APPENDIX J

Fire Protection

TENTATIVE TRACT 5658 - FUEL MODIFICATION PLAN MAP
North Canyon Ranch Development
City of Simi Valley, California

Symbol	Description
Not Shown	**FUEL TREATMENT ZONE 0 (LOT OWNER MAINTAINED WITHIN A PRIVATE LOT OR BY THE HOA ADJACENT TO TOWNHOME(S)) -** An irrigated zone that is cleared of all existing plants that is 5 feet in width beginning at the exterior wall of each structure. No combustible material and few plants are allowed in this zone. Plants are limited to small plants, typically less than 2 feet in height, and that will not spread more than 1 foot. They also shall be located a minimum of 12 inches from the structure. Usually these plants are placed in containers that are located between windows and doors. See Fire Protection Plan for additional information.
No Color	**FUEL TREATMENT ZONE 1A (LOT OWNER MAINTAINED) -** An irrigated zone begining 5 feet from the structure that includes each lot's front, back and sideyards to the property line that is maintained to Zone 1A. Zone 1A will be cleared of all existing native vegetation and replanted with irrigated drought tolerant and fire resistant lawns, ground covers and low growing shrubs. Remove and replace any dead or dying plant material monthly. It also may include hardscape features such as concrete sidewalks, rock, pavers, swimming pools and similar features. No combustible construction is allowed in Zone 1A. Avoid all plants listed on the Prohibited Plant list (See written Fire Protection Plan for further information).
	FUEL TREATMENT ZONE 1B (HOA MAINTAINED) - Zone 1B is an irrigated zone that generally located within 30 feet from a structure and is located in a common area managed by the HOA. When slopes are uphill toward a structure, the zone shall be 50 feet in width from the exterior walls of the adjacent structure. The Zone also includes manufactured slopes and portions of water basins maintained to Zone 1A criteria (see written Fire Protection Plan for further information).
	FUEL TREATMENT ZONE 2 (HOA MAINTAINED) - A Fuel Treatment Zone that is maintained to Zone 2 criteria located within the project. It extends from the outer edge of Zone 1A or 1B to 100 feet from any structure. The area is thinned to remove 50 percent of the adjacent untreated fuels including all plants on the Prohibited Plant List found in the Fire Protection Plan. Maintenance shall include the annual mowing or weed whacking of the herbaceous vegetation to a 3-inch stubble height and removal of any plants listed in Appendix A of the written Fire Protection Plan. See written Fire Protection Plan for further information.
	FUEL TREATMENT ZONE 3 (HOA MAINTAINED) - A thinning zone where all dead and dying plants and those species listed in Appendix 'A' are removed. Zone 3 is 100 feet in width beginning at the outer edge of Zone 2 and extended to 200 feet from any nearby structure. Grass located between remaining plants shall be annually mowed/cut to a 3 inch stubble height. See Fire Protection Plan for additional details. The plants shall be thinned to create a 30 percent reduction in the adjacent untreated wildland plants.
	ROADSIDE FUEL TREATMENT (HOA MAINTAINED) - This zone shall be maintained as described in Zone 1b above. This 20 foot wide zone is permanently irrigated and is the most critical to safe ingress and egress. Should water supplies become limited, this zone should be the last to have its irrigation stopped. See written Fire Protection Plan for additional for details.
	NO BUILD ZONE (PROPERTY OWNER MAINTAINED) - The No Build Zone has the same landscaping and maintenance requirements described for Zone 1A. No combustible structures, which include the houmes, can be built within this zone. The zone is 20 feet in width beginning at the southern Project boundary. See written Fire Protection Plan for further information.
— —	**NON-COMBUSTIBLE SOLID 6-FOOT WALL -** A solid non-combustible wall a minimum of 6 feet in height at the top of the slope shall be located as shown to both intercept radiant and deflect convective heat while modifying fire behavior. See written Fire Protection Plan for details.

Prepared For: SVJV Partners, LLC
701 N. 44th Street
Phoenix, AZ 85008

Prepared By: FIRE WISE2000, LLC
PO Box 339
Lower Lake, CA 95457
Telephone: (760) 745-3947
Info@firewise2000.com

FUEL MODIFICATION SYMBOL LEGEND

SYMBOL	DESCRIPTION
FD	Emergency/Fire Access Way Entrance The FH (fire hydrant) symbol is shown for reference only. Each fire hydrant is to be installed per the City of Simi Valley Fire Department Requirements.

Certified By

Melvin A Johnson, Owner Date: 9/29/2023, Revised 11/22/2023
Certified CEQA Wildland Fire Consultant
FIREWISE2000, LLC
PO Box 339
Lower Lake, CA 95457
Telephone: (760) 745-3947
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This Exhibit is found to be compliant with the North Canyon Ranch Fire Protection Plan dated 11/22/2023

ACCEPTABLE
VENTURA COUNTY FIRE DEPARTMENT
SUBJECT TO THE CORRECTIONS, MODIFICATIONS, CHANGES AND NOTES INDICATED HEREON. THIS ACCEPTANCE DOES NOT ABROGATE ANY ORDINANCE, REGULATION, RULE, POLICY OR CONTRACT CLAUSE

