • fax 760-749-6572

TPM #: 21192

Date: 2/15/2012

Name: Rua Michelle

APN: 187-520-11

Project Address: 25569 Rua Michelle, Escondido, CA 92026

Page 1 OF 3

Listed below are the systems and/or modifications required for your project. Compliance with the following items is a condition of Final Approval of the Tentative Parcel Map (TPM). These conditions are required as acceptable solutions to the adverse fire conditions impacting fire fighting and emergency operations for the site/project and shall be added to the map.

PLEASE NOTE THAT ANY RE-INSPECTION WILL COST \$100.00

1. This project is protected by the Deer Springs Fire Protection District / CAL FIRE. Prior to any construction occurring on any parcel, the applicant shall contact this fire department for verification of current fire protection development requirements. All new construction shall comply with the existing California Fire Code requirements and all applicable statutes, codes, ordinances or standards of the Deer Springs Fire Protection District.
 2. The project area is considered a high fire hazard brush area and has large quantities of native brush adjacent to the project site. This creates an extreme fire hazard. (DSFPD Ord. 10172)
 3. A fuel break of 100 feet (brush and weed abatement) around all sides of structures is required prior to construction. The clearance is to be maintained all year long. (DSFPD Ord. 10172)
NOTE: Any biological / archeological open space, riparian zones or other environmental land restrictions shall be maintained. Location of buildings or operations shall be designed so as to not cause fire code mandated clearing within these protected areas.
- **Fire Protection Plan:** A "Full Report" shall be submitted using the County of San Diego's "Report Format and Content Requirements". One copy shall be submitted to DSFPD Fire Marshal for review.
 - **Roadways** shall be a graded width of 28 feet, with an improved width of 24 feet.
 - **Cul-de-Sacs** shall be required for access roadways when determined by DSFPD. Dimensions shall have a minimum improved turning radius of 36 ft. and 40 ft. graded.

- **"No Parking, Fire Lane" Signs** shall be installed on access roadways and cul-de-sacs. These signs shall be posted at locations designated by the DSFPD Fire Marshal. Fire Lane curbs shall be painted red. Signs shall be per Calif. Vehicle Code 22500.1
- **Roadway & Driveway Accesses:** Shall have a minimum vertical clearance of 13 ft. 6".
- **Roadways & Driveways** exceeding 150 feet in length shall have an approved "turnaround" at the terminus. Turnarounds must not be used for parking of vehicles, or otherwise obstructed. Parcels 2 and 3 require an approved hammerhead turnaround.
- **Driveways** shall be a minimum width of 16 feet and improved with Asphaltic Concrete (min. depth 2 inches) or Portland Cement Concrete (min. depth 4 inches). No Decomposed Granite (DG) allowed.
- **Roadways & Driveways** shall not exceed 20% grade. Averages are not acceptable.
- **Roadways & Driveways** exceeding 15% - 20% grade will be accepted only with a mitigation of a surface of Portland Cement Concrete (PCC) with a heavy broom finish perpendicular to the direction of travel.
- **Roadway & Hydrant Improvements** are to be installed and serviceable prior to issuance of building permit.
- **Fire Hydrant(s)** shall be installed prior to combustibles at the project site. Minimum 8-inch mains with a 6-inch riser, with (1) 4 inch, and (1) 2-½ inch discharge outlets.
Location: An additional hydrant is required at the radius return of the culdesac.
Required fire flow: 2500 gpm at 20 psi for 2 hours.
Waterlines must be installed, and hydrants accepted by the water district prior to combustible materials being brought to the construction site.
- **Fire Hydrant Blue Dot Markers** shall be installed on roadway adjacent to hydrant location
- **Residential Automatic Gates:** Shall be equipped with an approved over-riding system (Knox Product). "Knox" system application forms are available at DSFPD Sta. 11 on 8709 Circle R Dr.
- **High Fire Hazard Areas:** Construction methods for exterior wildfire exposure in a wildland-urban interface fire area shall be as provided in Chap. 7A of the County Building Code.
- **Structure setback from Top of Slope:** Single-story structures shall be setback a minimum 15 feet horizontally from top of slope to the farthest projection from a roof. A two-story structure shall be setback a minimum of 30 feet horizontally from top of slope to the farthest projection from a roof. (See fire code for additional restrictions.)
- **Residential Automatic Fire Sprinkler System** (NFPA-13D) shall be installed. Attics used as storage areas and garages are to be protected. Minimum water supply shall be a 1-inch meter. Minimum pipe size shall be 1-inch diameter.

