

Fire Protection Plan Valley Center Professional Center

APN 186-280-03

**Prepared for the County of San Diego
and the Valley Center Fire Protection District**



January 26, 2021

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**SDC PDS RCVD 2-18-21
STP20-008**

Valley Center Professionals LLC
Fire Protection Plan

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Valley Center Professionals LLC

FIRE PROTECTION PLAN

APN 186-280-03

January 26, 2021

EXECUTIVE SUMMARY

This Fire Protection Plan (FPP) evaluates the proposed Valley Center Professionals LLC (VCP) development to ensure it does not unnecessarily expose people or structures to fire risks and hazards. The FPP identifies and prioritizes the measures necessary to adequately mitigate those impacts. The FPP has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions and fire history. It considers water supply, access, structure ignitability and fire resistive building materials, fire protection systems and equipment, impacts to existing emergency services, defensible space and vegetation management.

This FPP also lists fuel modification requirements to mitigate the exposure of people or structures from a significant risk of loss, injury or death from wildland fires. Zone 1 is the first five feet surrounding any structure and attached deck, avoid anything combustible- this includes woody plants, mulch, woodpiles, combustible trellises, and stored items. Zone 1 is an excellent location for walkways, or hardscaping with pavers, rock, or pea gravel. Zone 2 will be an irrigated landscaped zone 5-50 feet from the structure. The goal is to eliminate connectivity between islands of vegetation by the spacing trees, removing lower branches of trees and shrubs, and creating areas of irrigated vegetation. Fire resistive, irrigated plants should be maintained by removing dead, dry, and down material. Zone 3 is the area beyond Zone 2 where the goal is to moderate potential fire behavior by reducing the density of the native trees, shrubs, and plants or grasses by 50% to slow fire spread and reduce flame heights. Shrubs and trees should be well spaced and pruned to eliminate ladder fuels, where fire can climb from a ground fire to the tops of the vegetation. Due to the lack of a fully developed Zone 3, the entire area will be incorporated into Zone 2. The property owners and any successors will be responsible to the Valley Center Fire Protection District Fire Marshal for the completion of all designated Fuel Modification Treatments in common areas.

Finally, this plan and its requirements will be incorporated by reference into the final project Conditions of Approval to ensure compliance with codes/regulations and significance standards.

1.0 INTRODUCTION

This Fire Protection Plan (FPP) has been prepared for the Valley Center Professionals LLC (VCP) project. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types) climatic conditions, and fire history. The plan addresses water supply, access (including secondary/emergency access where applicable), structural ignitability and fire resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect one or more at-risk communities and essential infrastructures. The plan recommends measures that property owners will take to reduce the probability of ignition of structures throughout the area addressed by the plan.

General Information

Project Manager:	Gary R. Wynn, Wynn Engineering Inc.
Approving Departments:	
Fire Authority:	Valley Center Fire Protection District
Engineering:	San Diego County Department of Planning & Development Services
Water:	Valley Center Municipal Water District

The Fire Protection Plan for the VCP Center will be submitted to and approved by the Valley Center Fire Protection District (VCFPD) and the San Diego County Department of Planning & Development Services. The FPP is based upon current requirements, as of the date of this report, of the VCFPD and San Diego County regarding Wildland Fire Protection Plans. Government and private industry codes and standards include: pertinent local ordinances; the 2020 County of San Diego Consolidated Fire Code; 2018 International Urban-Wildland Interface Code; 2018 International Fire Code; California Code of Regulations Title 24, Part 9, and Title 14, Section 1280; 2019 California Fire Code; Amendments including Appendices to Chapters 1 & 4 and Appendices B, F, & H; Chapter 7A, California Building Code; the 2020 California State and Local Responsibility Area Fire Hazard Severity Zone Map; California Government Code, Sections 51175 through 51189; California Public Resources Code, Sections 4201 through 4204; California Government Code, sections 51175 through 51189; California Public Resources Codes sections 4201 through 4204; and the National Fire Protection Association Standard 13-D

The VCP Fire Protection Plan (FPP) has two main objectives. First, the VCP FPP provides fuel treatment guidelines for the business owners and occupants. Second, the FPP provides features for the developer, architect, builder, and the Valley Center Fire Protection District to improve the relative safety of the office buildings from approaching wildfire. Appendices attached to this FPP provide additional information that shall be considered a part of this FPP.

This Fire Protection Plan Includes:

- A wildland fire hazard rating assessment and expected fire behavior of both on-site and off-site native vegetative fuels;
- A long-term perimeter vegetative fuel modification treatment and maintenance plan to minimize the potential loss of any structure due to wildland fires;
- A long-term interior open space fuel modification treatment plan and “Firewise Landscaping” criteria to be utilized around the planned structures;
- “Ignition Resistant Building Features” that will be required for all structures;

- A review of existing architectural plans required building features, and community protection systems (e.g., water and access), and specifications to assure these plans, features and systems adequately protect life and property.

The term “Firewise” contained within this document is a term used to describe an approach which emphasizes community responsibility for planning in the design of a fire safe community as well as effective emergency response, and individual responsibility for safer home design and construction, landscaping, and maintenance of fuel treatment areas. “The Firewise USA” program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent losses.”



**Figure 1 Overhead View of
Valley Center Professional Center**

1.1 Project Location, Description and Environmental Setting

1.1.1 Project Location

The community of Valley Center is in an unincorporated section of northern San Diego County and is located approximately nineteen (19) miles east of the Pacific Ocean. The community historically was based on agriculture and farming. More recently, Valley Center has attracted new residential and commercial developments along the central corridor of Valley Center Road, County Road S-6. The establishment of a sewer system allowed for the growth within two hub areas and the Valley Central Professionals development will be located in the southern hub. Prior to the development of the sewer system, growth of Valley Center had been slowed by the requirement of a

minimum of 2 acres for most parcels. East of Valley Center are several Indian Reservations, The Cleveland National Forest and further east, Borrego Springs State Park.

The proposed VCP project is located on the west side of Valley Center Rd. less than ½ mile north of the intersection of Woods Valley Road and Valley Center Rd. Access to the VCP site will be off of Valley Center Road. which is a four-lane divided road. S-6 originates on the Pacific Coast and ends at the junction with State Highway 76 which is approximately 10 miles east of Valley Center.

1.1.2 Project Description

The project consists of two separate buildings on a 2.52-acre parcel. A bio-retention basin and a total of 56 on-site parking stalls, including 6 electric vehicle stalls, will be created on-site. The property resides within a residential/commercial split zone. On the western portion of the site, no commercial building is allowed and only parking will occupy the area. The first building will be a dental office of approximately 3140 square feet and the second building will be occupied by a



Photo 1: Valley Center Road Frontage, (Note Existing Fire Hydrant Which Will Remain Following Construction)

veterinarian clinic consisting of 7572 square feet. The project will be constructed between two existing commercial buildings, to the north is a single-story auto parts store, to the south is a two-story mixed-use facility, both buildings are currently occupied.

1.1.3 Environmental Setting

1.1.3.1 Dates of Site Inspections/Visits Conducted

Two site visits were conducted during August and November 2020, as well as numerous phone calls to determine pertinent information concerning the environmental setting.

Site Visit & Purpose

Date

#1 Initial Field Visit

August 21, 2020

Evaluate lot layout, fuel types and primary
access road locations

#2 Office Visit, VCFD

November 18, 2020

Evaluate tentative map and site
Fire protection requirements,
Create photo log.

#3 Site Visit

January 20, 2021

Review FPP with on-site details
Additional photos of site.

1.1.3.2 Topography

The topography of the development site sits in a narrow flat valley with short, narrow ridgelines to the west and east. A slight east facing slope of less than 1 percent covers the area, the slope increases to a maximum of 5-6 percent. The elevation increases a total of 27 feet, from a low of 1325 feet along Valley Center Road to a maximum elevation of 1352 feet 400 feet to the west. The slope continues to a height of over 1600 feet approximately 400 feet further west. East of the project site across Valley Center Road, approximately one-half mile are granite



Photo 2: Slope Showing Current Vegetation on West Side and Slight East-facing Slope. (Note: Heavier vegetation offsite to the west.

covered ridges with moderate slopes. These ridges are broken up by numerous saddles and intersecting drainages. A seasonal creek flows to the west from this ridgeline and crosses VCR to the north of the site approximately one-half mile.

1.1.3.3 Climate

The climate within the project area is characterized as a Mediterranean type of climate with generally mild, wet (14 -16 inches of rainfall per year) winters, with the bulk of the annual precipitation falling between January and March. Long, hot and very dry summer seasons frequently occur with occasional, multi-year droughts.

The most critical wind pattern to the project area is an off-shore wind coming out of the north/northeast, typically referred to as a Santa Ana wind. Such wind conditions are usually associated with strong (> 60-MPH), hot, dry winds with very low (< 15%) relative humidity. Santa Ana winds originate over the dry desert land and can occur anytime of the year; however, they generally occur in the late fall (September through November) when non-irrigated vegetation is at its lowest moisture content.

The typical prevailing summer time wind pattern is out of the south or southwest and normally is of a much lower velocity (5-12 MPH with occasional gusts to 30-MPH) and is

associated with higher relative humidity readings (> 30% and frequently more than 60%) due to a moist air on-shore flow from the ocean.

All other (northwest, south, west) wind directions may be occasionally strong and gusty. However, they are generally associated with cooler moist air and have higher relative humidity (> 40%). They are considered a serious wildland fire weather condition when wind speeds reach > 20-MPH.

Fire agencies throughout the western United States rely on a sophisticated system of Remote Automated Weather Stations (RAWS) to monitor weather conditions and aid in the forecasting of fire danger. The closest RAWS to the project is the San Pasqual Valley RAWS. The data acquired from RAWS is important to modeling wildland fire behavior. **FIREWISE 2000, LLC** determined that the San Pasqual Valley RAWS is relatively new, having only been in operation since October of 2009. Another RAWS that was evaluated was the Valley Center RAWS station. This RAWS is located north of the project site approximately 7 miles and is located at a slightly higher elevation. The Valley Center RAWS site captured significant weather data during the major southern California fires of October 2007 with winds gust exceeding 40 mph and relative humidities less than 10%. Note: in late October, strong winds, low relative humidity are indicators of a Santa Ana wind event.



Photo 3: North Side Existing Fuel Treatment

1.1.3.4 On-and Off-Site Vegetation

There is no significant native wildland vegetation on the building site due to the repeated mowing of the annual vegetation. The removal of the native vegetation allowed the introduction of non-native grasses. Long term changes in fuel types have led to dry weather grass becoming the dominate fuel type. The western portion of the 2 ½ acre site is covered with native oak trees with a large grass understory crop.(See Photos #1 and #2). Similar slopes to the south with undisturbed fuel type show a grass/shrub fuel type common in Southern California, Coastal Sage/Scrub, SCAL 18. SCAL 18 fuels include sage, ceanothus, lemonade berry, coastal buckwheat and laurel sumac. These fuels are summer or drought deciduous dropping leaves and small branches up to one time each year. The Coastal Sage/Scrub will build up large accumulations of dead and down material over time increasing the fire risk to the area.

1.1.3.5 Fire History

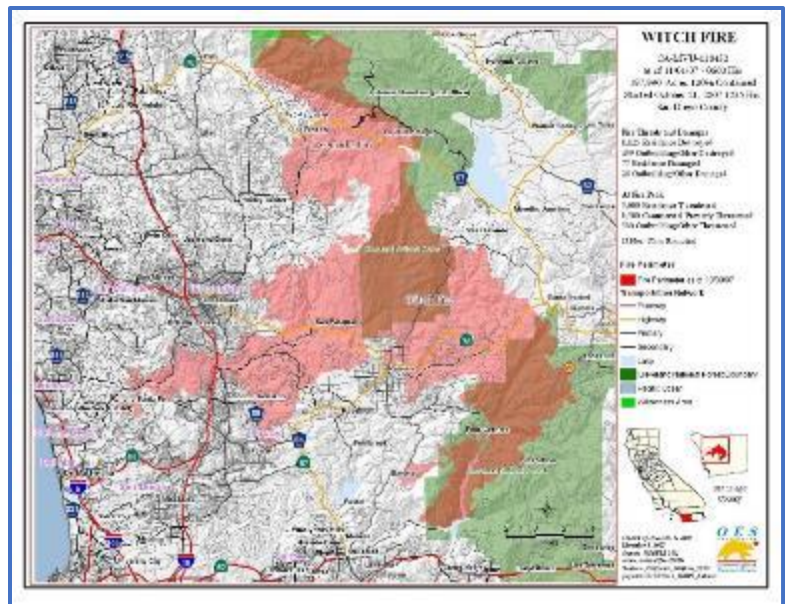
The available data suggests that in the second half of the 20th Century the frequency of small fires increased in Southern California while their average size decreased. This was due primarily to human caused fires and rapid-fire suppression. In San Diego County, this has resulted in an increased rate of burning in low elevation coastal scrubland, especially the coastal sage



Figure 1: Above: Paradise Fire 2003

Figure 2: Below: 2007 Witch, Poomacha and Guejito Wildfire Progression

scrub formation near the urban development areas. It also indicates over 600 large fires of over 100 acres in the foothills and mountains from 1910-1999. Recently however several years of drought have contributed to major fires (in excess of 50,000 acres) that have swept through San Diego County resulting in large losses of property and damaged watershed.



The Witch Fire in October of 2007 burned over 197,990 acres, caused the evacuation of over 500,000 people, and caused two civilian fatalities. Combining with the Guejito Fire within the first day, the fires destroyed over 70 homes approximately 4½ miles to the south in the City of Escondido. The combined Witch, Poomacha and Guejito Fires rate of spread was stopped north and east of the development site due to a change in slope, winds diminishing and fuel types changing, just over 2 miles to the east. The 2003 Paradise Fire

which began on the Rincon reservation burned south through the reservation into Valley Center and into the City of Escondido. burned along the eastern boundary of the City of Escondido and Rincon Del Diablo Fire District. The western spread of the fire was halted due to a decrease in the east winds and fire suppression activities.