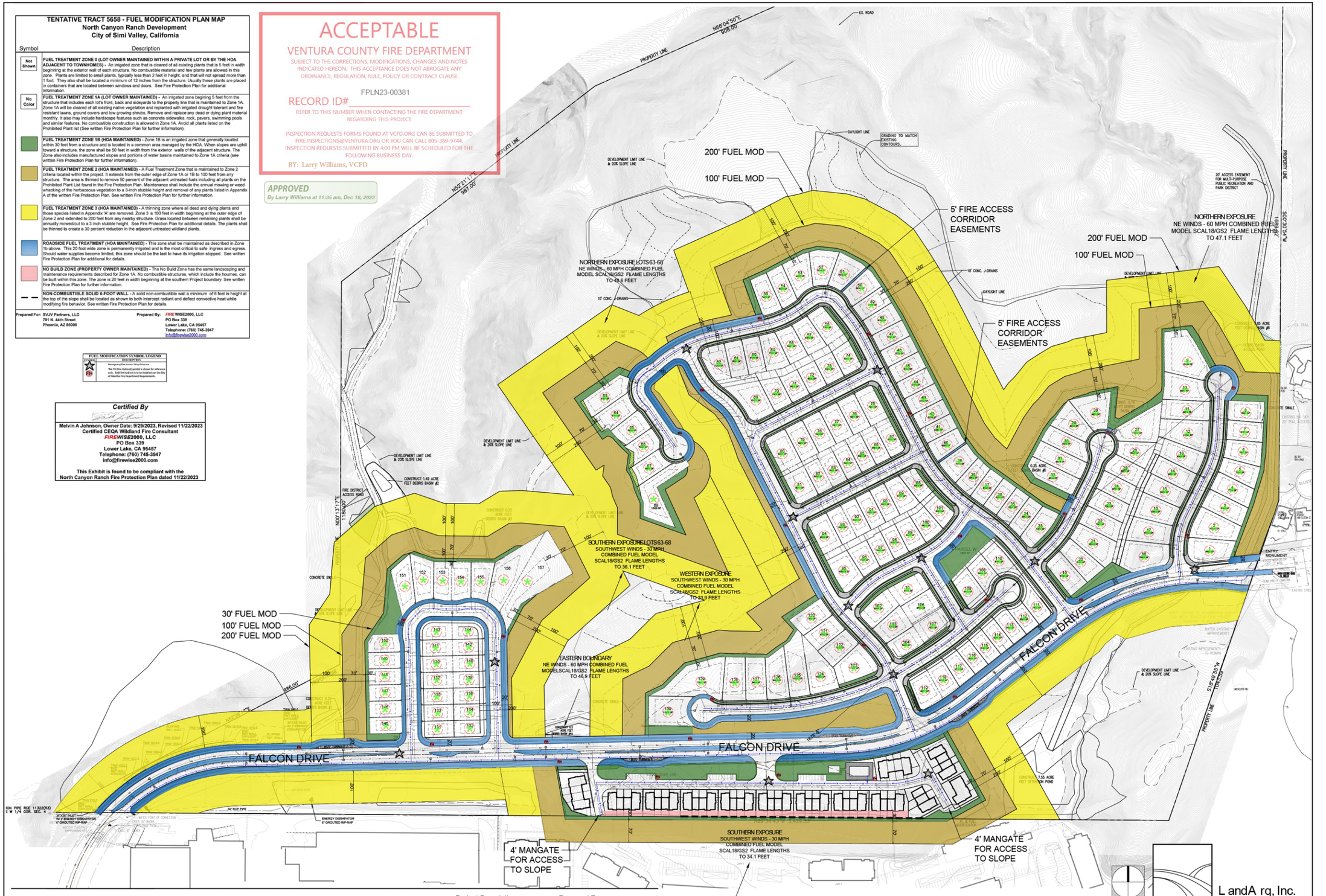
FPLN23-00381

RECORD ID#_____
REFER TO THIS NUMBER WHEN CONTACTING THE FIRE DEPARTMENT REGARDING THIS PROJECT

INSPECTION REQUESTS FORMS FOUND AT VCFD.ORG CAN BE SUBMITTED TO FIRE.INSPECTIONS@VENTURA.ORG OR YOU CAN CALL 805-389-9744. INSPECTION REQUESTS SUBMITTED BY 4:00 PM WILL BE SCHEDULED FOR THE FOLLOWING BUSINESS DAY.

BY: Larry Williams, VCFD

APPROVED
By Larry Williams at 11:35 am, Dec 18, 2023



TENTATIVE TRACT MAP NO. 5658
SIMI VALLEY, CA

Project Description:
CONCEPTUAL LANDSCAPE PLAN FOR TRACT MAP NO. 5658
SIMI VALLEY, CA

Prepared For:
SVJV PARTNERS, LLC
710 NORTH 44TH STREET
PHOENIX, ARIZONA, 85008
PHONE: (909) 941-2911

NORTH
0' 100' 200' 300' 400'
SCALE: 1" = 100'-0"

L andA rq, Inc.
865 S. Milliken Ave. Suite E
Ontario, CA 91761
Phone: 909-259-9428
Email: fausto@landarq.com
Date: 11/29/2023

NORTH CANYON RANCH
PRELIMINARY FIRE PROTECTION PLAN
TENATIVE TRACT NO. 5658
SIMI VALLEY, CALIFORNIA

September 29, 2023. Revised November 22, 2023

Owner: **SVJV Partners, LLC**
701 N. 44th Street
Phoenix, AZ 85008

Prepared by: **Herbert Spitzer, Sr. Wildland Fire Associate**
***FIRE*WISE2000, LLC**

Certified by: _____
Mel Johnson, Owner
Certified CEQA Wildland Fire Consultant
***FIRE*WISE2000, LLC**
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(760) 745-3947
info@firewise2000.com

ACCEPTABLE
VENTURA COUNTY FIRE DEPARTMENT
SUBJECT TO THE CORRECTIONS, MODIFICATIONS, CHANGES AND NOTES INDICATED HEREON. THIS ACCEPTANCE DOES NOT ABROGATE ANY ORDINANCE, REGULATION, RULE, POLICY OR CONTRACT CLAUSE

RECORD ID# FPLN23-00381
REFER TO THIS NUMBER WHEN CONTACTING THE FIRE DEPARTMENT REGARDING THIS PROJECT

INSPECTION REQUESTS FORMS FOUND AT VCFD.ORG CAN BE SUBMITTED TO FIRE.INSPECTIONS@VENTURA.ORG OR YOU CAN CALL 805-389-9744. INSPECTION REQUESTS SUBMITTED BY 4:00 PM WILL BE SCHEDULED FOR THE FOLLOWING BUSINESS DAY.
BY: Larry Williams, VCFD

APPROVED
By Larry Williams at 11:31 am, Dec 18, 2023

NORTH CANYON RANCH
PRELIMINARY FIRE PROTECTION PLAN
TENATIVE TRACT NO. 5658

Table of Contents

APPENDICES

NORTH CANYON RANCH
PRELIMINARY FIRE PROTECTION PLAN
TENATIVE TRACT NO. 5658
SIMI VALLEY, CALIFORNIA
September 29, 2023. Revised November 22, 2023

1.0 GENERAL DISCRIPTION

The proposed North Canyon Ranch development is located north of the 118 Freeway and the Simi Town Center, west of Erringer Rd., and east and south of undeveloped land in the City of Simi Valley, California (see Photo #1). Hereinafter, the North Canyon Ranch development is referred to as the "Project". The area designated for development is located within a State Responsibility Area which has been declared a Very High Fire Hazard Severity Zone (VHFHSZ) as assessed by the California Department of Forestry and Fire Protection (CAL FIRE). The Ventura County Fire Department (VCFD) provides fire protection services to the Project site. Upon annexation to the City of Simi Valley, the project will fall within a Local Responsibility Area (LRA) VHFHSZ as designated by the VCFD. This revision incorporates the comments received from the VCFD on October 27, 2023.

***Photo 1**: **Aerial Photo of the Project and Surrounding Area**. The arrow points to the approximate center of Tentative Tract 5658. Image from Google Earth, June 28, 2023.*

The project proposes to develop 157 single family residential lots and 50 townhouse sites, all located within Assessor's Parcel No. 615-0-160-455. These homes will consist of a combination of one- and two-story structures plus several open space and infrastructure lots. The entire Project consists of the construction of a total of 207 homes on 160.2 acres. It is the intent of the owner to sell the property to a builder.