- **Street Name Signs** shall be installed as per County of San Diego standards. Private and/or public roads serving this project shall be named.
- **Map Updates:** New developments shall provide map updates in a format (1": 400') compatible with current department mapping services, and shall be charged a reasonable fee for updating all response maps.
- **Fair Share Contributions:** The developer needs to fund their fair share of contributions to off-site suppression and E.M.S. provisions to include, but not limited to, infrastructure and personnel. This needs to be negotiated before finalization of the map.

If you have any questions or concerns regarding the above or wish to discuss other mitigation alternatives, contact the DSFPD Fire Marshal.

DO NOT REMOVE THIS LETTER FROM YOUR PLANS. THIS WILL BREAK THE SEAL OF THE FIRE MARSHAL AND WILL VOID THE PLANS.

Cathey Solo, Fire Prevention Specialist
Deer Springs Fire Protection District.



DEER SPRINGS FIRE PROTECTION DISTRICT BOARD POLICY MANUAL

POLICIES AND PROCEDURES

Policy #: D02

Approved: February 9, 2010

Revised:

Fire Protection Plans (FPP)

In keeping with Resolution 2008-04, the Deer Springs Fire District Board intends to implement the following policy and procedures for the specified FPPs that involve any project that has more than ten (10) units or that depends upon the "shelter in place" concept, whether expressly or by implication.

The intent of this policy is to allow for a timely turnaround in the review of FPPs, but also to allow the Board to have input on FPPs meeting the specified criteria. The Board wishes to insure that there is time to review the specified FPPs in the event that significant issues might arise on which the Board will want to have input.

When the District's Fire Marshal receives a FPP that satisfies the specified criteria, the Fire Marshal shall, within, three (3) business days of receipt of the FPP, notify each Board member by email that such an FPP has been received and is available for review at the District's headquarters, currently located on Circle R Drive. If any Board member wishes to comment on the FPP, that Board member shall, within seven (7) days notify the Board President, with a copy to the Fire Marshal and the Fire Chief. The Board President shall either place the item on the agenda for the next regular Board meeting or shall call a special meeting for the consideration of the FPP. Any comments made by the individual Board members shall be included as an attachment to the Fire Marshal's comments on the FPP.

In the event that no Board member requests the FPP to be added to the Agenda within the seven (7) working review period, the Fire Marshal shall complete the FPP using the District's current procedures.

In keeping with Resolution 2008-04 the Fire Marshal shall notify us in the following format when notifying Board members that an FPP is available which meets the specified criteria:

Number of units in the development
Single Family Units
Multi-unit (Apartment or Condos)
Topography (Mountainous or Level)
Sufficient existing ingress or egress
Shelter in Place Community (Y/N)
Name of Developer

APPENDIX H
SAN DIEGO COUNTY FIRE AUTHORITY REVIEW DOCUMENTS



County of San Diego

PUBLIC SAFETY GROUP

1600 PACIFIC STREET, SAN DIEGO, CALIFORNIA 92101

RON LANE
DEPUTY CHIEF ADMINISTRATIVE OFFICER
(619) 531-4535
FAX (619) 232-2436

KEN MILLER
RALPH STEINHOFF
FIRE SERVICES COORDINATORS
SAN DIEGO COUNTY FIRE AUTHORITY
8525 GIBBS DRIVE
SUITE 201
SAN DIEGO CA 92123

January 24, 2012

County of San Diego
Department of Planning and Land Use
5201 Ruffin Road Suite B
San Diego CA 92123-1666

Attn: Marisa Smith, Project Planner

Ref: **TPM 21192**
Rua Michelle
Deer Springs Fire Protection District (DSFPD)

Following are the County Fire Marshal comments regarding the subject Tentative Parcel Map. The project is in the Deer Springs Fire Protection District. No comments have been received from the Fire District to date regarding this project. County Fire Marshal comments are offered to provide an overview of fire code requirements; the DSFPD will provide more specific requirements.