1.1.3.6 On-site and Off-site Land Uses

The existing 2.52-acre parcel of land proposed for development is currently in a disturbed state as the vegetation has been converted to both native and non-native grasses. The surrounding land is either rural residential, commercial or undeveloped land. The undeveloped land south and west of the site includes open fields and oak tree covered hillsides. Commercial structures adjoin the site immediately to the north and south. East of the development site across VCR are several small, mixed use commercial buildings, behind the commercial strip is a golf course and sewer facility. Two large housing developments are being constructed less than one-half mile north on Valley Center Rd.

2.0 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

The Valley Center Professionals FPP evaluates the potential adverse environmental effects that the VCP commercial development may have from wildland fire and proposes appropriate mitigations for any adverse impacts to ensure that this development does not unnecessarily expose people or structures to a significant risk of loss, injury or death in regard wildland fire. The following guidelines for the determination of significance are used:

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

The project is partially bordered by existing development and where wildlands are adjacent to the project, fuel modification and other requirements outlined in this FPP reduce the exposure of people or structures to a less than significant risk of loss, injury or death involving wildland fires.

2. Would the project result in inadequate emergency access?

Valley Center Road is currently classified as a Prime Arterial road on the County of San Diego's circulation plan. The road is four-lanes wide with a continuous turn lane in front of the site. Access from Valley Center Road will both be improved and widened, being designed to the latest standards of the County of San Diego with improved sight lines along the existing hiking trail. A new fire hydrant would allow fire apparatus to park off of Valley Center Rd and reduce traffic hazards.

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

The Valley Center Fire Protection District (VCFPD) provides fire and EMS services to the development area. The existing facilities are more than adequate to provide acceptable emergency service and response times.

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

The project developer will be connecting to existing Valley Center Municipal Water District water and sewer lines. Both buildings will be fully sprinklered and a new fire hydrant will be placed in front of the structures along the south side of the access road for easy accessibility to the hydrant and fire department connections. (See Water Availability Form and Plot Map [see Appendix ‘G’ and “C”]).

3.0 ANTICIPATED FIRE BEHAVIOR IN THE VICINITY

The fire behavior calculations in Table 3.1 predict a maximum rate of spread of 221.7 feet/minute in the coastal sage scrub fuel model under Santa Ana winds at 60 mph. (See Section 4.6 and Appendix ‘F’ for details of the Fire Behave Modeling) Winds of 60-mph are the expected maximum velocity on the property. The potential for wildfire exposure to the structures under east wind conditions would be from ember production from a fire moving rapidly through Valley Center from the east. Radiant heat and direct flame contact would be a concern if neighboring structures became involved with fire. Under the same weather conditions, the same fire will move at a more rapid rate of spread when burning through treated fuels but fireline intensity and flame length will be greatly reduced improving the survivability of lives and property.

Fires burning on the same slope with more typical southwest winds show similar results; lower rates of spread, flame lengths and fire intensity in treated fuel than in the native fuel types that have been untreated. Converting the SCAL 18 fuels to a much lower intensity host fuel type such as GR1 has increased the safety and survivability for the guests, occupants, and structures.

TABLE 3.1
A Comparison of Fire Conditions Under 60 mph Northeast Wind Conditions
Untreated Versus Treated Fuels
SCAL 18 vs. GR1- Grass

<u>Untreated Fuels SCAL 18</u>		<u>After Fuel Treatment GR1</u>	
Rate of Spread	221.7 ft/min	Rate of Spread	41.4 ft/min.
Fireline Intensity	16105 BTU/ft/sec	Fireline Intensity	67 BTU/ft/sec
Flame Length	38.8 Feet	Flame Length	3.1 Feet

Under southwest wind conditions which changes the alignment of the wind and slope to fully out of alignment, according to Table 3.2, a fire in an untreated grass/shrub fuel model will have a much-reduced rate of spread, 111.2 feet/minute compared to a fire in east wind conditions. The same fire in an area with treated fuels as recommended in Fuel Treatment Zones 2 and 3 will have an even greater impact on slowing down the rate of spread and overall fire intensity. The table also shows the reduced potential for wildfire exposure to the structures due to radiant heat, and direct flame contact in treated fuel areas.

TABLE 3.2
A Comparison of Fire Conditions Under 30 mph Southwest Wind Conditions
Untreated Versus Treated Fuels
SCAL 18 vs. GR1- Grass

<u>Untreated Fuels SCAL 18</u>		<u>After Fuel Treatment GR1</u>	
Rate of Spread	111.1 ft/min	Rate of Spread	90.9 ft/min.
Fireline Intensity	8032 BTU/ft/sec	Fireline Intensity	148 BTU/ft/sec
Flame Length	28.1 Feet	Flame Length	4.5 Feet

One or more of the following factors start structure ignitions from wildfires: “a combination of radiant heat, convective heat, direct flame contact and burning embers being projected by vegetation fire to a structure and its immediate environment”.

During periods of high fire intensity and strong, dry winds, convective firebrands have the capability of being transported over great distances. “Ignition Resistant Building Materials” will be used in the construction of the structures within VCP to reduce the potential of firebrands entering the homes or catching exterior components on fire. Accordingly, wind driven embers and radiant heat issues are addressed in this FPP.

4.0 ANALYSIS OF PROJECT EFFECTS

The project demonstrates compliance, or offers the “*same practical effect*”, with applicable fire regulations, including but not limited to the California Fire Code, California Code of Regulations, San Diego County Consolidated Fire Code.

The VCP comprehensive Fire Protection Plan and the project design are consistent with the San Diego County DPLU recommendations including fuel modification.

The project meets the emergency response objectives identified in the Public Facilities Element of the County General Plan or offers Same Practical Effect.

4.1 Adequate Emergency Services

The VCP is within the response area of the Valley Center Fire Protection District (VCFPD). The nearest fire station is Fire Station #1 located at 28234 Lilac Road, Valley Center, CA. Fire Station 1 is the headquarters station which includes administration and fire prevention. One engine company is covered at the fire station with three firefighters staffing the engine. A paramedic ambulance is also staffed at Station 1 with two firefighters. Normal response time for Engine 181 to the project site is less than three (3) minutes based on computer modeling with a travel distance of 1.2 miles. The next closest Valley Center engine is located at Fire Station #2, 28205 N. Lake Wohlford Rd, Valley Center. Staffing at Station #2 is five (5) personnel covering an engine and a paramedic squad unit. Station #2 to the VCP project is approximately 5.3 miles and takes less than seven (7) minutes.

San Pasqual Reservation Fire Department would normally respond to the Valley Center Rd. area with a Type 1 engine for structure or vegetation fire dispatch as North San Diego County has organized a boundary drop policy where the closest units respond regardless of jurisdiction. Travel time for a San Pasqual engine to arrive on scene would be less than seven (7) minutes traveling less than 5 miles to the professional center. The Rincon Reservation Fire Department would respond an aerial apparatus for commercial structure fires. Rincon Fire Department is located eight (8) miles east and would require approximately ten (10) minutes to arrive on scene.

The Escondido Fire and Pauma Reservation Fire Departments might also respond to Valley Center based on the availability of fire apparatus.

The Valley Center Fire Protection District staffs two (2) engine companies, 1 squad and 1 paramedic ambulance daily. In addition, automatic and mutual aid resources are available from fire agencies throughout San Diego County. On days with predicted high or extreme wildland fire danger, there may be multiple fire starts with multiple engine companies deployed on other incidents, reducing the normal availability of resources. However, agencies, including the Valley Center FPD, frequently staff additional units to increase resource availability when extreme weather conditions are predicted.

The typical first alarm wildland dispatch for local government agencies will include a minimum of four engines, both structure and wildland, and a Battalion Chief. The Valley Center area is a State Responsibility Area (SRA) for wildland fires and is administered by CAL FIRE. CAL FIRE would respond to a first alarm assignment which could include Type III wildland engines, handcrews, helicopters, air tankers and chief officers. Upon arrival at the scene, CAL FIRE would assume command of the incident and determine firefighting strategy with Valley Center firefighters assisting as assigned.

Despite having multiple fire engines in the relatively proximity of the Valley Center Professionals, there is no assurance that Engine Company 181 will be in its station should a wildfire threaten the VCP from an ignition outside the commercial property. Engines may respond from other stations further away or from other incidents.

The goal of this FPP therefore is to make the VCP FPP as safe as possible until such time as firefighting equipment arrives, and guests or workers can be evacuated. The VCP project will be provided with a higher degree of protection from wildfire than most existing structures in San Diego County with the implementation of the fuel modifications specified in this FPP including ignition resistant construction measures and fuel treatments.

4.2 Fire Access

The VCP development will be accessed via Valley Center Road, north of the intersection with Woods Valley Road., both existing County roads. Valley Center Road is maintained by the County of San Diego, Public Works Department and proposed design changes for access from VC Rd. will meet County road standards. Road improvements include but are not limited to widening, with curbs and gutters. A turn-around for fire apparatus will be constructed in the parking lot using the main access road and the western turnoff to the second (western) parking spur. The turn-around/access roads will be constructed to meet County of San Diego Fire Code Standard 503.2.6. Driveways will be a minimum of 24-feet in width and designed to support not less than 75,000 pounds and proposed grades will be less than 15%. Slopes on the driveways may be allowed up to 20%, but will require a heavy broom, concrete surfaces for any slope exceeding 15%. Road maintenance will initially be the responsibility of the project developer. The VCP will be responsible for road, signage and markings within the project. Upkeep and maintenance will become the financial responsibility of the VC Professionals.

No gates are planned in this development. However, any future gates that may be installed, including gates on private driveways or roadways, shall be set back 30 feet from the roadway, be automatic, and be equipped with approved emergency key-operated switches overriding all command functions and opening the gate(s). gates shall also be equipped with an emergency tract control-activating strobe light sensor(s) or other devices approved by the Fire Marshal, which will activate the gate on the approach of emergency apparatus. A battery back-up or manual mechanical disconnect in case of power failure is required in case of power failure. Gates shall allow automatic egress without the use of codes or remote devices (e.g. the use of pressure pads, metal detector or infrared sensors).

Road name signs shall comply with County of San Diego Department of Public Works Design Standard #DS-13. Signs, postings, red curbs and white stencils shall conform to the requirements of Section 22500.1 of the California Vehicle Code and shall be maintained in perpetuity. "Blue dot" markers shall be installed on the pavement to indicate the location of each fire hydrant. Signs or notices shall be maintained in a clean and legible condition at all times and replaced or repaired when necessary to provide adequate visibility.

4.3 Water

The VCP project water supply will be provided by the Valley Center Municipal Water District. An extension of the public water system with a new on-site fire hydrant will provide the required fire flow to the project. The required fire flow for the project is 1500 gpm based on the total square footage of the project and the requirements of the sprinkler system. Calculations of the Valley Center Deputy Fire Marshal. A Project Facility Availability - Water Form (PDS-399W) signed by the Valley Center Municipal Water District provides documentation that the required fire flow as determined by the Valley Center Fire Marshal is available following water system improvements on the site.

Fire hydrants shall be accessible to fire department apparatus by roads meeting the requirements of Section 902.2 of the County Fire Code. Fire hydrants along roadways shall be located at intervals as approved by the VCFPD Fire Marshal. (See Fuel Treatment Map, Appendix "C", for fire hydrant locations.) The on-site fire hydrant will be marked with a reflective blue marker and the fire department connections shall be identified by a reflective green marker a minimum of three inches in diameter. Markers shall be placed in the center of the access road adjacent to the water source or as approved by the fire code official.

The design of the water system shall be submitted to the Valley Center Municipal Water District Engineering Department for approval prior to issuance of a building permit. The water supply system, fire hydrants, and fire department connections shall be installed, and tested by the contractor. The VCFPD Fire Marshal shall approve the design, and installation of fire hydrants and connections prior to the contractor bringing any combustible building materials onto the development.

4.4 Ignition-Resistant Construction and Fire Protection Systems

All structures shall comply with the ignition-resistant construction requirements: Wildland-Urban Interface sections of Chapter 7A and 7B of the County Building Code (see APPENDIX 'E'). All habitable structures shall have automatic fire sprinklers per San Diego County Code. The fire sprinkler system for interior fire protection shall meet the requirements of National Fire Protection Standard (NFPA) 13D, those of the County of San Diego and to the satisfaction of the Valley Center Fire Department. The VCFPD shall review and approve fire sprinkler installations prior to the issuance of an occupancy permit. Each building owner shall inspect and maintain their ignition resistant construction features listed in APPENDICES 'D' and 'E'.

The owners of the VCP project will be required to maintain the exterior of their property to Zone 1, 2, and 3 Fuel Modification standards as outlined in Section 4.7 and will keep the roof and rain gutters free of leaves, needles and other combustible debris. All firewood and other combustible materials must be safely stored away from the structure so that burning embers falling on or near the structure have no suitable host. The building owners must keep all doors and windows tightly closed whenever a wildland fire is reported in the near vicinity. The integrity of the doors and windows must be maintained to reduce the chances of embers being blown underneath and starting a fire in the garage area.

4.4.1 Structure Setbacks from Protected Land –

Minimum setback from property lines abutting national forests, open space preserves, and designated riparian areas is 100 feet.

4.4.2 Setbacks from Slopes - Single story structures shall have a minimum setback of fifteen (15) feet, measured horizontally, from the top of slopes to the farthest projection of the roof. A single-story structure shall be less than twelve (12) feet above grade. A two-story structure shall have a minimum setback of thirty (30) feet, measured horizontally, from the top of slopes to the furthest projection of the roof. Structures greater than two-stories in height may be required to have a greater slope setback to be determined by the VCFPD Fire Marshal.