This Preliminary Fire Protection Plan (PFPP) assesses the overall (on-site and off-site) wildland fire hazards and risks that may threaten life and property associated with the proposed residential development. In addition, the PFPP establishes both short and long-term fuel modification actions to minimize any projected fire hazard and risk and assigns annual maintenance responsibilities for each of the recommended fuel modification actions. The purpose of this PFPP is to provide hazardous fuel treatment and construction feature direction for developers, architects, builders, the VCFD, and the individual lot owners to use in making the structures in the proposed project relatively safe from future wildfires.

A Final FPP will be developed once the structure foundation footprints, driveway locations and landscape plan are included (Appendix 'G). Adjustments to the PFPP will be needed at that time. Appendices attached to this PFPP that provide additional information shall be considered part of this PFPP.

A small-scale map of the Project map including the biological resources within and adjacent to the development site can be found in Appendix 'E' for general layout purposes.

1.1 General Information

Owner:	SVJV Partners, LLC c/o Patrick E. Sovereign, Beus Gilbert McGroder PPPC 27401 Los Altos, Suite 400 Mission Viejo, CA 92691
Approving Departments:	
Fire Authority:	Ventura County Fire Department
Water:	VCWWD District No. 8

1.2 Relevant Building Codes 1.2 Relevant Building Codes and Standards

Requirements of this PFPP are based upon requirements listed in the 2022 California Fire Code, Chapter 49, Public Resources Code, Sections 4201 through 4204, and Government Code, Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. Local Amendments as required; Chapter 7A-California Building Code; 2022 California Residential Code sections R337; National Fire Protection Association Standards (NFPA) 13-D, 2022 Edition, Ventura County Health and Safety Code - Declaration of Nuisance 6.15.020, and supporting guidelines, the Ventura County Fire Protection District Ordinance 29 – Fire Access Road and Ordinance 32 which adopted the 2022 California Fire and Building Codes with local amendments; Simi Valley Municipal Code Chapter 9.86, and NFPA Standard 1140 – Standard for Wildland Fire Protection.

1.3 Hazardous Vegetation Around Buildings - Laws and Regulations

The following laws and regulations guide the requirements for fuel modification. These include the following: California Code of Regulations, Title 14, Division 1.5, Chapter 7, Subchapter 3, Section 1299 (see guidance for implementation "General Guideline to Create Defensible Space"). California Government Code, Section 51182. California Code of Regulations, Title 19, Division 1, Chapter 7, Subchapter 1, Section 3.07, and the following VCFD Standards and Guidelines; 14.5.3 – Fire Hydrants, 410 – Prohibited Plants, 416 Landscape Plans, 417 - Plant Reference Guide, 418 – Defensible Space, 421 – Combustible Fencing, 423 – Defensible Space Maintenance, 501 – Fire Apparatus Access, 506 - Knox – Rapid Entry System, 509 – Residential Fire Sprinklers, 515 – Defensible Space – Fuel Modification, and 517 – Composting – Mulch and Organic Processing.

2.0 WILDLAND FIRE HAZARD AND RISK ASSESSMENT

The following hazard and risk assessment is based upon historical weather data and existing and forecasted vegetation that would exist in a climax plant community. Wildfire risk is a measure of the chance of a fire starting, as determined by the presence and activity of causative agents. Fire hazard is the result of a combination of vegetation, topography, climate, weather, and the threat of fire to life and property that create difficult and dangerous conditions. The primary focus of this document is mitigation of the fire hazard and to a lesser extent, the reduction of risk of a fire starting within the tract.

Photo 2 - Aerial Photo of Project Site, September 2007. *At the time, the previous owners had graded the site in anticipation of construction.*

An aerial historical assessment of the wildland fuels was made for the Project using historical Google Earth imagery. In photo 2, areas of previous grading of the property can be seen for a development which was never built. These areas that were graded are nearly identical to those found in the current Tentative Tract 5658.

Wildland fire hazards are not static. They can be created and removed. Even areas that have not had a wildland fire component can become a wildland fire hazard. As an example, an irrigated Eucalyptus plantation could be planted for the purpose of growing firewood or providing dry leaves for crafts. If the plantation was properly maintained, it would not be a significant wildland fire hazard. However, if the owner went out of business and the property were no longer maintained, it would likely become a signficant fire problem as the trees would die due to the lack of irrigation and maintenance.

The Fire Hazard Severity Zone Classification on the CAL FIRE website is shown in Figure 1.

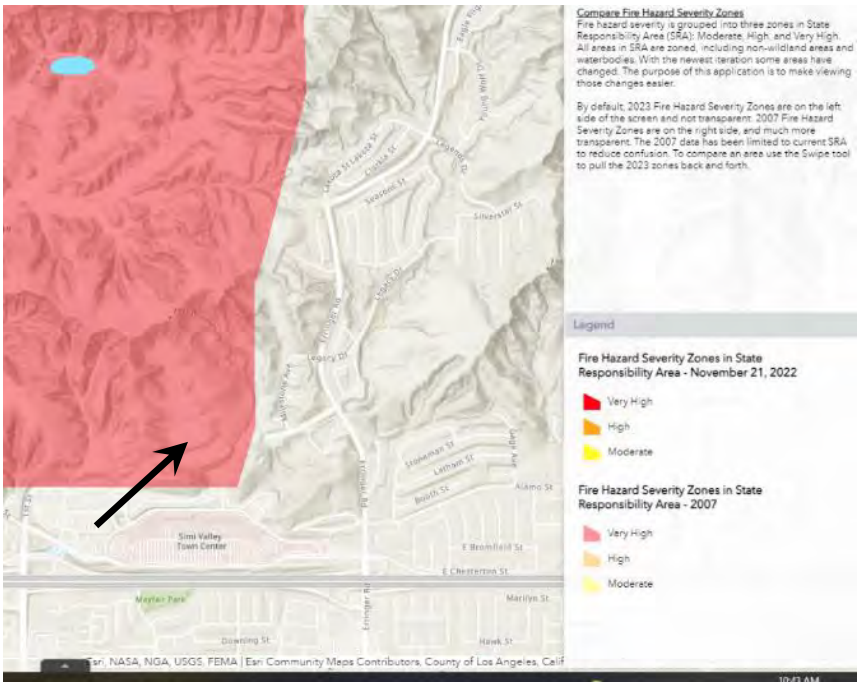

Figure 1 – Current Wildland Fire Hazard From the CAL FIRE Website. *This map was created in 2007. The arrows point to the approximate Project location. All of the Project site is shown as being in a Very High Fire Hazard Severity Zone (Red). The highest classification in California.*

The following vegetative and weather assessment is made based upon historical weather data and existing and forecasted vegetation growth.