The project is in Wildland Urban Interface, State Responsibility Area, and "Very High" Fire Severity Zone according CalFire FRAP map layer displayed on LUEG-GIS mapping layers. County Building Code Chapter 7A applies.

We reviewed a Project Facility Availability Form (DPLU 399F) dated August 2, 2011 by then-acting Fire Marshal George Lucia. Fire Conditions letter from DSFPD, the local fire authority, was deferred by FM Lucia, and will be required.

The project is located in Wildland Urban Interface (WUI) and in State Responsibility Area (SRA). Fire Severity is zoned on CalFire FRAP maps as "Very High" Fire Severity, the highest category.

The State Board of Forestry and Fire Protection certified recent San Diego County Consolidated Fire and County Building Codes as a package as meeting the CCR Title 14 "SRA Fire Safe Regulations" requirements, and authorizing its use in lieu of Title 14. The County, as land planning authority, is obligated to enforce it. Because the project is in State Responsibility Area, County Consolidated Fire Code (CCFC) requirements must be applied in addition to Deer Springs FPD Fire Code.

Fire Jurisdiction

The project is within the Deer Springs Fire Protection District jurisdiction, which provides structural and wildland fire protection, fire prevention and emergency medical services on a year-around basis. Primary wildland fire protection responsibility is California Department of Forestry and Fire Protection (CAL FIRE).

GENERAL PLAN Conformance [San Diego County General Plan Chapter 7 Safety Element: *Minimize injury, loss of life, and damage to property resulting from structural or wildland fire hazards*]

The recently updated San Diego County General Plan includes fire-related goals and policies in a number of chapters in the document, including as examples:

- Emergency Travel Time Standards;
- Access Requirements including road connectivity, facilitating emergency responder access and concurrent evacuation;
- Ignition resistance of structure exterior and water supply in wildfire areas; and
- Mitigation of the impact of new development on emergency resources.

Impact

[San Diego County General Plan Chapter 7 Safety Element – Goal S-6; Policy S-6.3 **Funding Fire Protection Services.** *Require development to contribute its fair share towards funding the provision of appropriate fire and emergency medical services as determined necessary to adequately serve the project.*]

This project may have an impact on the availability of fire services. Mitigation may be necessary, and may be required in the form of participation in a Community Facility District or similar approved mechanism to generate adequate funding, in perpetuity, for emergency and prevention services staffing and facilities. The local fire authority, DSFPD, will provide details of any such requirements.

Additional impacts, such as access, fuel (vegetation) modification, and water supply, are identified below.

Emergency Travel Time

[San Diego County General Plan Chapter 7 Safety Element – Goal S-6; Policy S-6.4 **Fire Protection services for Development.** *Require that new development demonstrate that fire services can be provided that meets the minimum travel times identified in Table S-1 (Travel Time Standards from Closest Fire Station).*]

Travel times are calculated using accepted methodology based on the travel distance from the fire station to the farthest dwelling unit of the development. Fire stations must be staffed year-round, publicly supported and committed to providing service.

This project meets General Plan requirements for emergency travel time from DSFPD Station 12 on Deer Springs Road at Mesa Rock (approximately 2.46 miles, 4.8 minutes per NFPA and ISO standards). Note: Travel distance as determined by LUEG-GIS mapping was relatively consistent with the Project Facility Availability Form (DPLU399F), but our computation of travel time is less than five minutes, utilizing the nationally recognized standards referenced above.

Access Roads - General

[San Diego County General Plan Chapter 7 Safety Element – Goal S-3; Policy S-3.5 **Fire Access Roads.** *Require development to provide additional access roads when necessary to provide for safe access of emergency equipment and civilian evacuation concurrently.*]

Fire access roads must meet County Consolidated Fire Code requirements, including but not limited to: minimum improved width, vertical clearance, paving, weight support, proximity to structures, posting (FIRE LANE CVC 22500.1), naming, street name signs (DS-13), maximum dead-end length, turnaround, connectivity, gating standards, maintenance.