4.5 Defensible Space and Vegetation Management

4.5.1 Off-Site Fire Hazard and Risk Assessment

The wildland area immediately to the west is primarily vegetated with native and non-native annual grasses with scattered oak tree clusters. The hills further west and north (approximately 1-mile) are covered with moderate stands of oak trees with an understory of grass, one-to-three feet high with a moderate grass load. Fire spread will be carried primarily through fine herbaceous fuels, either curing or dead. These are surface fires where the herbaceous material, besides litter and dead-down stem wood from the oak tree overstory, contribute to the fire intensity. While the primary carrier of fire in this area will be the grass, small amounts of fine dead fuel may be present and contribute to the fire spread and intensity. The fuel bed is more continuous than in the gr2 fuel model than in the other dry climate grass fuel models, which contain patchy areas with little to no grass. The small number of shrubs found do not affect fire behavior. Open stands of scrub oak that cover between one-third or two thirds of the hillside area also include scattered clumps of fuels that generate higher intensities and may produce firebrands.

South of the project site adjacent to the property line is an undeveloped area most recently used as a dirt parking area and outdoor feed store. No structures are present along the outer boundary with the project site. Fuels have been treated including mowing and weed whipping of annual grasses. Approximately 1/2-mile further south are moderately steep slopes covered with



Photo 4: Southern Hillside Along Valley Center Rd.

coastal sage/scrub, a common fuel type found specifically in Southern California. Plants found in this fuel type include Coastal Sage Scrub, Buckwheat, and Mulefat Scrub. Other commonly found vegetation consists of black sage, California sagebrush, blue blossom Ceanothus, laurel sumac, lemonade berry, cactus, and toyon. Typical trees found in the creek bottoms include several species of oaks, sycamores and California peppers. Non-native eucalyptus and palm trees are found further south along west facing slopes along Valley Center Rd.

In coastal sage/scrub, a high percentage of these native plants have developed an abundance of dead material which is typical of Coastal Sage Scrub, normal low-intensity fire occurrence would remove the accumulation of dead and down material. The area south of Valley Center has seen several fires in the past 35 years, the last fire that burned through the hillside was in 2003 during the Paradise Fire. “The amount of fuel present is expressed quantitatively in terms of weight of fuel per unit area. This may be available fuel (consumable fuel) or total fuel and is usually dry weigh.”¹ Fuel load is measured by the amount of available fuel per unit area, usually tons per acre.

North and east of the site the wildland fuel becomes patchy along moderately steep slopes due to wide-spread rock formations that break up the fuel continuity. The primary fuel that will carry fire would be the grass understory with a small amount of litter under the oak trees. A westerly flowing creek skirts along the base of several slopes on the east side of Valley Center Road, flows under the road in drainage culverts and then westerly through a new housing development. The primary ground cover along the creek type is a mixture of grasses and reeds. While the creek is seasonal, the underground water table provides enough moisture year-around to support the growth of large stands of trees including sycamore, oak, eucalyptus and occasional pepper along the creek bed.



Photo 5: Hillside to the North of Project with Rock Covered Slopes

The goal of any FPP is to prevent the loss of lives, homes, and personal property when wildfires do occur with the challenge of allowing well planned commercial development interspersed with fully functioning mixed chaparral habitats. This goal is accomplished by requiring communities and facilities to be built with fire resistant materials and well designed and maintained fuel modification treatments that will safely mitigate the High Fire Hazard to insignificant levels. Therefore, the proposed fuel modification treatments, “Firewise” landscaping, and the use of ignition resistant building construction standards will mitigate the potential loss of any of the buildings and structures due to direct fire impingement, wind driven embers or radiant heat around the perimeter of the buildings.

¹ NWCG Glossary of Wildland Fire, PMS 205

4.5.2 On-Site Fire Hazard and Risk Assessment

The VCP project site is unoccupied, and the native fuels have been removed by annual mowing. The primary fuel on site is light grass which is less than 6-inches in height, most similar to fuel model gr1. The amount of space available to the south of the proposed building sites will be limited, less than the desired 100-feet. To reduce the threat of a fire impacting either building, the exterior walls will be constructed to meet the requirements for 1-hour fire resistance. There is sufficient area for defensible space west of the building sites and to the east, a fully developed Zone 1 and Zone 2 will be provided. Limited space for Zone 3 will require mitigations such as 1-hour rated exterior fire walls on all buildings, to reduce the possible impact of an approaching wildfire. North of the two building sites, the area for defensible space varies from 75-100 feet along the parking lot and access road. The soil retention basin will be irrigated and planted with only approved plantings from the County of San Diego's Acceptable Plant List for Plants in Fire Prone Areas. (See Appendix "A")

4.6 Vegetative Fuels Assessment/Fire Behavior

"Can wildland fire behavior really be predicted? That depends on how accurate you expect the answer to be. The minute-by-minute movement of a wildland fire will probably never be totally predictable—certainly not from weather conditions forecast many hours before the fire. Nevertheless, practice and experienced judgement in assessing the fire environment, coupled with a systematic method of calculating fire behavior, yields surprisingly good results (Rothermel 1983)".

The BEHAVE Plus Fire Behavior Prediction and Fuel Modeling System—Burn Subsystem by Patricia L. Andrews and Collin D. Bevins, is one of the best systematic methods for predicting wildland fire behavior. The current generation of Behave Plus is 5.0.5 and has been designed for use on a personal computer. The BEHAVE Plus fire model describes a wildfire spreading through surface fuels, which are the burnable materials within six (6') feet off the ground and contiguous to the ground. Regardless of the limitations expressed, experienced wildland fire managers can use the BEHAVE Plus modeling system to project the expected fire intensity, rate-of-spread and flame lengths with a reasonable degree of certainty for use in Fire Protection Planning purposes. Of these three fire behavior projections, flame length is the most critical in determining structure protection requirements. The FIREWISE 2000, LLC. evaluation team used the computer based BEHAVE Plus 5.0.5: Fire Behavior Prediction and Fuel Modeling System to make the fire behavior assessments for the VCP project.

Comparisons of computer calculations to observed fire behavior by FIREWISE 2000, LLC. wildland fire staff has validated the modeling system for use in wildland planning. Key components of this FPP are the projections of expected wildland fire behavior for the existing native and non-native fuels. Below are the fire behavior calculations for the area surrounding the VCP site followed by appropriate mitigation measures.

Two fire scenarios are presented in the tables below: two (2) calculations are based on "worst case" San Diego County fire weather assumptions with 60 mph east winds, and two calculations are based on typical 12 mph west-southwest winds. Fuel Models SCAL 18 and GR-1 were used in calculating fire behavior. Each table displays the expected Rate of Fire Spread (expressed in feet per minute), Fireline Intensity (expressed in British Thermal Units per foot per second) and Flame Length (expressed in feet) for two (2) separate BEHAVE Plus fire behavior predictions. The tables also include the calculation inputs used in the BEHAVE Plus program which were obtained from project site observations and fuel moisture levels typically observed during the local fire season.

Table 4.6.1 <u>Fire Scenario # 1</u> (Late Fire Season With 60 MPH Northeast And East Santa Ana Wind Conditions) Fire Approaching from the East	
Fire Behavior Calculation Input Data <ul style="list-style-type: none"> • 2 percent slope • 60 mph 20-foot wind speed • 90° aspect from north • 90° wind direction from north 	Anticipated Fuel Moistures <ul style="list-style-type: none"> * 1-Hour Fine Fuel Moisture of.....2% * 10-Hour Fuel Moisture of.....3% * 100-Hour Fuel Moisture of.....5% * Live Herbaceous Fuel Moisture of.....30% * Live Woody Fuel Moisture of.....50%
Expected Fire Behavior Fuel Model SCAL 18 – Sage/Buckwheat with moderate amounts of grass. Flame length moderate to high.	
Rate of Spread - 221.7 feet/minute (1.25 mph)	
Fireline Intensity - 16105 BTU's/foot/second	
Flame Length - 38.8 feet in length	
Expected Fire Behavior in Treated Fuels Fuel Model gr1 – Grass is short, patchy, and possibly heavily grazed. Spread rate moderate; flame length low	
Rate of Spread - 41.4 feet/minute	
Fireline Intensity - 67 BTU's/foot/second	
Flame Length - 3.1 feet in length	
Table 4.6.2 <u>Fire Scenario # 2</u> (30 MPH Maximum Expected Southwest Wind Conditions) Fire Approaching from the West	
Fire Behavior Calculation Input Data <ul style="list-style-type: none"> • 2 percent slope • 30 mph 20-foot wind speed • 90° aspect from north • 225° wind direction from north 	Anticipated Fuel Moistures <ul style="list-style-type: none"> * 1-Hour Fine Fuel Moisture of2% * 10-Hour Fuel Moisture of.....3% * 100-Hour Fuel Moisture of6% * Live Herbaceous Fuel Moisture of.....30% * Live Woody Fuel Moisture of.....60%
Expected Fire Behavior Fuel Model SCAL 18 – Sage/Buckwheat with moderate amounts of annual grass. Spread rate high; flame length moderate	
Rate of Spread - 111.1 feet/minute	
Fireline Intensity - 8032 BTU's/foot/second	
Flame Length - 28.1 feet in length	
Expected Fire Behavior in Treated Fuels Fuel Model gr1 – Grass is short, patchy, and possibly heavily grazed. Spread rate moderate; flame length low	
Rate of Spread - 82.7 feet/minute	
Fireline Intensity - 148 BTU's/foot/second	
Flame Length - 4.5 feet in length	

The fire behavior calculations in Tables 4.6.1 & 4.6.2 predict a maximum rate of spread greatly reduced under the maximum expected south and southwesterly wind conditions from Valley Center RAWS station

in the coastal sage fuel model with a lesser reduction in grass fuel model 1. The slope and the wind direction are no longer in full alignment and the woody live fuel moisture increased due to increased relative humidity; the rate of spread, fire intensity and flame length will be much less severe.

4.7 Required Fuel Modification Zones for Buildings, Structures and Access Roads

Projects located in Hazardous Fire Areas shall include Fuel Treatment Zones (FTZ) surrounding all structures that are greater than 250 square feet in size. San Diego County Fire Code stipulates that the FTZ be a minimum of 100-foot area surrounding and extending in all directions from all structures, in which flammable vegetation or other combustible growth is cleared away or modified, **except for:**

- Single specimens of trees or other vegetation that are well-pruned and maintained.
- Grass and other vegetation located more than 50 feet from the structure and less than 18 inches in height above the ground.
- All ornamental landscaping that is consistent with the customized County Wildland Interface plant list (See APPENDIX 'A')

The descriptions and required treatments for Fuel Modification Zones are described below. All distances in this report are measured horizontally and are depicted on the Fuel Treatment Map included herein. The responsibility for the fuel modification maintenance defined below shall remain with the current owners and any subsequent owners, and as such shall run with the land. In the event the project is repossessed or sold, the unit/agency holding title to the VCP Property will be responsible for such maintenance. Should the property owner not voluntarily maintain the property according to the fuel treatment guidelines in this FPP, the Valley Center Fire Protection District will provide written notice of abatement and require completion of the removal of annual grasses, and dead and down fuels accumulated on the site. Rather than specifying a specific time-period, the Valley Center Fire Protection District will require abatement as needed.

Maintenance of fuel treatment zones is highly important. Latham (1989) found that ember ignitions of surface fuels were primarily a function of ground fuels, especially litter depth. Also important to ignition of a ground fuel is moisture content, size of the litter material as well as the mineral content of the dead vegetation. To the benefit of the eventual owners, surface fires burn with less intensity and spread more slowly than an aerial fuel.

Below are the detailed definitions and required treatments for the Fuel Modification Zones within the project. See Fuel Treatment Map, Section 5.3, for all fuel treatments. There are three basic fuel modification zones required for construction within Valley Center. Zone 1 is the immediate area, 0' to 5', surrounding a structure, Zone 2 covers the area from the outer edge of Zone 1 to 50' from the structure, and Zone 3 is normally the area from the outer edge of Zone 2 to a distance of 100' from the structure, however, in the VCP project, all areas will be incorporated into Zone 2 due to the limited space available. In many cases, the required fuel treatments are interlinked to the adjacent building on site and adjacent fuel treatments and roadways. This results in a total of 100 feet of fuel treatment for the majority of the project.

Building "A" is located immediately along Valley Center Road. Building "A" has space on site for a fully developed Zone 1 and Zone 2, Zone 3 space isn't available on all four sides of Building A. Off-site fuel treatments and construction design will mitigate the lack of a complete Zone 3 on the west, north and east sides of the structure, including access roads, dirt walking and hiking paths and parking lots. The remaining area will be incorporated within Zone 2. On the south side of Building A, where there is limited defensible space, the south facing exterior wall will have a 1-hour rating and will be constructed with no door or window

openings to reduce the possible impact of embers or radiant heat. The remaining three exterior walls will also be 1-hour fire rated walls.

Building “B” is located less than 50’ west of Building A along the same access road. Building “B” will have space for fully developed Zone 1 and 2 along the north and west sides of the structure when counting the paved parking lots and access roads. Plantings within the landscaped areas will be irrigated and plant materials selected from the County’s approved list. Planned mitigations will reduce the potential impact to Building B by providing 1-hour fire rated exterior walls and closures, limited flammable materials around the structure and well designed and maintained fuel treatment zones. To further mitigate the lack of a full 100-foot area to develop a Zone 3, all treatments outside the Zone 1 area will be developed to Zone 2 standards.

All distances in this plan are measured horizontally. These distances are depicted on the Fire Protection Plan Map included herein in Appendix “C”. Prior to construction on any building site, all roads (primary and secondary) for this development shall be accepted by the Valley Center Fire Marshal.