2.1 Weather Review and Assessment

Weather has a dramatic influence on wildland fire behavior. The most critical weather pattern to the project area is a hot, dry offshore wind, typically called a Santa Ana wind. Such wind conditions are usually associated with strong (>50 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). This is also when non-irrigated vegetation is at its lowest moisture content. The Ventura County area is considered one of the areas in southern California that is strongly influenced by powerful Santa Ana winds.

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 two closest RAWS to the Project with adequate historical data are the Cheesebro RAWS located at Latitude 34 ° 11 ' 05" N and Longitude 118 ° 43 ' 02" W at an elevation of 1,650 feet and the Wiley Ridge RAWS located at Latitude 34° 22' 18"N and Longitude 118° 50' 27"W. Both are approximately 550 feet higher than the Project site. The Cheeseboro RAWS is approximately 7.7 miles southeast of the Project in rolling terrain, more representative of the Project site. The Wiley Ridge RAWS is located in mountainous terrain on a ridge approximately 6.95 miles to the northwest. Winds on ridges are generally higher than those found mid-slope or in nearby valleys. The Project is located near the base of the Santa Susana Mountain range which tends to funnel northeast down through north to south oriented canyons. The Cheeseboro RAWS, based on its location and data history, is the best weather station for determining worst case weather.

Data for all RAWS is archived in the Western Region Climate Center in Reno, Nevada. The typical prevailing summer time wind pattern is out of the west/southwest and normally is of a much lower velocity (5-10 MPH with occassional gusts to 20 MPH) and is associated with relative humidity readings ranging between 20% and occasionally more than 50% due to the sites proximity to onshore winds from the ocean.

In Figure 2, which follows, wind gust data is presented. The highest wind gust reported in 2018 was 55 MPH. **FIREWISE2000, LLC** reviewed the weather data for the Cheeseboro RAWS and found that winds in excess of 60 have been observed.

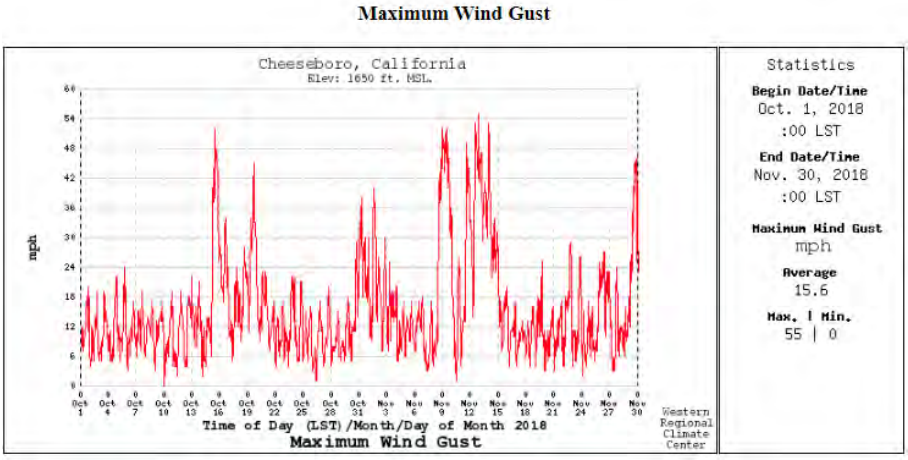

Figure 2 – Wind Gusts – Cheeseboro RAWS – *Note the maximum wind gust during the fall of 2018 was 55 MPH.*

Below in Figure 3 are two graphs of Relative Humidity and 10 HR Fuel Moisture during the fall of 2018. 10 HR fuel moisture content in dead fuels consisting of roundwood ¼ to 1-inch (0.6 to 2.5 cm) in diameter. In November of 2018, a major wildland fire occurred that was named the Woolsey Fire. These graphs depict the weather factors during that time period.

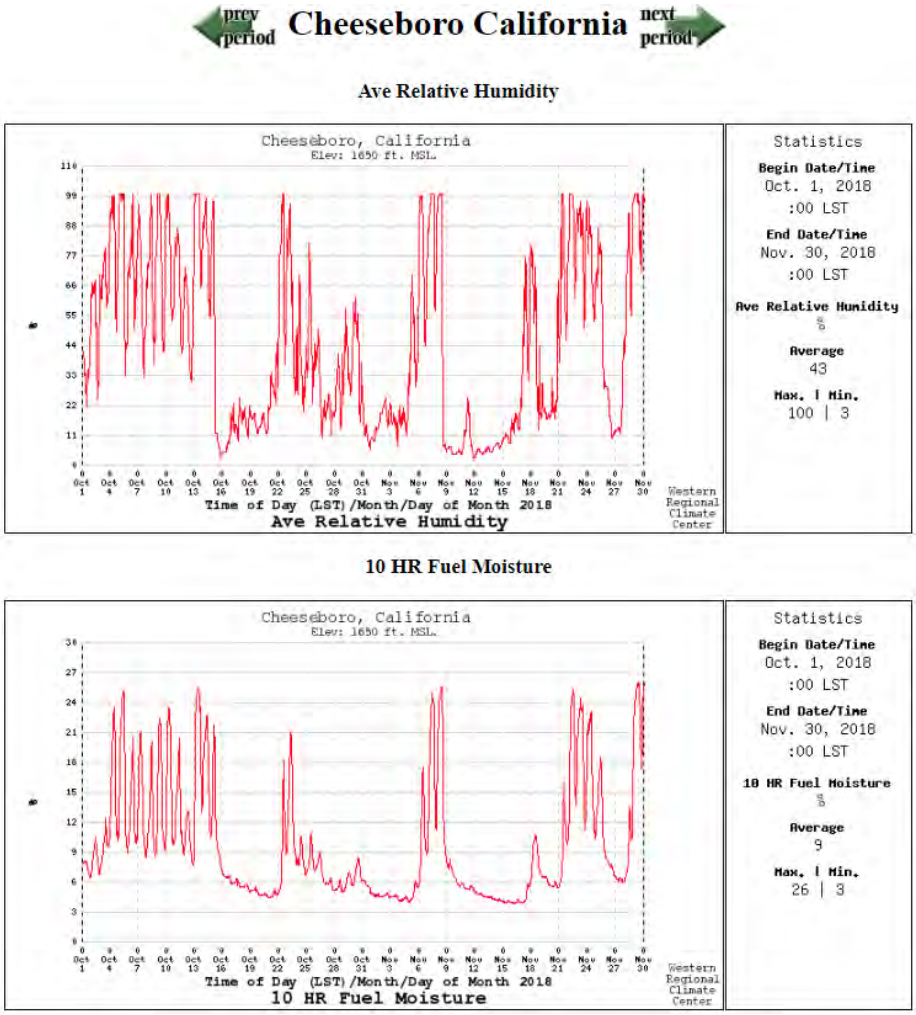

Figure 3 – Graph of Relative Humidity and 10 Fuel Moisture – Note the very low humidity in mid-November that corresponds to the low moisture content in 10 HR fuels.