The existing road (Rua Michelle) must fully meet current County Consolidated Fire Code, from Jesmond Dene Road to the east end of parcel 2. Requirements include minimum paved width of 24 feet, vertical clearance of 13 feet 6 inches, support capability of 75,000 pounds, and fire lane posting as determined by DSFPD.

Maximum Allowable Dead-End Length

[County Consolidated Fire Code §96.1.503.1.2, CCR Title 14 §1273.09 - San Diego County General Plan Chapter 4 Mobility Element - Guiding Principles for Mobility - Chapter 7 Safety Element - Goal S-3; Policy S-3.5 **Fire Access Roads.** Require development to provide additional access roads when necessary to provide for safe access of emergency equipment and civilian evacuation concurrently]

The maximum allowable dead-end road length for parcels zoned 1 acre to 4.99 acre is 1,320 feet, measured from the most remote emergency vehicle turnaround to the first opportunity to evacuate the area in two remote directions. The project is approximately 1200 feet measured from Jesmond Dene Road to the east end of parcel 2. Maximum allowable dead-end distance is not exceeded.

Fire Access - Turnarounds [County Consolidated Fire Code §96.1.503.2.5]

Dead-end fire apparatus roads more than 150 feet in length, including private driveways, shall be provided with approved means for turning the fire apparatus around. Turnarounds must not be used for parking of vehicles, or otherwise obstructed.

The local fire authority, DSFPD, will assess individual building plans in the course of Building Permit submittal reviews.

The project is at the terminal end of Rua Michelle and must provide a culdesac turnaround, minimum paved radius 36 feet, minimum graded radius 40 feet.

Turnarounds must be kept clear of all obstructions to fire department access, and posted NO PARKING FIRE LANE. Road easement design must include emergency vehicle turnarounds within specified road easements.

Fire Access - Road Design [County Consolidated Fire Code §96.1.503]

1. Fire apparatus access roads are required from building pads to a public way. A fire access roadway shall extend to within 150 feet of acceptable fire fighter/hoseline access to all ground level exterior portions of proposed buildings, as determined by DSFPD.
2. Fire apparatus access roads shall be provided and maintained in compliance with the County Consolidated Fire Code and the most recent edition and any amendments thereto, of private road standards as adopted by the County of San Diego (San Diego County Standards for Private Roads and Public Roads, Department of Public Works).
3. No construction involving combustible materials on the subject property can take place until fire access roads are installed and fully meet code requirements. (Exception: If prearranged with the fire authority having jurisdiction, asphalt paving shall be installed with the exception of the final lift, which may be postponed until just before building final if desired for roadway cosmetic purposes.) [California Fire Code §501.4]

Fire Access - Gates or other obstructions [County Consolidated Fire Code §96.1.503.6]

1. Any gate or other obstruction which could delay or otherwise impede emergency response must meet County Consolidated Fire Code and DSFPD

policy, and have plans approved by the local fire authority. Restrictions regarding power supply, rapid and reliable access and egress apply.

Fire Access – Maintenance [County Consolidated Fire Code §96.1.503]

1. Roads must be Public, or ownership of roads (except individual driveways) must be such that all property owners within the project share in legal and fiscal responsibility for maintaining such roads in compliance with fire codes, both those codes currently in effect, and future code changes. The obligation must be legally binding on property owners and convey with ownership transfer.

Building Pad Location on Lot [County Consolidated Fire Code § 96.1.4907]

1. Structures, including projections, shall be located not less than 30 feet away from property lines (or more if required by Zoning Ordinance), measured perpendicular to the subject property line, to reduce the potential for wildfire ignition.

Structure Setback from Top of Slope [County Consolidated Fire Code § 96.1.4907.1.3]

1. Single story structures shall be setback a minimum 15 feet horizontally from top of slope to the farthest projection from a roof. A two-story structure shall be setback a minimum of 30 feet from top of slope. (see fire code for additional restrictions.)