Fuel Modification Zone 1 (Building/Property Owner Responsibility - (Shown as Blue --- Around Proposed Building Pads on the Fuel Treatment Map (See Appendix ‘C’)

Defined:

Zone 1 in San Diego County comprises the first 5 feet around a structure (front, back and side yards) and is commonly called the Immediate Zone. Within Zone 1, only hardscape or limited fire-resistant plantings acceptable to the Fire Authority Having Jurisdiction (FAHJ) shall be allowed. The use of flammable mulch and other combustible materials is prohibited within Zone 1.

Required Landscaping:

Zone 1 will be composed of hardscaping, either concrete, gravel, rock, or pavers surrounding the perimeter of each structure. Limited fire-resistant plantings approved by the Valley Center Fire Marshal may be permitted within the zone. All plant material must be selected from an approved drought tolerant, fire-resistant list.

Required Maintenance:

The property identified as a part of this FPP shall be maintained year-round by the property owner, VCP or any subsequent owners as required by this FPP or the VCFPD. Firewood and combustible materials such as flammable mulch, shall not be allowed within the zone. Any low-growing plant material in Zone 1 must be trimmed to 6’ to 18” in height.

Fuel Modification Zone 2 (Building/Property Owner Responsibility - (Shown as Orange on the Fuel Treatment Map)

Defined:

Zone 2, the Intermediate Zone, is commonly called the defensible space zone for fire suppression forces and protects structures from radiant and convective heat. Zone 2 consists of the area from 5’-50’ from the exterior wall surface extending out in a horizontal plane. Within the zone, flammable native vegetation shall be removed and replanted with drought tolerant, fire resistive, irrigated, plantings from the San Diego County Approved plantings list. (see Appendix A). The height of plants shall not be taller than 6” adjacent to Zone 1 to a maximum of 18” at the Zone 3 boundary. Other vegetation in this zone shall be irrigated and not exceed 10 feet in height. Trees shall not exceed 30’ in height and be approved by the FAHJ. Firewood shall not be stacked under tree canopy and stored at least 10 feet from property lines.

Required Landscaping:

- Zone 2 will be cleared of all existing native vegetation and replanted with drought tolerant and irrigated fire-resistant lawns, ground covers or shrubs.
- Landscaping shall be irrigated and primarily consist of fire resistant, maintained native or ornamental plantings usually less than 18 inches in height.
- This zone may contain occasional fire-resistant trees, and single well-spaced ornamental shrubs up to 48 inches in height, intermixed with ground covers and lawn.
- Shrubs and groundcovers may be located no closer than 5 feet from the structure provided these plants will not carry fire to the structure.
- Non-flammable concrete patios, driveways, swimming pools, walkways, boulders, rock, and gravel can be used to break up fuel continuity within Zone 2.
- Plants in this Zone need to be fire resistant and should not include any pyrophytes that are high in oils and resins such as pines, eucalyptus, cedar, cypress, or juniper species. Thick, succulent, or leathery leaf species with high moisture content are the most “fire resistant”.
- Refer to APPENDIX ‘A’ County of San Diego’s Desirable Plant List and APPENDIX ‘B’ for prohibited plants for plant selection.
- Any retained trees and all newly planted trees must be sited so that when they reach maturity the tips of their branches are at least 10 feet away from any structure, 20 feet from the crown of an adjacent tree, and must have a minimum of 6 feet of vertical separation from low growing irrigated vegetation beneath the canopy of the tree.

Required Maintenance:

The building/property owners, VCP and any subsequent owner shall maintain year-round the defined Zone 2 area to the requirements listed in this FPP and the County of San Diego’s Consolidated Fire Code, 2020 edition.

- Shrubs and trees are to be annually maintained free of dead material.
- Trees will be maintained so that their crown cover will be more than ten (10) feet from any structure.
- Tree crowns will be separated by twenty (20) feet or more on steep slopes and maintained to keep a separation of 6 feet between the ground fuels (shrubs and groundcovers) and the lower limbs.
- Any trees within Zone 2 should be irrigated, limbed up to 6-feet from the ground, pruned of dead wood, grass understory weed-whipped, and leaf drop removed to prevent large accumulations of dead material under the trees.
- All trees must be maintained to the current ANSI A300 standards [Tree, Shrub, and Other Woody Plant Maintenance —Standard Practices (Pruning)] (www.treecareindustry.org/public/gov_standards_a300.htm).

The biofiltration area within Zone 2 will be maintained as needed to remove 50% of the ground level fuels covering the zone. Non-native species will be removed, tree canopy’s will be limbed to 6-feet off the ground. A reduction of 100% of the dead and down material is required.

4.8 Cumulative Impact Analysis

The combination of San Diego County’s weather, fuel, and terrain has often contributed to intense, uncontrolled wildland fires. This was evident in the devastating Cedar, Paradise and Otay Fires of October 2003 and Witch Creek and Rice Fires of November 2007 and most recently, the Lilac Fire in 2017.

Typically, the areas of greatest concern are adjacent to urbanized areas or where residences are intermixed with wildlands. As the population of San Diego County increases and the Wildland Urban Interface (WUI) expands, fire hazards and risks will continue to be encountered. The risks associated with this project, with

greater vehicular traffic along Valley Center Road will not be significantly increased with the redesign and improvements of the small section along VC Rd. A slight increase in human activity in the immediate area may occur, but the removal of flammable fuels, and increased security should lessen the impacts of the development.

The approval of this proposal in addition to the already approved developments in the area, and future development proposals will increase the concern of wildland fires as the area becomes more urbanized. At present, the density of development in the southern commercial area along Valley Center is relatively low, with many vacant, undeveloped parcels. Current development is relatively low and includes a number of properties compliant with the fuel modification and weed abatement requirements of the County of San Diego and the Valley Center Fire Protection District.

5.0 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Several mitigation measures have been designed to improve the overall safety of the Valley Center Professions commercial development. The following list describes the proposed mitigation measures.

1. All exterior walls will be 1-hour rated firewalls. On the south side of both building “A” and “B”, no openings such as doors or windows will be constructed.
2. Both building “A” and “B” will be fully sprinklered.
3. Well-developed fuel treatments will be required throughout the entire site.
4. A new fire hydrant will be placed along the access road north of building “B”.
5. A 24-foot wide, paved fire access road will be constructed off of Valley Center Road. The access road will have a fire apparatus turn around built to reduce fire apparatus backing incidents.

5.1 Construction Standards

The structures within the VCP project shall be designed and constructed with ignition resistant construction standards and design features as per the current San Diego County Building Code. For a summary description of these construction requirements see APPENDIX ‘E’.

All combustible building materials, decks, balconies, patios, covers, gazebos and fences will be permanently prohibited in Zones 1 and 2. These structures may be allowed if constructed with Fire Resistive materials as per the San Diego County Fire Code and the San Diego County Consolidated Fire Code. The owners of the property are not restricted from having concrete patios, concrete walkways within these zones, provided the lot is large enough. Refer to APPENDIX ‘D’ for photos and descriptions of non-combustible decks, patio covers, and railings.

5.2 Additional Requirements

- Brush removal shall be completed prior to commencing any flammable construction. At least 50 feet of clearance around the structures shall be kept free of all flammable vegetation as an interim fuel modification zone during construction of structures.

- If the landowner is aware of any state or federal listed species on their property, the U.S. Fish and Wildlife Service should be notified prior to the abatement.
- Any trimmings produced by thinning and pruning will be removed from the site, or, if left, shall be converted into mulch and evenly dispersed to a maximum depth of four inches. Such trimmings will not be located within 50 feet of structures.
- Any damaged or replacement windows, siding, roof coverings, and specific non-combustible wall will meet or exceed the original intent of the fire protection discussed in this plan.
- A five to six-foot concrete masonry unit (CMU) wall will be constructed to the rear of (south side) of Building A and B as mitigation to provide additional protection against radiant heat and blowing embers from off-site wildland fires.
- This plan and its requirements shall be incorporated by reference into the final project Conditions of Approval.

5.3 Fuel Treatment Map and Plot Map

Attached to this FPP is the Fuel Treatment Map depicting the location of all proposed fuel treatments, lot lines, roads, and mitigation measures for the VCP development. The Plot Map shows road lengths, widths, slopes, fire hydrant locations and other pertinent construction elements. The Fuel Treatment and Plot Maps are located in Appendix “C”.

6.0 CONCLUSION

This FPP evaluated the adverse environmental effects that a proposed commercial development may have from wildland fire and identified means to properly mitigate those impacts to ensure that this development does not unnecessarily expose people or structures to a significant risk of loss, injury or death involving wildland fires.

- The requirements of this FPP provide the fuel modification standards to mitigate the exposure of people or structures to a significant risk of loss, injury or death. Zone 1 consists of the level building pad and the first 5-feet from the structures. Within Zone 1 only hardscape such as paved, block or gravel walkways surrounding the perimeter of the building. Limited plantings of fire-resistant vegetation may be permitted. Zone 2 begins at the outer edge of Zone 1 in a horizontal provides for the selective clearing of vegetation. and will protect structures from radiant and convective heat. This zone will be a landscaped zone that is permanently irrigated and consists of fire resistant and maintained plantings. Within the VCP development, there is little space for a fully developed Zone 3, therefore the entire area will be incorporated within Zone 2.
- The development will have adequate emergency access in terms of access and construction standards for roadways and streets. VCFPD, CAL FIRE and nearby fire departments through mutual aid, will provide fire protection. Response times and the proximity of the development to the Wildland Urban Interface (WUI), with the subdivision being in close proximity to Very High Fire Hazard Severity Zones require fire sprinklers in all residences.
- Water supplies via pipelines, hydrants, and related requirements will provide adequate water for fire protection.

7.0 LIST OF PREPARERS, PERSONS & ORGANIZATIONS CONTACTED

7.1 List of Preparers

The principal author and preparer of this Fire Protection Plan is Melvin Johnson, Owner **FIREWISE 2000, LLC.**, a San Diego County DPLU Certified Wildland Fire Consultant. Other **FIREWISE 2000, LLC.** members contributed to this plan with comments and peer review. These members include Peter Montgomery, Wildland Fire Associate.

7.2 Persons and Organizations Contacted

- | | |
|-----------------|---|
| 1. Gary Wynn | Wynn Engineering |
| 2. Will Rogers | Will Rogers and Associates |
| 3. Susan Berg | Wynn Engineering |
| 4. Jim Davidson | Deputy Fire Marshal, Valley Center Fire Protection District |

8.0 DEFINITIONS

For the purposes of this Fire Protection Plan, the following definitions apply to the terms used in this document. Where terms are not included, common usage of the terms shall apply.

ASPECT - Compass direction toward which a slope faces.

AUTHORITY HAVING JURISDICTION (AHJ) – An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

CLIMAX VEGETATION - The final stage in ecological plant succession in which a relatively constant environment is reached and species composition no longer changes in a directional fashion, but fluctuates about some mean, or average, community composition.

COMBUSTIBLE – Any material that, in the form in which it is used and under the conditions anticipated will ignite and burn or will add appreciable heat to an ambient fire.

COMBUSTIBLE VEGETATION – Means material that in its natural state will readily ignite, burn, and transmit fire from native or landscape plants to any structure or other vegetation. Combustible vegetation Includes dry grass, brush, weeds, litter or other flammable vegetation that creates a fire hazard.

DEFENSIBLE SPACE – Is an area either natural or man-made, where material capable of allowing a fire to spread unchecked has been treated, cleared or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.

EXTREME FIRE BEHAVIOR – "Extreme" implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One or more of the following is usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, strong convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously.

FIRE BEHAVIOR – The manner in which a fire reacts to the influences of fuel, weather and topography.

FIRE HAZARD SEVERITY ZONES – Are geographical areas designated pursuant to California Public Resources Code sections 4201 through 4204 and classified as Very High, High and Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code sections

51175 through 51189. The California Code of Regulations, Title 14, Section 1280 entitles maps of these geographical areas as "Maps of the Fire Hazard Severity Zones in the State Responsibility Area of California."

FIRE RESISTIVE – Construction designed to provide reasonable protection against fire.

FIRE RESISTIVE PLANTS – Plants that do not readily ignite from a flame or other ignition sources. These plants can be damaged or even killed by fire; however, their foliage and stems do not significantly contribute to the fuel and, therefore, the fire's intensity.

FLAME LENGTH – The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

FUEL MOISTURE – The quantity of moisture in vegetative fuels expressed as a percentage of the weight when thoroughly dried at 212 degrees F.

FUEL MODEL – Simulated fuel complex (or combination of vegetation types) for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified. Fuel models are utilized in the BehavePlus Fire Model to aid in forecasting fire behavior.

FUEL MODIFICATION – Any manipulation or removal of fuels to reduce the likelihood of ignition or the resistance to fire control.

GROUND FUELS - All combustible materials such as grass, duff, loose surface litter, tree or shrub roots, rotting wood, leaves, peat, or sawdust that typically support combustion.

LADDER FUELS – Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

LIMITED BUILDING ZONE – A protective buffer that surrounds a biological open space area. A LBZ would prohibit the building of structures that would require vegetation clearing within the protected open space for fuel management purposes.

MITIGATION – Action that moderates the severity of a fire hazard or risk.

ONE-HOUR FUEL - 1-hour fuels consist of those portions of vegetation that are < 0.625 cm (0.25 in.) in diameter. 1-hour fuels are the most important for carrying surface fires and their moisture content governs fire behavior.

RADIANT HEAT – Transfer of heat in straight lines through a gas or vacuum other than by heating of the intervening space.

RELATIVE HUMIDITY – A weather term, the amount of moisture in the air as a percentage of the maximum the air will hold at a given temperature. The amount of moisture in a given parcel of air expressed as a percentage of the maximum amount that parcel of air could hold at the same air temperature.