In addition to Santa Ana winds, there is a historic pattern of wildland fires burning from the southwest to northeast. Every 5-10 years, a "rare event" hot dry, southwest to west wind of 30 MPH will occur. This moderately strong, dry wind condition usually occurs in the late afternoon or early evenings on very hot days, especially during the normal summertime (June through September) months.

All other (northwest, southeast and south) 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.

2.2 Fire History

Fire history is a component to assessing both the on-site and off-site wildfire risk and hazard. Historical fire history data for all of California is maintained CAL FIRE. The historical data is for mapped fires of 100 acres or more. Fires less than 100 acres may have been mapped and included in the data should the fire have resulted in a major loss of life or property. Figure 5 shows the large fire history in and around the Project. It is highly likely that other smaller fires have occurred in the area that were not mapped.

Figure 5 – Fire History. *Note that the Project site, white arrow, has burned twice in a large fire in the past 53 years. The most recent was the 2003 Simi fire.*

The most recent Simi Fire of 2003 started on October 25, 2003 and was not contained/controlled until November 5. The cause of the fire was never determined. At its peak, it reported to be burning 10,000 acres an hour according to one official. Due to the fires fast movement, there were not sufficient fire fighting resources and many residents were forced to protect their own properties. The fire burned 108,204 acres including 37 homes and 278 outbuildings. While no deaths occurred, there were 21 non-fatal injuries, primarily to firefighters.

Syphard and Keeley found that in a study of California Wildfires from 2013 to 2018 in California that structural characteristics explained more of a difference between survived and destroyed structures than defensible space distance. This would explain why a structure located far from any vegetation can be destroyed by wildfire.

2.3 Off-Site Fire Hazard and Risk Assessment

The fire environment around the Project currently can be described as a light to moderately vegetated area with most slopes being downhill into the proposed area designated for development. Downhill slopes will reduce fire intensity. Regardless, the area is susceptible to strong winds and low relative humidity. The Project area itself has been previously graded in preparation for development. As a result, the vegetation within the Project building pad locations is light. This hazard assessment is therefore based on the expected climax fuels that abut the areas proposed for development, primarily on land located within the owner's property.

The vegetation density and plant succession status on the perimeter of the developed portion of the Project is variable. This variation can be due to one or more environmental factors including but not limited to soil type and depth, slope angle and exposure to the sun, plant species, activities of both animals and humans, and past wildland fire activity.

The Draft EIR contains a biological resources map that lists plant species found throughout the 160.2-acre parcel of land being developed. ***FIRE*****WISE2000, LLC** also reviewed the Tree Survey and Arborist Report Update with Fuel Modification Zones prepared by ELMT Consulting. The existing species include but are not limited to California Sagebrush, Black Sage, California Brittlebush, California Buckwheat, Lemonade Berry, Engleman Oak, Pacific Willow in drainages, Prickly-Pear Cactus, Mulefat, Elderberry and various grass species. Most tree species located in a fuel modification zone are a wildfire concern unless they are properly maintained and managed.

Each cardinal direction is assessed below beginning with the Northern Exposure Fuels. For fire behavior planning, the likely climax plant communities will be utilized and discussed below.

Note that the photos which follow in this section were taken at different times of the year, some during the wet winter season and others during the dry summer. The vegetation is therefore in some cases green, and in other photos shown during the summer dormant period when annual grasses have died.

Northern Exposure Fuels

The northern boundary of TT 5658 will abut wildland fuels as seen in Photo 3. A portion of the northern boundary, north of lots 151-154 will have a maintenance road designed to provide access to two debris basins. Wildland fuels extend from the northern Project boundary to the top of the Santa Susana Mountain range and beyond. See Appendix 'E' for a general visual layout of the tract. Wildland fuels are present within 100 feet of the planned structures located along most of the northern development perimeter. The northern exposure will be exposed to very strong winds from the North.

Photo 3 – Looking Southeast from a Hill Overlooking the Main Development Area*.*
Note the downhill terrain and light to moderate fuels.

Current vegetation consists of a combination of small to medium sized plants including but not limited to California Buckwheat, Sage, Mustard, and various grass species. For planning purposes, the likely climax vegetation along the Northern boundary of the Project consists of a Combined Fuel Model [SCAL 18 – Sage/Buckwheat (80%) and gs2– Low load dry climate grass-shrub (20%)]. Slopes are downhill into the Project and range from nearly level to 20 to 60 percent.

Existing vegetation of Elderberry, Cactus, and Lemonade Berry can all be incorporated into fuel modification zones if properly spaced and maintained as they are not recognized as being fire prone.

Eastern Exposure Fuels

TT 5658 will be exposed to wildland fire from the east. To the east, an existing trail is located within the Project that is 20 feet in width and separates the existing development located along Falcon Street from the Project (See Photo 4). This 4-lane roadway is scheduled to be extended westerly from the eastern boundary and will serve as the major access route. The eastern exposure will be exposed to very strong winds from the north.

The likely climax vegetation fuel model for the eastern exposure is a Combined Fuel Model [SCAL 18 – Sage/Buckwheat (80%) and gs2– Low load dry climate grass-shrub (20%)]. Slopes are downhill into the Project and range from nearly level to 5 to 60 percent.

Photo 4 - Looking Northwest from the Current Terminus of Falcon Street. *The black arrow points to the eastern Project boundary. Across this fence to the north is where development is scheduled to occur. The area to the right of the arrow is the entrance to the Big Sky Trail.*

Southern Exposure Fuels

The southern boundary of TT 5658 abuts the existing Avalon Apartment complex and Lowes Home Improvement Center located along or north of Jefferson Way. The southern exposure will be exposed to strong south or southwest winds. Several manufactured slopes exist between the Project and the existing development. The lower portion of these manufactured slopes as seen in Photo 5 are being maintained as a fuel modification zone. However, the upper or portion of these slopes that will be in proximity to a portion of the Project appear to be recovering from prior grading and the fuels are becoming heavier.