Fuel Modification Zones- residences [County Consolidated Fire Code § 96.1.4907]

1. A fuel modification zone of not less than 100-foot is required around all structures, in accordance with the specification of County Consolidated Fire Code §96.1.4907.4 and DSFPD Fire Code. Additional fuel modification may be required after review and approval of a Fire Protection Plan (discussed below.)

Fuel Modification – open space [County Consolidated Fire Code § 96.1.4907.1.2]

1. Where fuel modification is prohibited by regulation (example: Resource Protection Ordinance) a “Limited Building Zone” easement must be incorporated to protect structures from wildfire and to prevent fire clearing of protected species.
2. Ownership of open space areas must be such that all property owners within the project share in legal and fiscal responsibility for maintaining such open space in compliance with fire codes, both those codes currently in effect, and future code changes. The obligation must be legally binding on property owners and convey with ownership transfer.

Fire Protection Plan [County Consolidated Fire Code § 96.1.4903]

1. A Fire Protection Plan (FFP), submitted to and accepted by the local fire authority and the County Fire Marshal, is required. It must meet LUEG “Guidelines for Determining Significance for Wildland Fire and Fire Protection” policy, current County-adopted version. The FPP, prepared by a wildfire expert from the County-accepted list of consultants, shall include mitigation measures consistent with the unique problems resulting from the location, topography, geology, flammable vegetation, climate, biological constraints and biological open space of the proposed site. ?

The FPP shall address water supply, access, building ignition and fire

resistance, fire protection systems and equipment, defensible space and vegetation management, and include fire behavior computer modeling. (See LUEG Policy)

Fire Protection – sprinklers [County Consolidated Fire Code § 96.1.903.2]

1. New residential buildings and garages shall be equipped with fire sprinklers to appropriate NFPA 13 Standards as determined by the DSFPD.

Fireflow – water supply – municipal water district [County Consolidated Fire Code § 96.1.508.1.]

1. A fire hydrant exists west of parcel 1 on the north side of Rua Michelle. An additional fire hydrant is required at the radius return of the culdesac at parcel
2. Specific locations shall be approved by the local Fire Marshal.
2. In this Wildland Urban Interface fire area, the required fire flow in the water mains is 2,500 gallons per minute.
3. Hydrants shall meet County standards identified at Fire Code section 96.1.508.1.1.3.
4. Waterlines must be installed, and hydrants accepted by the water district and capable of full required fireflow prior to combustible materials being brought to the construction site. [California Fire Code §501.4]

BUILDING PLAN REVIEW (informational only)

[County Building Code §91 Chapter 1, Chapter 7A]

1. At the time of building plan review, the Fire Marshal will check for fire code compliance with the County and California Fire Codes, County and California Building Codes (including CBC Chapter 7A), and DSFPD Ordinances and Policies.

Please contact FM Dawson with any questions paul.dawson@sdcounty.ca.gov.

Paul Dawson, Fire Marshal
San Diego County Fire Authority
Public Safety Group

c: Cathey Solo, Fire Prevention Bureau, DSFPD
Chris Amstoy, District Fire Chief, DSFPD

**ATTACHMENT A
PROJECT ISSUE CHECKLIST**

PROJECT NAME:		SCSS Development Tentative Parcel Map		Project Number(s):		TPM 21192, ER 02-08-054A	
Summary of Document Requests and Reviews							
<i>Purpose: To track requests for technical studies, maps/plot plans, and other requested information</i>						Last Updated: 2/3/2012	
Plan/Study Request	Status of Review	Date Requested	Date of Study	Date Accepted			
Tentative Parcel Map (TPM)	Resubmit	1/4/2012	1/4/2012				
Preliminary Grading Plan	Resubmit	1/4/2012	1/4/2012				
RPO Slope Map	Resubmit	1/4/2012	1/4/2012				
Ownership Verification	Submit	2/3/2012					
Fire Protection Plan (FPP)	Submit	2/3/2012					
Memorandum(s) of Understanding	Submit	2/3/2012					
Preliminary Drainage Study	Accepted	1/4/2012	1/4/2012	2/3/2012			
Stormwater Management Plan	Accepted	1/4/2012	1/4/2012	2/3/2012			