REMOTE AUTOMATED WEATHER STATION – Is a combination of sensors, radios and related electronic equipment installed in wildland areas that are designed to monitor the weather and provide weather data that assists land management agencies with a variety of projects such as monitoring air quality, fire danger rating, and providing information for research applications.

SHALL - Indicates a mandatory requirement.

RISK – The measure of the probability of ignition and severity of adverse effects that result from an exposure to a wildland fire (direction flames, radiant heat, or firebrands (embers).

SLOPE – Is the variation of terrain from the horizontal; the number of feet, rise or fall per 100 feet, measured horizontally, expressed as a percentage.

STANDPIPE – A type of rigid water piping which is built into multi-story buildings in a vertical position, to which fire hoses can be connected, allowing manual application of water to a fire. Within buildings, standpipes thus serve the same purpose as fire hydrants.

TEN-HOUR FUELS – 10-hour fuels are those portions of plant material that are between (0.625 - 2.5 cm (0.25 to 1 in.) in diameter. Ten-hour fuels are readily consumed when dead fuel moistures are low.

WILDFIRE – Is any uncontrolled fire spreading through vegetative fuels that threaten to destroy life, property, or resources as defined in Public Resources Code sections 4103 and 4104.

WILDFIRE EXPOSURE – One or a combination of radiant heat, convective heat, direct flame contact and burning embers being projected by vegetation fire to a structure and its immediate environment.

WILDLAND-URBAN INTERFACE – The line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

9.0 REFERENCES

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2. *Behave Plus Fire Modeling System, Version 5.0.5*, General Technical Report RMRS-GRT-106WWW Revised. July 2008. Patricia L. Andrews, Collin D. Bevins, Robert Seli. United States Department of Agriculture - Forest Service, Rocky Mountain Research Station, Missoula, Montana.
3. National Fire Protection Association - NFPA 1144 *Standard for Reducing Structure Ignition Hazards from Wildfire*.
4. National Fire Protection Association - NFPA 13 *Standard for the Installation of Sprinkler Systems*
5. California Code of Regulations, Title 14, section 1280 and Title 24 Part 9
6. California Public Resources Codes sections 4201 through 4204
7. California Government Code, sections 51175 through 51189
8. California Fire Code including Local Amendments and Appendices to Chapters 1 & 4 and Appendices B, F & H, 2019
9. International Wildland-Urban Interface Code 2018
10. International Fire Code 2018
11. *County of San Diego. Plant List and Acceptable Plants for a Defensible Space in Fire Prone Areas. Department of Planning and Land Use, December 1998*
12. County of San Diego Consolidated Fire Code 2020

13. *Chapter 7A-California Building Code 2019*
14. *The California State and Local Responsibility Area Fire Hazard Severity Zone Map*
15. County of San Diego. *Guidelines for Determining Significance and Report Format and Content Requirements Wildland Fire and Fire Protection*. Land Use and Environment Group - Department of Planning and Land Use and the Department of Public Works. December 19, 2008. 19 pages.
16. Western Region Climate Center. *Historic Climate Data from Remote Automated Weather Stations*. RAWS USA Climate Archive. Reno, NV. Data for all Remote Automated Weather Stations is available at the following web site: <http://www.raws.dri.edu/index.html>

APPENDIX 'A'

Recommended Plant List

APPENDIX 'A'

COUNTY OF SAN DIEGO ACCEPTABLE PLANTS FOR DEFENSIBLE SPACE IN FIRE PRONE AREAS

ALL NATIVE PLANTS ON THE FOLLOWING LIST are considered to be drought-tolerant in the particular climate zone they are found. Those that grow best in riparian areas, as indicated by the "R", are generally the least drought-tolerant plants on the list.

SPECIAL NOTE: When planting, it is necessary to water deeply to encourage the plant roots to seek natural moisture in the soil. This watering should continue for at least three years to allow the plants to naturalize. More water should be provided in summer and less (if any) in the winter. These plants should be weaned off the supplemental irrigation and become less dependent on it over the establishment period.

No plant is totally fire resistant. The plants listed were chosen to due to their high-water content, minimum amount of flammable resins and/or low fuel volume.

Definitions:

Drought-Tolerant Plant Materials: Trees, shrubs, groundcovers, and other vegetation capable of sustained growth and reproduction with only natural moisture. Occasional supplemental irrigation is necessary only in extreme drought situations.

Establishment Period: The time it takes for a plant to become drought resistant. This is usually a period of three years and is the time when supplemental irrigation is necessary.

Native or Naturalizing Plant Species: Plant species native to the region or introduced which, once established, are capable of sustaining growth and reproduction under local climatic conditions without supplemental irrigation.

***FIREWISE 2000, LLC.* Note:** The plant list which follows was developed using the plants found on the San Diego County approved plant list. This list was then compared to those plants which are suitable for the climatic zone in which the project is located. Only those plants suitable for the project area are listed below. The list is therefore shorter than that provided by the County. By providing this custom list, plants that are likely to be killed or seriously damaged by frost or will not perform in hot dry conditions have been eliminated.

FIREWISE 2000, LLC. believes that the planting of species suited to the site is essential to fire management goals and is an environmentally sound practice.

San Diego County
Customized Acceptable Plant List
For the Valley Center Professionals Project

No.	<u>Type</u>	<u>Genus</u>	<u>Species</u>	<u>Common Name</u>
1	Annual	Lupinus spp.	nanus	Lupine
2	Groundcover	Achillea	millefolium	Yarrow
3	Groundcover	Aptenia	cordifolia	Aptenia
4	Groundcover	Arctostaphylos spp.		Manzanita
5	Groundcover	Cerastium	tomentosum	Snow-in-Summer
6	Groundcover	Coprosma	kirkii	Creeping Coprosma
7	Groundcover	Cotoneaster spp.		Redberry
8	Groundcover	Drosanthemum	hispidum	Rosea Ice Plant
9	Groundcover	Dudleya	brittonii	Britton's Chalk Dudleya
10	Groundcover	Dudleya	pulverulenta	Chalk Dudleya
11	Groundcover	Dudleya	virens	Island Live-Forever
12	Groundcover	Eschscholzia	californica	California Poppy
13	Groundcover	Ferocactus	viridescens	Coast Barrel Cactus
14	Groundcover	Gaillardia	grandiflora	Blanket Flower
15	Groundcover	Gazania spp.		Gazania
16	Groundcover	Helianthemum spp.		Sunrose
17	Groundcover	Lantana spp.		Lantana
18	Groundcover	Lasthenia	californica	Common Goldfields
19	Groundcover	Lasthenia	glabrata	Coastal Goldfields
20	Groundcover	Lupinus spp.		Lupine
21	Groundcover	Myoporum spp.		Myoporum
22	Groundcover	Pyracantha spp.		Firethorn
23	Groundcover	Rosmarinus	officinalis	Rosemary
24	Groundcover	Santolina	chamaecyparissus	Lavender Cotton
25	Groundcover	Santolina	virens	Santolina
26	Groundcover	Trifolium	frageriferum	O'Connor's Legume
27	Groundcover	Verbena	rigida	Verbena
28	Groundcover	Viguiera	laciniata	San Diego Sunflower
29	Groundcover	Vinca	major	Periwinkle
30	Groundcover	Vinca	minor	Dwarf Periwinkle
31	Perennial	Coreopsis	gigantea	Giant Coreopsis
32	Perennial	Coreopsis	grandiflora	Coreopsis
33	Perennial	Coreopsis	maritima	Sea Dahlia
34	Perennial	Coreopsis	verticillata	Coreopsis
35	Perennial	Heuchera	maxima	Island Coral Bells
36	Perennial	Iris	douglasiana	Douglas Iris
37	Perennial	Kniphofia	uvaria	Red-Hot Poker
38	Perennial	Lavandula spp.		Lavender
39	Perennial	Limonium	californicum perezii	Coastal Statice
40	Perennial	Limonium	californicum var. mexicanum	Coastal Statice
41	Perennial	Oenothera spp.		Primrose
42	Perennial	Penstemon spp.		Penstemon
43	Perennial	Satureja	douglasii	Yerba Buena
44	Perennial	Sisyrinchium	bellum	Blue-Eyed Grass

45	Perennial	Sisyrinchium	californicum	Golden-Eyed Grass
46	Perennial	Solanum	xantii	Purple Nightshade
47	Perennial	Zauschneria	'Catalina'	Catalina Fuschia
48	Perennial	Zauschneria	californica	California Fuschia
49	Perennial	Zauschneria	cana	Hoary California Fuschia
50	Shrub	Agave	americana	Desert Century Plant
51	Shrub	Agave	Amorpha fruticosa	False Indigobush
52	Shrub	Agave	deserti	Shaw's Century Plant
53	Shrub	Agave	shawii	NCN
54	Shrub	Agave		Century Plant
55	Shrub	Arctostaphylos spp		Manzanita
56	Shrub	Atriplex	canescens	Hoary Saltbush
57	Shrub	Baccharis	pilularis	Coyote Bush
58	Shrub	Baccharis	salicifolia	Mule Fat "R"
59	Shrub	Carissa	macrocarpa	Natal Plum
60	Shrub	Ceanothus spp.		California Lilac
61	Shrub	Cistus spp.		Rockrose
62	Shrub	Cneoridium	dumosum	Bush rue
63	Shrub	Comarostaphylis	diversifolia	Summer Holly
64	Shrub	Convolvulus	cneorum	Bush Morning Glory
65	Shrub	Dalea	attenuata v orcuttii	Orcutt's Delea
66	Shrub	Elaeagnus	pungens	Silverberry
67	Shrub	Encelia	californica	Coast Sunflower
68	Shrub	Encelia	farinosa	White Brittlebush
69	Shrub	Eriobotrya	deflexa	Bronze Loquat
70	Shrub	Eriophyllum	confertiflorum	Golden Yarrow
71	Shrub	Escallonia spp.		Escallonia
72	Shrub	Feijoa	sellowiana	Pineapple Guava
73	Shrub	Fremontodendron	californicum	Flannelbush
74	Shrub	Fremontodendron	mexicanum	Southern Flannelbush
75	Shrub	Galvezia	juncea	Baja Bush-Snapdragon
76	Shrub	Galvezia	speciosa	Island Bush-Snapdragon
77	Shrub	Garrya	elliptica	Coast Silktassel
78	Shrub	Garrya	flavescens	Ashy Silktassel
79	Shrub	Heteromeles	arbutifolia	Toyon
80	Shrub	Lantana spp.		Lantana
81	Shrub	Lotus	scoparius	Deerweed
82	Shrub	Mahonia spp.		Barberry
83	Shrub	Malacothamnus	clementinus	San Clemente Island Bush Mallow
84	Shrub	Malacothamnus	fasciculatus	Mesa Bushmallow
85	Shrub	Melaleuca spp.		Melaleuca
86	Shrub	Mimulus spp.		Monkeyflower
87	Shrub	Nolina	parryi	Parry's Nolina
88	Shrub	Photinia spp.		Photinia
89	Shrub	Pittosporum	crassifolium	NCN
90	Shrub	Pittosporum	rhombifolium	Queensland Pittosporum
91	Shrub	Pittosporum	tobira 'Wheeleri'	Wheeler's Dwarf
92	Shrub	Pittosporum	undulatum	Victorian Box
93	Shrub	Pittosporum	viridiflorum	Cape Pittosporum
94	Shrub	Plumbago	auriculata	Cape Plumbago

95	Shrub	Prunus	caroliniana	Carolina Laurel Cherry
96	Shrub	Prunus	ilicifolia	Hollyleaf Cherry
97	Shrub	Prunus	lyonii	Catalina Cherry
98	Shrub	Puncia	granatum	Pomegranate
99	Shrub	Pyracantha spp.		Firethorn
100	Shrub	Quercus	dumosa	Scrub Oak
101	Shrub	Rhamus	alaternus	Italian Buckthorn
102	Shrub	Rhamus	californica	Coffeeberry
103	Shrub	Rhaphiolepis spp.		Rhaphiolepis
104	Shrub	Rhus	continus	Smoke Tree
105	Shrub	Rhus	integrifolia	Lemonade Berry
106	Shrub	Rhus	laurina	Laurel Sumac
107	Shrub	Rhus	ovata	Sugarbush
108	Shrub	Rhus	trilobata	Squawbush
109	Shrub	Romneya	coulteri	Matilija Poppy
110	Shrub	Rosa	californica	California Wild Rose
111	Shrub	Rosa	minutifolia	Baja California Wild Rose
112	Shrub	Salvia spp.		Sage
113	Shrub	Sambucus spp.		Elderberry
114	Shrub	Symphoricarpos	mollis	Creeping Snowberry
115	Shrub	Syringa	vulgaris	Lilac
116	Shrub	Tecomaria	capensis	Cape Honeysuckle
117	Shrub	Teucrium	fruticans	Bush Germander
118	Shrub	Verbena	lilacina	Lilac Verbena
119	Shrub	Xylosma	congestum	Shiny Xylosma
120	Shrub	Yucca	schidigera	Mojave Yucca
121	Shrub	Yucca	whipplei	Foothill Yucca
121	Tree	Acer	macrophyllum	Big Leaf Maple
122	Tree	Acer	saccharinum	Silver Maple
123	Tree	Alnus	rhombifolia	White Alder "R"
124	Tree	Arbutus	unedo	Strawberry Tree
125	Tree	Archontophoenix	cunninghamiana	King Palm
126	Tree	Brahea	armata	Blue Mexican Palm
127	Tree	Brahea	edulis	Guadalupe Palm
128	Tree	Ceratonia	siliqua	Carob
129	Tree	Cercis	occidentalis	Western Redbud
130	Tree	Cornus	stolonifera	Redtwig Dogwood
131	Tree	Eriobotrya	japonica	Loquat
132	Tree	Erythrina	caffra	Kaffirboom Coral Tree
133	Tree	Gingko	biloba "Fairmount"	Fairmount Maidenhair Tree
134	Tree	Juglans	californica	California Walnut
135	Tree	Lagerstroemia	indica	Crape Myrtle
136	Tree	Ligustrum	lucidum	Glossy Privet
137	Tree	Liquidambar	styraciflua	Sweet Gum
138	Tree	Liriodendron	tulipifera	Tulip Tree
139	Tree	Lyonothamnus	floribundus asplenifolius	Fernleaf Catalina Ironwood
140	Tree	Melaleuca spp.		Melaleuca
141	Tree	Myoporum spp.		Myoporum
142	Tree	Nerium	oleander	Oleander
143	Tree	Parkinsonia	aculeata	Mexican Palo Verde