Photo 5 - Aerial View of a Portion of the Southern Boundary of the Project. *Wildland fuels are present between the existing development to the south and the Project. The southern edge of the Project is located near the top of the manufactured slope identified by a black arrow. The owners to the south are maintaining 100 feet of fuel treatment (red arrow) between the Project and their buildings as can be seen above.*

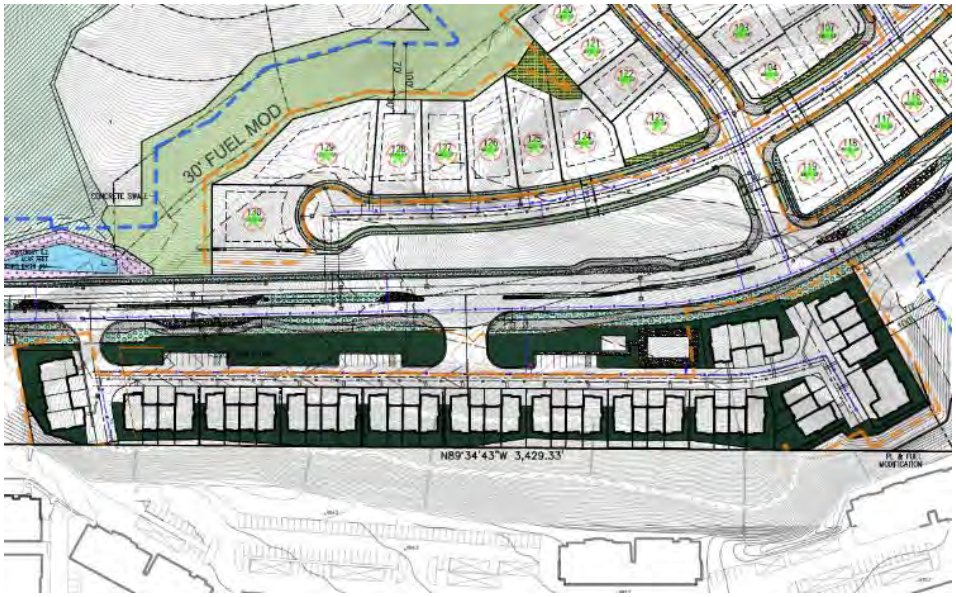

Figure 4 – The Area Between the Project and Adjacent Development to the South. *Compare the figure above to Photo 5 to better assess this area.*

As can be seen in Figure 4 which follows, a significant portion of the hillside seen in Photo 5 will be graded thus removing a significant portion of the untreated vegetation. What will remain will be an island, separated from untreated wildland fuels by a minimum of 400 feet. Comparing the image in Photo 5 with the Figure shows that the southern boundary of the

Project will be near where the black arrow points. Therefore, what will remain will be a pie shaped piece, the largest dimension of which will be approximately 100 feet in width which tapers down to a point to the west where it will intersection existing fuel modification performed by the adjacent property owner.

As the slopes are uphill into the Project and exceed 20 percent, Zone 1 per the VCFD fuel modification zone guidelines need to be 50 feet in width.

The owners of the Project have not been able to secure an offsite fuel treatment easement. Therefore, the special fuel modification zone found in Section 6.7 shall be established and the additional construction features found in Section 7.3 required due to the lack of 100 feet of fuel treatment.

The likely climax vegetation fuel model for the southern exposure is a Combined Fuel Model [SCAL 18 – Sage/Buckwheat (80%) and gs2– Low load dry climate grass-shrub (20%)]. Slopes are uphill into the Project and range from 40 to 60 percent. These slopes will increase fire behavior regardless of vegetation type.

Western Exposure Fuels

The western boundary of the Project will abut wildland fuels for both the main development located along the eastern perimeter and western portion of the Project. See Appendix 'E' for a clearer visualization of the exposures. Photo 6 shows a portion of the western exposure.

Photo 6 – Looking Southwest Across the Western Building Pad. *Note hillside to the west is downhill and generally these fuels are light in part due to past wildfire activity.*

Much of the western boundary has wildland fire exposures from the west or southwest. Worst case winds from the west can be expected to be 30 MPH. Any fire burning into this area from the north would tend to burn parallel to the western boundary and not be a great concern for the western boundary of the Project.

A VCFD access road will also serve to provide access for the maintenance of flood control debris basin #2 and #3 which will provide some protection. Several structures on the western boundary of the Project are located within 100 feet of the western Project boundary and will require an offsite fuel treatment easement in order to provide the required fuel modification.

For planning purposes, the likely climax vegetation along the western boundary will consist of a combined fuel model of [SCAL18 – Sage / buckwheat (80%) and gs2 - Moderate load dry climate grass-shrub (20%)]. Slopes are downhill toward the Project and range from 20 to 70 percent. Downhill slopes will reduce fire behavior.

Hilltop lots – 63-68

These lots are all unique in that they will have wildland fire exposures that are uphill. Fire behavior is therefore more extreme under worst case weather and fuel moisture conditions. All of these lots are surrounded by a forecast climax plant community consisting of a combined fuel model of [SCAL18 – Sage / buckwheat (80%) and gs2 - Moderate load dry climate grass-shrub (20%)]. When slopes and winds are in alignment, fire behavior is further advanced. The primary variable is therefore slope adjacent to these lots. Below is a summary of the slopes for each exposure:

- North – uphill slopes of 35 to 60 percent
- East – Uphill slopes of 40 to 70 percent.
- South – Uphill slopes of 20 to 55 percent
- West – Uphill slopes of 35 to 70 percent

To account for these unique set of factors, additional fire behavior calculations were made for each exposure. See Section 3.1 for fire behavior calculations for these hilltop lots.

Summary of Wildfire Concerns

The greatest wildfire concern will be a strong north or northeast wind condition which would tend to push a fire through the undeveloped land found to the north and east into the Project. Embers from a fire burning outside the Project or a structure fire located to the northeast could land within the Project on a receptive host and start a fire. Embers could also travel across the Project and ignite the vegetation on the adjacent hillside located to the south and west of the Project and spread rapidly to the southwest impacting lots 120, and 125-129. This would not be a major concern as this fire would be moving away from the Project.

2.4 On-Site Fire Hazard and Risk Assessment

The majority of the native and exotic vegetation within the Project will be cleared during the grading process and where appropriate will be replanted with fire resistant irrigated landscaping. A few areas of open space will remain including but not limited to flood control facilities or manufactured slopes.

3.0 PREDICTING FIRE BEHAVIOR

The BehavePlus 6.0.0 Fire Behavior Prediction and Fuel Modeling System developed by USDA–Forest Service research scientists Patricia L. Andrews and Collin D. Bevins at the Intermountain Forest Fire Laboratory, Missoula, Montana, is one of the best systematic methods for predicting wildland fire behavior. The BehavePlus fire behavior computer modeling system is utilized by wildland fire experts nationwide as well as other countries because of its expanded features and capabilities. Fire behavior is calculated based on the unique topography, vegetation, climate and weather factors associated with the Project site. Collectively, these factors form the fire environment or the conditions, influences, and modifying forces that control fire behavior (Countryman, 1972).