**ATTACHMENT A
PROJECT ISSUE CHECKLIST**

Page 2

Item No.	Subject Area	Issue, Revision or Information Required	Issue Resolution Summary (Include Conditions)	Date Identified	Date Resolved
DPLU (Department of Planning and Land Use) Planning and CEQA Comments					
1 - 1	General Plan Conformance	The density proposed by this subdivision is consistent with the County of San Diego General Plan (SR-1).	Informational	2/3/2012	
1 - 2	General Plan Conformance	The County of San Diego General Plan, Land Use Element (Policy LU-6.9) requires development to conform to the natural topography to limit grading; incorporate and not significantly alter the dominant physical characteristics of a site; and to utilize natural drainage and topography in conveying stormwater to the maximum extent practicable. In accordance with this policy, the grading quantity shall be reduced to the maximum extent possible and cut and fill slopes shall be reduced in height where feasible.	See 1-13	2/3/2012	
1 - 3	Zoning Ordinance	The lot sizes proposed by this subdivision are consistent with the minimum lot size required by zoning (1 acre).	Informational	2/3/2012	
1 - 4	Subdivision Ordinance	In accordance with Section 81.401(d) of the County Subdivision Ordinance, a lot shall have at least 50 feet of frontage, exclusive of side yard setbacks required in the zone in which the lot is located, measured at the right-of-way line, but shall also have at least 60 feet of frontage measured at the right-of-way line. Parcel 4, as currently designed, has only 60 feet of frontage. The "B" setback designator for this parcel requires a side yard setback of 15-feet and therefore, Parcel 4 must have 80-feet of frontage along Rua Michelle. Please redesign Parcel 4 to meet this requirement.	From 2/8/12 meeting...Applicant will correct - but pointed out cul-de-sac measurement.	2/3/2012	
1 - 5	Subdivision Ordinance	In accordance with Section 81.401(h) of the County Subdivision Ordinance, the side lines of each lot shall be at approximately right angles or radial to the road upon which the lot fronts with a maximum deviation of up to 10 degrees for a minimum distance of 1/3 of the lot depth. Parcel 1, as currently designed, does not meet this section of the Subdivision Ordinance.	From 2/8/12 meeting..Applicant will correct	2/3/2012	
1 - 6	Tentative Parcel Map	The Tentative Parcel Map number (TPM 21192) shall be added to the corrected TPM.	To be corrected by applicant	2/3/2012	
1 - 7	Tentative Parcel Map	The TPM indicates that there is an existing easement "D" but the location of the easement is not shown on the TPM. Please show the location of the easement granted by Document No 2001-0353529 on the TPM.	To be corrected by applicant	2/3/2012	
1 - 8	Tentative Parcel Map	The existing zoning shown under number 3 on the TPM should be RR, not RR1. Please revise.	To be corrected by applicant	2/3/2012	