144	Tree	Pistacia	chinensis	Chinese Pistache
145	Tree	Pistacia	vera	Pistachio Nut
146	Tree	Pittosporum	phillyreoides	Willow Pittosporum
147	Tree	Pittosporum	viridiflorum	Cape Pittosporum
148	Tree	Platanus	acerifolia	London Plane Tree
149	Tree	Platanus	racemosa	California Sycamore "R"
150	Tree	Populus	alba	White Poplar
151	Tree	Populus	fremontii	Western Cottonwood "R"
152	Tree	Populus	trichocarpa	Black Cottonwood "R"
153	Tree	Prunus	caroliniana	Carolina Laurel Cherry
154	Tree	Prunus	cersifera 'Newport'	Newport Purple-Leaf Plum
155	Tree	Prunus	ilicifolia	Hollyleaf Cherry
156	Tree	Prunus	lyonii	Catalina Cherry
157	Tree	Prunus	xblireiana	Flowering Plum
158	Tree	Quercus	agrifolia	Coast Live Oak
159	Tree	Quercus	engelmannii	Engelmann Oak
160	Tree	Quercus	suber	Cork Oak
161	Tree	Rhus	lancea	African Sumac
162	Tree	Salix spp.		Willow "R"
163	Tree	Tristania	conferta	Brisbane Box
164	Tree	Ulmus	parvifolia	Chinese Elm
165	Tree	Ulmus	pumila	Siberian Elm
166	Tree	Umbellularia	californica	California Bay Laurel "R"
167	Vine	Antigonon	leptopus	San Miguel Coral Vine
168	Vine	Distictis	buccinatoria	Blood-Red Trumpet Vine
169	Vine	Keckiella	cordifolia	Heart-Leaved Penstemon
170	Vine	Lonicera	japonica 'Halliana'	Hall's Honeysuckle
171	Vine	Lonicera	subspicata	Chaparral Honeysuckle
172	Vine	Solanum	jasminoides	Potato Vine

For plants to be used in fuel treatment Zones A or B that are not found on this list, acquire approval from your local fire department first before installing them. Only "firewise" plants can be used in these zones.

APPENDIX 'B'

Prohibited/Invasive Plant List

UNDESIRABLE PLANT LIST

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

** San Diego County native species

APPENDIX 'B' References:

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

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

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

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

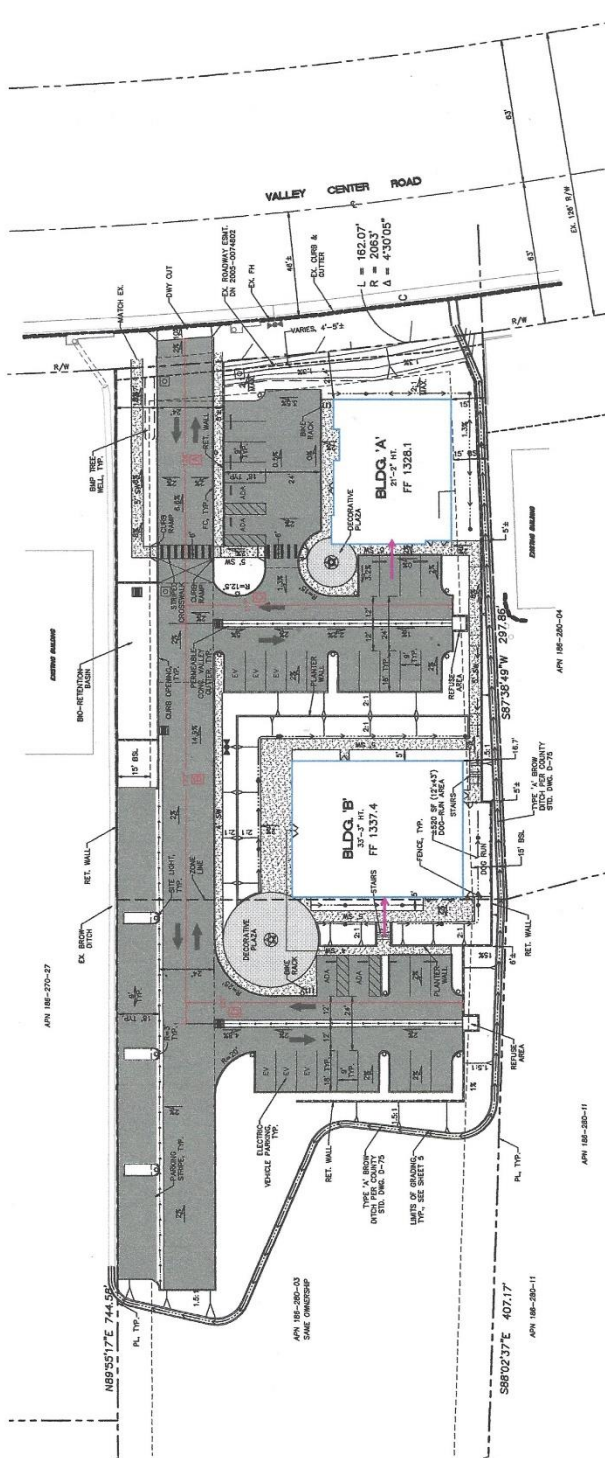
www.bewaterwise.com. 2004. Fire-resistant California Friendly Plants.

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

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

APPENDIX 'C'

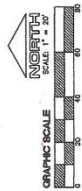
Fuel Treatment Map, Plot Map & Photos



PLOT MAP
SCALE 1"=20'

ENGINEER OF WORK

WIN ENGINEERING, INC.
 2720 N. VALLEY CENTER ROAD
 SUITE 100
 VALLEY CENTER, CO 80558
 (781) 746-8722
 (781) 746-8723
 FAX (781) 746-8724
 www.win-engineering.com
 WEI NO. 28 NO. 18-002 2-1-20



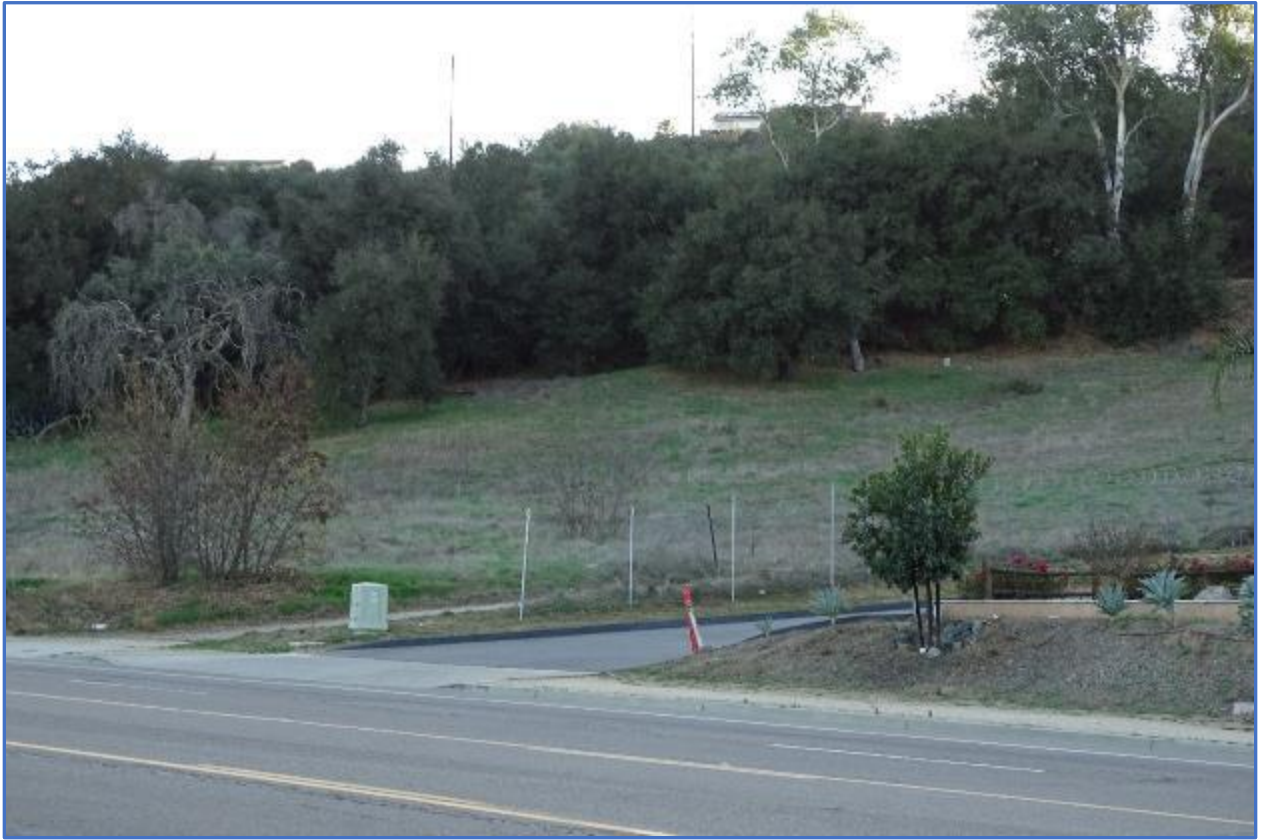
- FIRE LEGEND**
- EXISTING FIRE HAZARD
 - NEW FIRE HAZARD
 - EXISTING FIRE EXTINGUISHING
 - NEW FIRE EXTINGUISHING
 - EXISTING FIRE WALL
 - NEW FIRE WALL
 - EXISTING RETAINING WALL
 - NEW RETAINING WALL

- LEGEND**
- PROPERTY LINE (PROJECT)
 - PROPERTY LINE (EXISTING)
 - CENTERLINE OF EXISTING ROAD
 - EXISTING ROAD
 - NEW ROAD
 - EXISTING SIDEWALK
 - NEW SIDEWALK
 - EXISTING DRIVE
 - NEW DRIVE
 - EXISTING EASEMENT
 - NEW EASEMENT
 - EXISTING FENCE
 - NEW FENCE
 - EXISTING UTILITY
 - NEW UTILITY
 - EXISTING PLANTER
 - NEW PLANTER
 - EXISTING RETAINING WALL
 - NEW RETAINING WALL

PRIVATE CONTRACT

COUNTY OF SAN DIEGO
 PLANNING AND ENVIRONMENT SERVICES
VC PROFESSIONALS
 FIRE EXHIBIT PLAN
 SHEET 1 OF 2

Certified by
 [Signature]
 [Stamp]
 [Text]



Above Photo 6: Looking at the Area South of the Project Site from East Side of Valley Center Road

Below Photo 7: Looking North on Valley Center Road from Northeast Corner of Development Site; Boulder Covered Hillside in Background





Above Photo 8: Commercial 1-Story Building
Northern Boundary of Development

Below Photo 9: 2-Story Commercial Building
Southern Boundary of Development



APPENDIX ‘D’

Non-Combustible & Ignition Resistant Building Materials

Appendix D

Non-Combustible & Fire-Resistant Building Materials for Balconies, Carports, Decks, Patio Covers and Floors

Note: The Office of the State Fire Marshal (SFM) Fire Engineering Division administers licensing programs and performs engineering functions affecting consumer services and product evaluation, approval and listing. The following link is to the State Fire Marshal's office for more information on the Building Material List for non-combustible and fire resistant building materials: <https://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/building-materials-listing/bml-search-building-materials-listing>.

Examples of non-combustible & fire-resistant building materials for balconies, carports, decks, patio covers, and floors are listed below. These are only examples, and materials listed here must meet local fire and building codes and are not an endorsement of any particular brand or manufacturer.

I. **NON-COMBUSTIBLE HEAVY GAGE ALUMINUM MATERIALS - Metals USA Building Products Group - Ultra-Lattice**



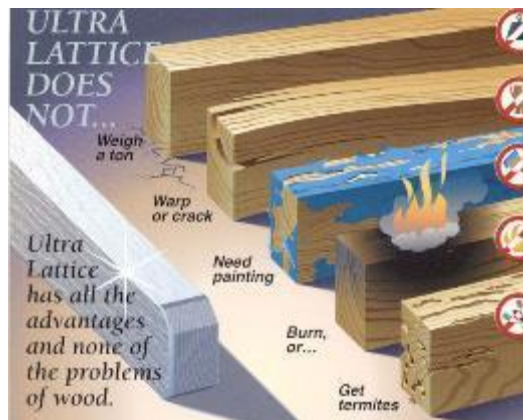
Ultra-Lattice Stand Alone Patio Cover



Ultra-Lattice Attached Patio Cover



Ultra-Lattice Solid Patio Cover



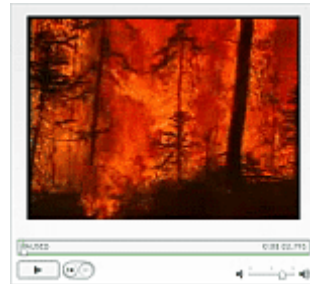
Ultra-Lattice Vs. Wood

II. FRX EXTERIOR FIRE-RETARDANT TREATED WOOD

FRX® fire retardant treated wood may be used in exterior applications permitted by the codes where: public safety is critical, other materials would transfer heat or allow fires to spread, sprinkler systems cannot easily be installed, corrosive atmospheres necessitate excessive maintenance of other materials, or fire protection is inadequate or not readily available. The International Building, Residential and Urban-Wildland Interface Codes and regulations, permit the use of fire-retardant treated wood in specific instances. See below for typical exterior uses and typical residential uses.