Wildland fire managers use the BehavePlus modeling system to determine expected fire intensity, rate-of-spread and flame lengths for a surface fire with a reasonable degree of certainty for use in Fire Protection Planning purposes. Crown fire flame length are not modeled using BehavePlus. ***FIRE*WISE2000, LLC** used the BehavePlus 6.0.0 Fire Behavior Prediction Model to make the fire behavior assessments for the Project discussed below.

When assessing the fire hazard, flame length is a critical component. Flame length modeled for worst case high winds, fuels, fuel moisure, and topography is an indicator of how close to a structure the flame will get from burning wildland fuels. It is critical not to allow direct contact with a structure. How fire flame length is measured in shown in Figure 6. All measurements of flame length in this PFPP are shown in feet.

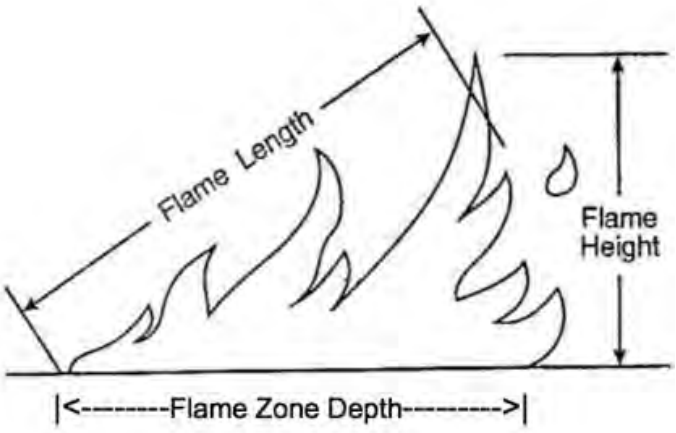

Figure 6 – Flame Length. *It is critical to conduct fuel treatments in nearby wildland fuels and to install fire resistant landscaping adjacent to each structure that will reduce the likelyhood of a flame coming into contact with the structure.*

Fire characteric ratings range from low, to moderate, active, very active, and extreme. So when someone states that a fire is exhibiting "extreme" fire behavior, the Chart in Figure 7 provides guidance in interpreting the fire behavior calculations which follow in Section 3.1.

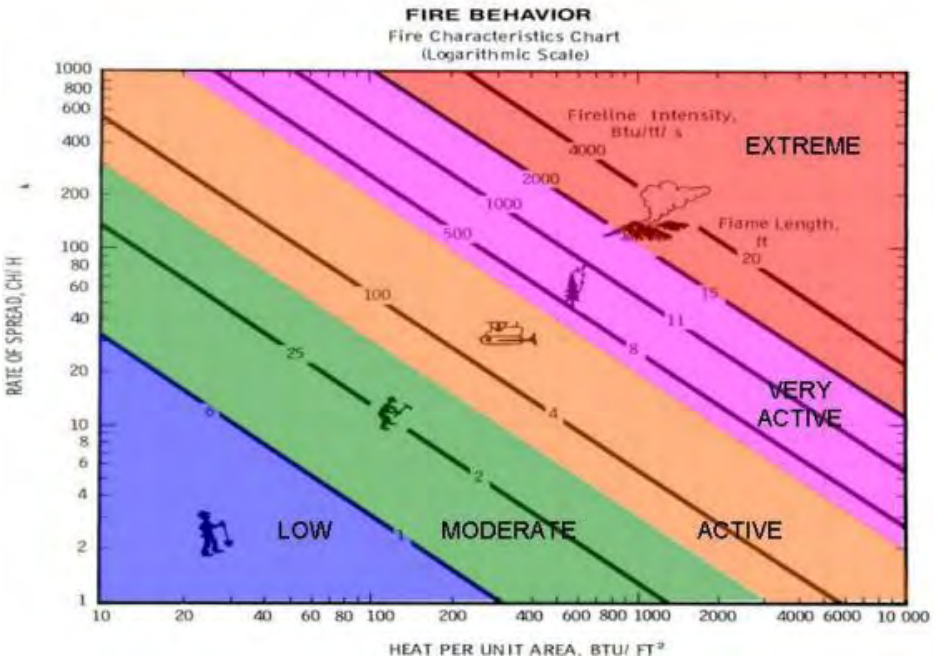

Figure 7 – Fire Characteristics Chart. *Flames of over 15 feet or a fireline Intensity of over 2,000 BTU/ft/sec is classified as extreme fire behavior.*

3.1 Wildland Fire Behavior Calculations for the On-site Hazardous Vegetative Fuels

Wildland fire behavior calculations have been projected for the hazardous vegetative fuels located adjacent to and bordering the proposed Project. These projections were based on "worst case" Ventura County fire weather assumptions in the vicinty of the Project and from Project site observations and fuel moisture levels typically observed during the local fire season. Weather data was obtained from the RAWS (Remote Automatic Weather Station) network stations located closest to the Project area that contain adequate historical data. ***FIREWISE2000, LLC*** typically likes to see 10 or more years of weather data. There are some RAWS that have been installed in the last decade that due to their relatively young age do not have significiant historical data upon which to base worst case conditions.

Over the past decade, California and much of the Western United States has been experiencing increased fire behavior from what was typically seen in the past as documented by firefighters from multiple agencies. It is due in part to our warming climate, which frequently results in lower relative humidity over prolonged periods of time in turn resulting in lower moisture content in both living and dead wildland fuels. When fuels are drier, they burn hotter and are easier to ignite, especially on hot days as the fuel temperature is closer to its ignition temperature. The fire behavior calculation inputs for anticipated fuel moistures have been adjusted to account for climate change and thus, better represent "worst case" weather. The downward fuel moisture adjustment results in approximately a 5 foot increase in flame lengths in heavier fuels.

Several scenarios are depicted below include eight (8) separate BehavePlus Fire Modeling System computer calculations of the wildland and treated fuels. A set of four (4) for the hilltop lots located near the center of the Project which are unique due to the slopes adjacent to these lots are uphill. Uphill slopes increase fire behavior. All the scenarios display the expected Rate of Fire Spread (expressed in feet/minute), Flame Length (expressed in feet), and Fireline Intensity (expressed in British Thermal Units/foot/second and include the calculation inputs used in the BehavePlus program. The scenarios also show the change in Rate of Fire Spread, Flame Length, and Fireline Intensity following the completion of the required fuel treatments in a treated fuel modification Zone 2, often referred to as a thinning zone..