**ATTACHMENT A
PROJECT ISSUE CHECKLIST**

Item No.	Subject Area	Issue, Revision or Information Required	Issue Resolution Summary (Include Conditions)	Date Identified	Date Resolved
1 - 9	Tentative Parcel Map	The existing general plan designation shown under number 4 on the TPM should be SR-1 (Semi-Rural Residential, 1 du/ 1, 2, 4 acres).	To be corrected by applicant	2/3/2012	
4- 10	Tentative Parcel Map	The note regarding grading shown under number 9 on the TPM should reflect the grading quantities shown on the Preliminary Grading Plan (7,130 cubic yards of balanced cut and fill).	Removed per Project Manager	2/3/2012	2/3/12
1 - 11	Tentative Parcel Map	The regional plan category shown under number 15 on the TPM should be Semi-Rural, not CUDA. Please revise.	To be corrected by applicant	2/3/2012	
1 - 12	Tentative Parcel Map	The zone box on the TPM should show the "use regulations" as RR (not RR1) and the "density" as --- (not 1). Please revise.	To be corrected by applicant	2/3/2012	
1 - 13	Prelim. Grading Plan	The Preliminary Grading Plan indicates that the maximum cut and fill slope heights are 12-feet while the cut and fill slopes on Parcel 4 appear to exceed 20-feet in height. Please clarify the maximum cut and fill slope heights. Please also see comment 1-2 regarding General Plan conformance.	Applicant will demonstrate in writing why this standard is/will be met	2/3/2012	
1 - 14	Slope Map	The density calculation on the slope map must be completed using the density calculations for lands designated SR-1. Please see Attachment F for the density formula from the County of San Diego General Plan. A revised slope map must be submitted with the correct formula.	To be corrected by applicant	2/3/2012	
1 - 15	Ownership Verification	Please provide documentation that Salim Miro is authorized to sign the application materials and tentative parcel map on behalf of SCSS Development, LLC.	From 2/8/12 meeting... Applicant provided verification of name change/ownership verification	2/3/2012	2/8/12
1 - 16	Deer Springs Fire Protection District	Form 399F which was completed by the Deer Springs Fire Protection District indicates that the district will submit conditions at a later date. Any conditions received by the County will be forwarded to the applicant.	Informational	2/3/2012	

**ATTACHMENT A
PROJECT ISSUE CHECKLIST**

Item No.	Subject Area	Issue, Revision or Information Required	Issue Resolution Summary (Include Conditions)	Date Identified	Date Resolved
1 - 17	Fire	Fire Protection Plan [County Consolidated Fire Code § 96.1.4903] A Fire Protection Plan (FPP), submitted to and accepted by the local fire authority and the County Fire Marshal, is required. It must meet LUEG "Guidelines for Determining Significance for Wildland Fire and Fire Protection" policy, current County-adopted version. The FPP, prepared by a wildfire expert from the County-accepted list of consultants, shall include mitigation measures consistent with the unique problems resulting from the location, topography, geology, flammable vegetation, climate, biological constraints and biological open space of the proposed site. The FPP shall address water supply, access, building ignition and fire resistance, fire protection systems and equipment, defensible space and vegetation management, and include fire behavior computer modeling. (See LUEG Policy).	Applicant will begin FPP process. Paul Dawson will meet w/ DSFPD to determine if short or long form FPP is required, and supply applicant with conditions from DSFPD	2/3/2012	
DPW (Department of Public Works) Comments					
2 - 1	General	"It is recommended that the project engineer review and analyze the offsite and onsite roadways serving the proposed project to verify compliance with the applicable road standards and necessary certifications. The project engineer should also verify that access easements are in place pursuant to the County Subdivision Ordinance."	Informational only	2/3/12	
2 - 2	Fire	Provide comments from Deer Springs Fire Protection District. Project's conditions may be revised upon further review and input from the Deer Springs Fire Protection District.		2/3/12	
2 - 3	TPM	Show existing easement to Valley Center Water District per document recorded May 31, 2001 as instrument no. 2001-0353529 of official records as indicated under note D.	Applicant will correct	2/3/12	
2 - 4	TPM/Pre. Grading Plans	Show existing 10' (in width) SDG&E easement as indicated on the TPM, note A.	Applicant will fwd copy of DEH map showing septic layout for DPW review.	2/3/12	
2 - 5	TPM/Pre. Grading Plans	Show existing 6' (in width) Pacific Telephone and Telegraph Company as indicated on the TPM, note B. Note B states that: "Centerline of existing 6' easement granted to Pacific Telephone and Telegraph Company...." However, B also calls out for 40' and 60' wide existing private road "Rua Montreux". Please advise.	Applicant will fwd copy of DEH map showing septic layout for DPW review.	2/3/12	
2 - 6	TPM/Pre. Grading Plans	Show existing easement to Valley Center Water District per document recorded May 31, 2001 as instrument no. 2001-0353529 of official records as indicated under note D.	To be corrected by applicant	2/3/12	