Typical Exterior Uses

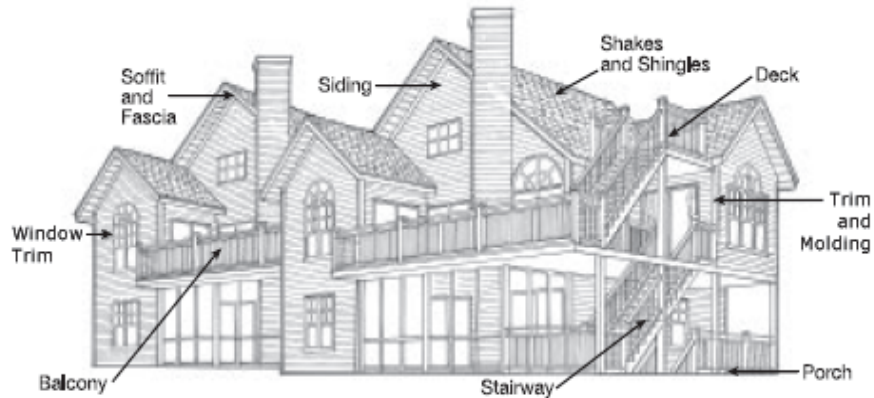
- Wall coverings
- Balconies
- Decks
- Stairways
- Fences
- Sheds
- Gazebos
- Roof coverings
- Open-air roof systems
- Canopies and awnings
- Storefronts and facades
- Eaves, soffits and fascia
- Agricultural buildings and horse stalls
- Scaffolding and scaffold planks
- Construction staging
- Various other residential and commercial uses



Property owners and Architects: See this [2-minute video](#) and the illustration below.



Typical Residential Uses



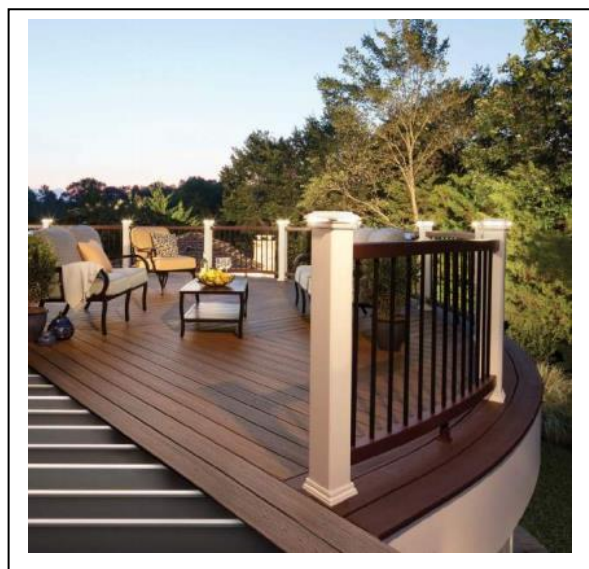
Rising concerns over fire damage and the adoption of urban-wildland interface codes have increased the use of FRT wood in residential structures.

For information on fire retardant treated wood for exterior uses, visit www.frxwood.com.

III. DECKING MATERIALS

Trex Company, Inc. – “Trex Transcend®, Trex Select® and Trex Enhance® wood and polyethylene composite deck board, nominal ranging in size from 1” x 5-1/2” to 1-3/8” x 5-1/2” installed per manufacturer maximum edge-to-edge gap of 3/16”. All Trex decking products meet or exceed the SFM 12-7A-4A testing protocol.

Trex combines both beauty and fire defense. A few examples of installations are shown below:





SOLID “WOOD” DECKING

Company Name: Various Manufacturers

Product Description: Solid “Wood” decking, when installed over minimum 2” x 6” solid “Douglas Fire” or better joists, space 24” or less on center, and decking and joints comply with American Softwood Lumber Standard PS20 as follows:

Minimum nominal 5/4” thick and nominal 6” wide decking boards with a maximum 3/8” radius edges made of solid wood species “Redwood”, “Western Red Cedar”, “Incense Cedar”, “Port Orford Cedar”, or “Alaska Yellow Cedar” having a Class B Flame Spread rating when tested in accordance with ASTM E84. Lumber grades; construction common, commercial or better grade for Redwood; 3 common, commercial or better grades for Cedars.

V. Vents

Examples of Ember Resistant Approved Vents

Brandguard



O'Hagin Fire & Ice® Line – Flame and Ember Resistant

An available option for all O'Hagin attic ventilation products, this attic vent not only features all the same design, construction elements and color choices as the O'Hagin Standard Line, but also features an interior stainless-steel matrix that resists the intrusion of flames and embers. This patent-pending attic vent is accepted for use by many local fire officials for installation in Wildland Urban Interface (WUI) zones.





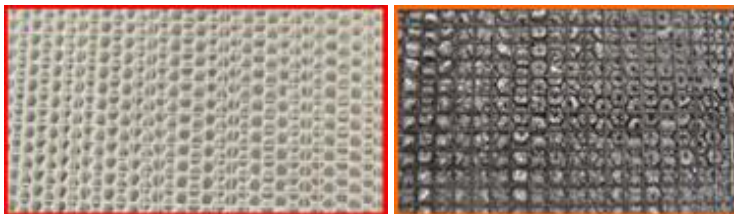
Vulcan Vents

The founders of Gunter Manufacturing have been working closely over the last two years, with the scientists and inventors of Vulcan Technologies to bring to market this incredible product.

Combining our quality vent products with the fire-stopping honeycomb matrix core designed by Vulcan has produced unique and remarkable results.

At Gunter manufacturing has over 50 years of combined sheet metal manufacturing experience. Special orders are not a problem. Their vent frames are industry standard frames so there is little or no learning curve for installers and contractors. Their stated goal is to provide people with the vents they need to secure their homes with additional safety against wildfires and give them piece of mind from knowing that their home or structure is protected by a product that works!

The core of their fire and ember safe vents are manufactured out of hi-grade aluminum honeycomb and coated with an intumescent coating made by [FireFree Coatings](#). The intumescent coating is designed to quickly swell up and close off when exposed to high heat. The expanded material acts as an insulator to heat, fire, and embers



Before

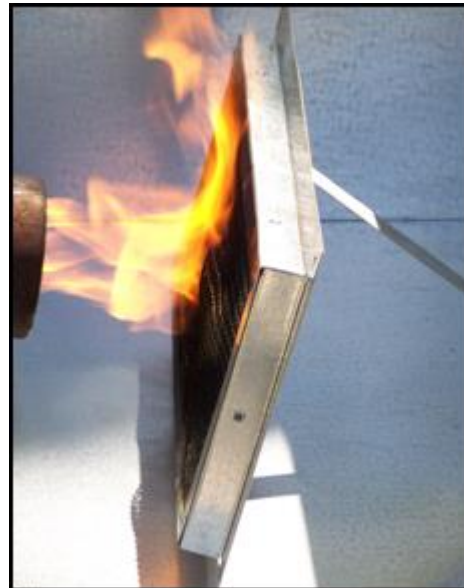
After

After the cells close off, they are extremely well insulated, and fire or embers cannot penetrate.

Even before the cells close off, the vent is designed to protect against flying embers. In many cases embers will attack a structure before fire ever comes near, so this feature is especially important.



Close-up of the coated honeycomb matrix.



Fire easily passes through a standard vent, on the left, but stops cold when it comes up against a Vulcan Vent shown on right.

APPENDIX 'E'

Ignition-Resistant Building Requirements

Appendix 'E'

Ignition Resistant Building Requirements

The following is a summary of the current requirements for ignition resistant construction for high fire hazard areas under Chapter 7A of the California Building Code (CBC) 2019 edition. However the requirements listed below are not all inclusive and all exterior building construction including roofs, eaves, exterior walls, doors, windows, decks, and other attachments must meet the current CBC Chapter 7A ignition resistance requirements, the California Fire Code, and any additional County and/or City codes in effect at the time of building permit application. See the current applicable codes for a detailed description of these requirements and any exceptions.

1. All structures will be built with a Class A Roof Assembly and shall comply with the requirements of Chapter 7A and Chapter 15 of the California Fire Code. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.
2. Roof valley flashings shall be not less than 0.019-inch (0.48 mm) No. 26 gage galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72-pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909, at least 36-inch-wide (914 mm) running the full length of the valley.
3. Attic or foundation ventilation louvers or ventilation openings in vertical walls shall be covered with a minimum of 1/16-inch and shall not exceed 1/8-inch mesh corrosion-resistant metal screening or other approved material that offers equivalent protection.
4. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to resist the intrusion of flames and embers, be fire-stopped with approved materials or have one layer of a minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909 installed over the combustible decking.
5. Enclosed roof eaves and roof eave soffits with a horizontal underside, sloping rafter tails with an exterior covering applied to the under-side of the rafter tails, shall be protected by one of the following:
 - Noncombustible material
 - Ignition-resistant material
 - One layer of 5/8-inch Type X gypsum sheathing applied behind an exterior covering on the underside of the rafter tails or soffit
 - The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the rafter tails or soffit including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
 - Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in Section 707A.10 when tested in accordance with the test procedures set forth in ASTM E2957.

- Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3.

Exceptions: The following materials do not require protection:

1. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
2. Fascia and other architectural trim boards.

6. The exposed roof deck on the underside of unenclosed roof eaves shall consist of one of the following:

- Noncombustible material, or
- Ignition-resistant material, or
- One layer of 5/8-inch Type X gypsum sheathing applied behind an exterior covering on the underside exterior of the roof deck, or
- The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the roof deck designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association fire Resistance Design Manual.

Exceptions: The following materials do not require protection:

1. Solid wood rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
2. Solid wood blocking installed between rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
3. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
4. Fascia and other architectural trim boards.

7. Vents - ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents, other materials or other devices that meet one of the following requirements:

- A. Vents listed to ASTM E2886 and complying with all the following:

- i. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
- ii. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
- iii. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

- B. Vents shall comply with all of the following:

- i. The dimensions of the openings therein shall be a minimum of 1/16-inch (1.6 mm) and shall not exceed 1/8-inch (3.2 mm).
- ii. The materials used shall be noncombustible.

Exception: Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh, may be of combustible materials.

- iii. The materials used shall be corrosion resistant.

8. Vents shall not be installed on the underside of eaves and cornices.

Exceptions:

1. Vents listed to ASTM E2886 and complying with all the following:
 - There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
 - There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
 - The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).
 2. The enforcing agency shall be permitted to accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.
 3. Vents complying with the requirements of Section 706A.2 shall be permitted to be installed on the underside of eaves and cornices in accordance with either one of the following conditions:
 - 3.1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or,
 - 3.2. The exterior wall covering, and exposed underside of the eave are of noncombustible materials, or ignition-resistant materials, as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the requirements
9. All chimney, flue or stovepipe openings that will burn solid wood will have an approved spark arrester. An approved spark arrester is defined as a device constructed of nonflammable materials, having a heat and corrosion resistance equivalent to 12-gauge wire, 19-gauge galvanized steel or 24-gauge stainless steel, or other material found satisfactory by the Fire Protection District, having ½-inch perforations for arresting burning carbon or sparks nor block spheres having a diameter less than 3/8 inch (9.55 mm). It shall be installed to be visible for the purposes of inspection and maintenance and removeable to allow for cleaning of the chimney flue.
10. All residential structures will have automatic interior fire sprinklers installed according to the National Fire Protection Association (NFPA) 13D 2019 edition - Standard for the Installation of Sprinkler Systems in One and Two-family Dwellings and Manufactured Homes. Fire sprinklers are not required in unattached non-habitable structures greater than 50 feet from the residence.
11. The exterior wall covering, or wall assembly shall comply with one of the following requirements:
- Noncombustible material, or
 - Ignition resistant material, or
 - Heavy timber exterior wall assembly, or
 - Log wall construction assembly, or
 - Wall assemblies that have been tested in accordance with the test procedures for a 10-minute direct flame contact expose test set forth in ASTM E2707 with the conditions of acceptance shown in Section 707A.3.1 of the California Building Code, or
 - Wall assemblies that meet the performance criteria in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in SFM Standard 12-7A-1.

Exception: Any of the following shall be deemed to meet the assembly performance criteria and intent of this section including;

- One layer of 5/8-inch Type X gypsum sheathing applied behind the exterior covering or cladding on the exterior side of the framing, or
 - The exterior portion of a 1-hour fire resistive exterior wall assembly designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Associate Fire Resistance Design Manual.
12. Exterior walls shall extend from the top of the foundation to the roof and terminate at 2-inch nominal solid blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.
13. Gutters shall be provided with the means to prevent the accumulation of leaf litter and debris within the gutter that contribute to roof edge ignition.
14. No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.
15. All projections (exterior balconies, decks, patio covers, unenclosed roofs and floors, and similar architectural appendages and projections) or structures less than five feet from a building shall be of non-combustible material, one-hour fire resistive construction on the underside, heavy timber construction or pressure-treated exterior fire-retardant wood. When such appendages and projections are attached to exterior fire-resistive walls, they shall be constructed to maintain same fire-resistant standards as the exterior walls of the structure.
16. Deck Surfaces shall be constructed with one of the following materials:
- Material that complies with the performance requirements of Section 709A.4 when tested in accordance with both ASTM E2632 and ASTM E2726, or
 - Ignition-resistant material that complies with the performance requirements of 704A.3 when tested in accordance with ASTM E84 or UL 723, or
 - Material that complies with the performance requirements of both SFM Standard 12-7A-4 and SFM Standard 12-7A-5, or
 - Exterior fire retardant treated wood, or
 - Noncombustible material, or
 - Any material that complies with the performance requirements of SFM Standard 12-7A-4A when the attached exterior wall covering is also composed of noncombustible or ignition-resistant material.
17. Accessory structures attached to buildings with habitable spaces and projections shall be in accordance with the Building Code. When the attached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all underfloor areas and exterior wall construction in accordance with Chapter 7A of the Building Code.
18. Exterior windows, skylights and exterior glazed door assemblies shall comply with one of the following requirements:
- Be constructed of multiplane glazing with a minimum of one tempered pane meeting the requirements of Section 2406 Safety Glazing, or
 - Be constructed of glass block units, or

- Have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 257, or
- Be tested to meet the performance requirements of SFM Standard 12-7A-2.