**ATTACHMENT A
PROJECT ISSUE CHECKLIST**

Item No.	Subject Area	Issue, Revision or Information Required	Issue Resolution Summary (Include Conditions)	Date Identified	Date Resolved
2 - 7	Pre. Grading Plans	Please show proposed private road easement as indicated under note E.	To be corrected by applicant	2/3/12	
2 - 8	Preliminary Grading Plans	Show treatment BMP for a portion of the proposed cul-de-sac, indicate with arrows.	Applicant will show arrow at bio swales	2/3/12	
2 - 9	SWMP/HMP	The Storm Water Management Plan (SWMP) meets current DPW criteria.	Informational only	2/3/12	
2 - 10	Preliminary Drainage Study	The Preliminary Drainage Study meets current DPW criteria.	Informational only	2/3/12	
DEH (Department of Environmental Health) Comments					
3 - 1	Septic	<p>DEH has reviewed the proposed 4-lot tentative parcel map and the associated preliminary grading plan, submitted to DEH on 1/4/12. All parcels are proposed to be served by Valley Center Municipal Water District for their potable water source. The following certification will be used based on percolation testing conducted by Ronald C. Ashman, RCE:</p> <p>Parcel 1 1200 gallon septic tank and 480' of standard leach line with 100% reserve area to serve a 4 bedroom single family dwelling.</p> <p>Parcel 2 1200 gallon septic tank and 500' of standard leach line with 100% reserve area to serve a 4 bedroom single family dwelling.</p> <p>Parcel 3 1200 gallon septic tank and 450' of standard leach line with 100% reserve area to serve a 4 bedroom single family dwelling.</p> <p>Parcel 4 1200 gallon septic tank and 530' of standard leach line with 100% reserve area to serve a 4 bedroom single family dwelling.</p>	Informational only	2/3/12	
3 - 2	Septic	The Department of Environmental Health, Land and Water Quality Division, has no objection to the approval of this tentative parcel map.	Informational only	2/3/12	
DPR (Department of Parks and Recreation) Comments					
4 - 1	Trails	The County Department of Parks and Recreation has reviewed this project and determined that there are no trail or pathway requirements.	Informational only	2/3/12	

REFERENCES

- California Code of Regulations, Title 24, Part 9 - 2010 *California Fire Code*
- California Code of Regulations, Title 24, Part 2 - 2010 *California Building Code*
- California Code of Regulations, 2010 *California Residential Code*
- California Code of Regulations, Title 14, Part 1, SRA Requirements
- Power Line Fire Prevention Guide*, California State Fire Marshal's Office
- San Diego County Code, Title 9, Division 6, Chapter 1 - 2011 *San Diego County Consolidated Fire Code*
- County of San Diego *Guidelines for Determining Significance and Report Format and Contents Requirements*, San Diego County DPLU Land Use and Environment Group, Second Revision, August 31, 2010
- San Diego County General Plan, Chapter 7 – Safety Element
- San Diego County Ordinance 10147, Title 6, Chapter 4, Division 8 – *Defensible Space Ordinance for Fire Protection*
- Community Wildfire Protection Plan*, Deer Springs Fire Protection District, December 2005
- Fire Dynamics* – Federal Emergency Management Agency, U.S. Fire Administration, National Fire Academy, May 1999
- National Wildfire Coordinating Group - *S-290 Intermediate Fire Behavior Manual*
- National Wildfire Coordinating Group – *S-390 Introduction to Wildfire Calculations Manual*
- National Fire Protection Association Pamphlet 299 *Protection of Life and Property from Wildfire*
- Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model*, Joe H. Scott & Robert Burga, US Dept. of Agriculture, Forest Service Rocky Mountain Research Station, General Technical Report RMRS-GTR- 153, June 2005

Aids to Determining Fuel Models For Estimating Fire Behavior, Hal E. Anderson, United States Department of Agriculture Forest Service Intermountain Forest and Range Experiment Station General Technical Report INT-122, April 1982

Physics-Based Modeling for WUI Fire Spread – Simplified Model Algorithm for Ignition of Structures by Burning Vegetation, USDA Fire Research Division, NISTIR 7179

San Diego County Native Plants Third Edition, James Lightner

2009 *International Wildland Urban Interface Code*, International Code Council