19. All eaves, fascia and soffits will be enclosed (boxed) with non-combustible materials. This shall apply to the entire perimeter of each structure. Eaves of heavy timber construction are not required to be enclosed as long as attic venting is not installed in the eaves. For the purposes of this section, heavy timber construction shall consist of a minimum of 4x6 rafter ties and 2x decking.

20. Detached accessory buildings that are less than 120 square feet in floor area and are located more than 30 feet but less than 50 feet from an applicable building shall be constructed of noncombustible materials or of ignition-resistant materials as described in Section 704A.2 of the California Building Code.

Exception: Accessory structures less than 120 square feet in floor area located at least 30 feet from a building containing a habitable space.

21. All rain gutters, down spouts and gutter hardware shall be constructed from metal or other noncombustible material to prevent wildfire ignition along eave assemblies.

22. All side yard fence and gate assemblies (fences, gate and gate posts) when attached to the home shall be of non-combustible material. The first five feet of fences and other items attached to a structure shall be of non-combustible material.

23. Exterior garage doors shall resist the intrusion of embers from entering by preventing gaps between doors and door openings, at the bottom, sides and tops of doors, from exceeding 1/8 inch. Gaps between doors and door openings shall be controlled by one of the methods listed in this section.

- Weather-stripping products made of materials that:
 - (a) have been tested for tensile strength in accordance with ASTM D638 (Standard Test Method for Tensile Properties of Plastics) after exposure to ASTM G155 (Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials) for a period of 2,000 hours, where the maximum allowable difference in tensile strength values between exposed and non-exposed samples does not exceed 10%; and (b) exhibit a V-2 or better flammability rating when tested to UL 94, Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances.
- Door overlaps onto jambs and headers.
- Garage door jambs and headers covered with metal flashing.

24. Exterior doors shall comply with one of the following:

1. The exterior surface or cladding shall be of noncombustible material or,
2. The exterior surface or cladding shall be of ignition-resistant material or,
3. The exterior door shall be constructed of solid core wood that complies with the following requirements:

- 3.1. Stiles and rails shall not be less than 1-3/8 inches thick.
- 3.2. Panels shall not be less than 1-1/4 inches thick, except for the exterior perimeter of the panel that shall be permitted to taper to a tongue not less than 3/8 inch thick.
- 4. The exterior door assembly shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252 or,
- 5. The exterior surface or cladding shall be tested to meet the performance requirements of Section 707A.3.1 when tested in accordance with ASTM E2707 or,
- 6. The exterior surface or cladding shall be tested to meet the performance requirements of SFM Standard 12-7A-1.

APPENDIX 'F'

Behave Plus 5.0.5 Fire Behavior Calculations

Inputs: SURFACEDescription VC Professional Untreated SCAL 18 East Wind**Fuel/Vegetation, Surface/Understory**Fuel Model SCAL18**Fuel Moisture**

1-h Moisture	%	<u>2.</u>
10-h Moisture	%	<u>3.</u>
100-h Moisture	%	<u>5.</u>
Live Herbaceous Moisture	%	<u>30.</u>
Live Woody Moisture	%	<u>50.</u>

Weather

20-ft Wind Speed	mi/h	<u>60.</u>
Wind Adjustment Factor		<u>0.3</u>
Wind Direction (from north)	deg	<u>90</u>

Terrain

Slope Steepness	%	<u>2</u>
Aspect	deg	<u>90</u>

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 and spread directions are degrees clockwise from north [SURFACE].
Wind direction is the direction from which the wind is blowing [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ft/min) [SURFACE]
Fireline Intensity (Btu/ft/s) [SURFACE]
Flame Length (ft) [SURFACE]

(continued on next page)



VC Professional Untreated SCAL 18 East Wind

Surface Rate of Spread (maximum)	221.7 ft/min
Fireline Intensity	16105 Btu/ft/s
Flame Length	38.8 ft

**Inputs: SURFACE**

Description	VC Professional Treated gr1 East Wind		
Fuel/Vegetation, Surface/Understory			
Fuel Model	gr1		
Fuel Moisture			
1-h Moisture	%	2.	
10-h Moisture	%	3.	
100-h Moisture	%	5.	
Live Herbaceous Moisture	%	30.	
Live Woody Moisture	%	50.	
Weather			
20-ft Wind Speed	mi/h	60.	
Wind Adjustment Factor		0.3	
Wind Direction (from north)	deg	90	
Terrain			
Slope Steepness	%	2	
Aspect	deg	90	

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 and spread directions are degrees clockwise from north [SURFACE].
Wind direction is the direction from which the wind is blowing [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ft/min) [SURFACE]
Fireline Intensity (Btu/ft/s) [SURFACE]
Flame Length (ft) [SURFACE]

(continued on next page)



VC Professional Treated gr1 East Wind

Surface Rate of Spread (maximum)	41.4 ft/min
Fireline Intensity	67 Btu/ft/s
Flame Length	3.1 ft

**Inputs: SURFACE**Description VC Professional Untreated SCAL 18 Southwest Wind**Fuel/Vegetation, Surface/Understory**Fuel Model SCAL18**Fuel Moisture**

1-h Moisture	%	<u>2.</u>
10-h Moisture	%	<u>3.</u>
100-h Moisture	%	<u>6.</u>
Live Herbaceous Moisture	%	<u>30.</u>
Live Woody Moisture	%	<u>60.</u>

Weather

20-ft Wind Speed	mi/h	<u>30.</u>
Wind Adjustment Factor		<u>0.3</u>
Wind Direction (from north)	deg	<u>225</u>

Terrain

Slope Steepness	%	<u>2</u>
Aspect	deg	<u>90</u>

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

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

Output Variables

Surface Rate of Spread (maximum) (ft/min) [SURFACE]

Fireline Intensity (Btu/ft/s) [SURFACE]

Flame Length (ft) [SURFACE]

(continued on next page)



VC Professional Untreated SCAL 18 Southwest Wind

Surface Rate of Spread (maximum)	111.1 ft/min
Fireline Intensity	8032 Btu/ft/s
Flame Length	28.1 ft

Inputs: SURFACE

Description VC Professionals Southwest Wind Treated gr1

Fuel/Vegetation, Surface/Understory

Fuel Model gr1

Fuel Moisture

1-h Moisture	%	2
10-h Moisture	%	3
100-h Moisture	%	5
Live Herbaceous Moisture	%	30
Live Woody Moisture	%	60

Weather

20-ft Wind Speed	mi/h	30
Wind Adjustment Factor		.3
Wind Direction (from north)	deg	225

Terrain

Slope Steepness	%	2
Aspect	deg	90

Run Option Notes

Maximum reliable effective wind speed limit is NOT 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 and spread directions are degrees clockwise from north [SURFACE].

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

Output Variables

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

Fireline Intensity (Btu/ft/s) [SURFACE]

Flame Length (ft) [SURFACE]

(continued on next page)



VC Professionals Southwest Wind Treated gr1

Surface Rate of Spread (maximum)	90.9 ft/min
Fireline Intensity	148 Btu/ft/s
Flame Length	4.5 ft

APPENDIX 'G'

Project Facility Availability Forms For Water and Fire



County of San Diego, Planning & Development Services
PROJECT FACILITY AVAILABILITY - WATER
ZONING DIVISION

Please type or use pen

WD PROFESSIONAL L.L.C. (D/C WD VETERINARY CLINIC) 760-749-0560 Owner's Name _____ Phone _____ 14219 COOL VALLEY ROAD Owner's Mailing Address _____ Street _____ VALLEY CENTER CA 92082 City _____ State _____ Zip _____		ORG _____ ACCT _____ ACT _____ TASK _____ DATE _____ AMT \$ _____ DISTRICT CASHIER'S USE ONLY
--	--	--

SECTION 1: PROJECT DESCRIPTION **TO BE COMPLETED BY APPLICANT**

A. ☐ Major Subdivision (TM) ☐ Specific Plan or Specific Plan Amendment
☐ Minor Subdivision (T/M) ☐ Certificate of Compliance
☐ Boundary Adjustment
☐ Rezone (Reclassification) from _____ to _____ zone
☐ Major Use Permit (MUP), purpose _____
☐ Time Extension, Case No. _____
☐ Extended Map, Case No. _____
☒ Other SITE PLAN REVIEW

B. ☐ Residential _____ Total number of dwelling units _____
☒ Commercial _____ Gross floor area 10,712.50
☐ Industrial _____ Gross floor area _____
☐ Other _____ Gross floor area _____

C. ☐ Total Project acreage 2.55 Total number of lots 1

D. Is the project proposing the use of groundwater? ☐ Yes ☒ No
 Is the project proposing the use of reclaimed water? ☐ Yes ☒ No
Dr. Clarke's: 7,572.50
Dr. Carlson's: 3,140.00 10,712.50

Assessor's Parcel Number(s):
 (Add extra if necessary)
186-280-03

Thomas Guide Page 1090 Grid E-4
0 VALLEY CENTER ROAD
 Project address _____ Street _____
VALLEY CENTER 92082
 Community Planning Area/Subregion _____ Zip _____

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

Applicant's Signature: [Signature] Date: 11-19-2020
 Address: 14219 COOL VALLEY ROAD, VALLEY CENTER CA 92082 Phone: 760-749-0560

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

SECTION 2: FACILITY AVAILABILITY **TO BE COMPLETED BY DISTRICT**

District Name: Valley Center Municipal Water District Service area _____

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

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached 1 (Number of sheets)
☐ Project will not be served for the following reason(s): _____

C. ☒ District conditions are attached. Number of sheets attached: 1
☐ District has specific water reclamation conditions which are attached. Number of sheets attached: _____
☐ District will submit conditions at a later date.

D. ☒ How far will the pipeline(s) have to be extended to serve the project? As required for Fire Service

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 notice of extension date is otherwise noted.

Authorized Signature: [Signature] Print Name: William McCabe, ES
 Print Title: District Engineer Phone: 760-735-4000 Date: 12-14-2020

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT.
 On completion of Section 2 and 3 by the District, applicant is to submit this form with application to:
 Planning & Development Services - Zoning Counter, 5510 Overland Ave, Suite 110, San Diego, CA 92123





County of San Diego, Planning & Development Services
PROJECT FACILITY AVAILABILITY - FIRE
ZONING DIVISION

<i>Please type or use pen</i>		F
VC PROFESSIONALS LLC 100 VC VETERINARY CLINIC 760-748-0560		
Owner's Name	Phone	
14219 COOL VALLEY ROAD		
Owner's Mailing Address	Street	
VALLEY CENTER	CA 92082	
City	State	Zip
		DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION		TO BE COMPLETED BY APPLICANT
<p>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 checked="" type="checkbox"/> Other: <u>SITE PLAN CENTER</u></p>		Assessor's Parcel Number(s) (Add extra if necessary)
		186-280-03
<p>B. <input type="checkbox"/> Residential Total number of dwelling units <input checked="" type="checkbox"/> Commercial Gross floor area <u>Building A: 7,572.50 / Building B: 3,140.00</u> <input type="checkbox"/> Industrial Gross floor area <input type="checkbox"/> Other Gross floor area</p>		
<p>C. Total Project acreage <u>2.65</u> Total lots <u>1</u> Smallest proposed lot <u>2.55</u></p>		
<p>Building A: Dr. Clark's: 7,572.50 Building B: Dr. Carlson's: 3,140.00 } 10,712.50</p>		
OWNER/APPLICANT AGREES TO COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.		
Applicant's Signature: <u>Douglas</u> Date: <u>11-23-2020</u>		
Address: 14219 COOL VALLEY RD, VALLEY CENTER CA 92082 Phone: 760-748-0560		
(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>VALLEY CENTER FIRE PROTECTION DISTRICT</u>		
Indicate the location and distance of the primary fire station that will serve the proposed project: <u>28234 LILAC ROAD STATION 1, 1.2 MILES</u>		
<p>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.</p>		
<p>B. <input 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 _____ minutes.</p>		
<p>C. <input checked="" type="checkbox"/> Fire protection facilities are not expected to be adequate to serve the proposed development within the next five years. <input type="checkbox"/> District conditions are attached. Number of sheets attached _____ <input checked="" type="checkbox"/> District will submit conditions at a later date.</p>		

SECTION 3. FUELBREAK REQUIREMENTS	
<i>Note: The fuelbreak requirements prescribed by the fire district for the proposed project do not authorize any clearing prior to project approval by Planning & Development Services.</i>	
<input checked="" type="checkbox"/> Within the proposed project <u>100</u> feet of clearing will be required around all structures. The proposed project is located in a hazardous wildland fire area, and additional fuelbreak requirements may apply. Environmental mitigation requirements should be coordinated with the fire district to ensure that these requirements will not pose fire hazards.	
This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.	
Authorized Signature: <u>J. Davidson</u>	Print Name and Title: <u>J. DAVIDSON FIRE MARSHAL</u> Phone: <u>760-751-7600</u> Date: <u>12/2/2020</u>
On completion of Section 2 and 3 by the District, applicant is to submit this form with application to: Planning & Development Services - Zoning Counter, 8810 Oviatt Ave, Suite 110, San Diego, CA 92123	



PDS-399F (Rev. 09/21/2012)