Fire Scenario #1 (Northern Exposure) ***Fire Approaching from the North, Northeast or East*** ***(Late Fire Season With 60 MPH North, Northeast and East Wind Conditions)***	
Fire Behavior Calculation Input Data • **20 percent slope** • **60 mph 20-foot wind speed** • **160º aspect from north** • **45º wind direction from north**	**Anticipated Fuel Moistures** *** 1-Hour Fine Fuel Moisture of..…… 2%** *** 10-Hour Fuel Moisture of.…… 2%** *** 100-Hour Fuel Moisture of.....…….…... 3%** *** Live Herbaceous Fuel Moisture of.…..... 30%** *** Live Woody Fuel Moisture of…….…..... 45%**
Expected Fire Behavior **Combined Fuel Model [SCAL18 – Shage/Buckwheat (80%) and gs2 – Moderate load dry climate grass-shrub (20%)]**	
Rate of Spread - 386 ft/min	
Fireline Intensity - 24,559 BTU/ft/s	
Flame Length - 47.1 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model [tl2 - Low load broadleaf litter (50%) and gr1 – Short, sparse, dry climate grass (50%)]**	
Rate of Spread - 25 ft/min	
Fireline Intensity - 67 BTU/ft/s	
Flame Length - 3.1 feet	

Fire Scenario #2 (Northern Exposure) Hilltop Lots Fire Approaching from the North, Northeast or East (Late Fire Season With 60 MPH North, Northeast and East Wind Conditions)	
Fire Behavior Calculation Input Data • 60 percent slope • 60 mph 20-foot wind speed • 80º aspect from north • 45º wind direction from north	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture of..... 2% * 10-Hour Fuel Moisture of..... 2% * 100-Hour Fuel Moisture of..... 3% * Live Herbaceous Fuel Moisture of..... 30% * Live Woody Fuel Moisture of..... 45%
Expected Fire Behavior **Combined Fuel Model [SCAL18 – Shage/Buckwheat (80%) and gs2 – Moderate load dry climate grass-shrub (20%)]**	
Rate of Spread - 411 ft/min	
Fireline Intensity - 26,340 BTU/ft/s	
Flame Length - 48.6 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model [tl2 - Low load broadleaf litter (50%) and gr1 – Short, sparse, dry climate grass (50%)]**	
Rate of Spread - 25 ft/min	
Fireline Intensity - 67 BTU/ft/s	
Flame Length - 3.1 feet	

Fire Scenario #3 (Eastern Exposure) Fire Approaching from the North, Northeast or East (Late Fire Season With 60 MPH North, Northeast and East Wind Conditions)	
Fire Behavior Calculation Input Data • 5 percent slope • 60 mph 20-foot wind speed • 210º aspect from north • 45º wind direction from north	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture of..... 2% * 10-Hour Fuel Moisture of..... 2% * 100-Hour Fuel Moisture of..... 3% * Live Herbaceous Fuel Moisture of..... 30% * Live Woody Fuel Moisture of..... 45%
Expected Fire Behavior **Combined Fuel Model [SCAL18 – Shage/Buckwheat (80%) and gs2 – Moderate load dry climate grass-shrub (20%)]**	
Rate of Spread - 384 ft/min	
Fireline Intensity - 24,419 BTU/ft/s	
Flame Length - 46.9 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model [tl2 - Low load broadleaf litter (50%) and gr1 – Short, sparse, dry climate grass (50%)]**	
Rate of Spread - 25 ft/min	
Fireline Intensity - 67 BTU/ft/s	
Flame Length - 3.1 feet	

Fire Scenario #4 (Eastern Exposure) Hilltop Lots Fire Approaching from the North, Northeast or East (Late Fire Season With 60 MPH North, Northeast and East Wind Conditions)	
Fire Behavior Calculation Input Data • 70 percent slope • 60 mph 20-foot wind speed • 80° aspect from north • 45° wind direction from north	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture of..…… 2% * 10-Hour Fuel Moisture of..…… 2% * 100-Hour Fuel Moisture of.....……..…... 3% * Live Herbaceous Fuel Moisture of..…..... 30% * Live Woody Fuel Moisture of…….....… 45%
Expected Fire Behavior **Combined Fuel Model [SCAL18 – Shage/Buckwheat (80%) and gs2 – Moderate load dry climate grass-shrub (20%)]**	
Rate of Spread - 423 ft/min	
Fireline Intensity - 27,285 BTU/ft/s	
Flame Length - 49.4 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model [tl2 - Low load broadleaf litter (50%) and gr1 – Short, sparse, dry climate grass (50%)]**	
Rate of Spread - 25 ft/min	
Fireline Intensity - 67 BTU/ft/s	
Flame Length - 3.1 feet	

Fire Scenario #5 (Southern Exposure) Fire Approaching from the South or Southwest (Summer Fire Season With 30 MPH West, Southwest or South Wind Conditions)	
Fire Behavior Calculation Input Data • 50 percent slope • 30 mph 20-foot wind speed • 180° aspect from north • 225° wind direction from north	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture of..…… 2% * 10-Hour Fuel Moisture of..…… 3% * 100-Hour Fuel Moisture of.....……..…... 4% * Live Herbaceous Fuel Moisture of..…..... 30% * Live Woody Fuel Moisture of…….....… 55%
Expected Fire Behavior **Combined Fuel Model [SCAL18 – Shage/Buckwheat (80%) and gs2 – Moderate load dry climate grass-shrub (20%)]**	
Rate of Spread - 168 ft/min	
Fireline Intensity - 12,152 BTU/ft/s	
Flame Length - 34.1 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model [tl2 - Low load broadleaf litter (50%) and gr1 – Short, sparse, dry climate grass (50%)]**	
Rate of Spread - 25 ft/min	
Fireline Intensity - 67 BTU/ft/s	
Flame Length - 3.1 feet	

Fire Scenario #6 (Southern Exposure) Hilltop Fire Approaching from the South or Southwest (Summer Fire Season With 30 MPH West, Southwest or South Wind Conditions)	
Fire Behavior Calculation Input Data • 55 percent slope • 30 mph 20-foot wind speed • 230º aspect from north • 225º wind direction from north	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture of..…… 2% * 10-Hour Fuel Moisture of..…… 3% * 100-Hour Fuel Moisture of.....…….…... 4% * Live Herbaceous Fuel Moisture of…..... 30% * Live Woody Fuel Moisture of……..... 55%
Expected Fire Behavior **Combined Fuel Model [SCAL18 – Shage/Buckwheat (80%) and gs2 – Moderate load dry climate grass-shrub (20%)]**	
Rate of Spread - 193 ft/min	
Fireline Intensity - 13,977 BTU/ft/s	
Flame Length - 36.1 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model [tl2 - Low load broadleaf litter (50%) and gr1 – Short, sparse, dry climate grass (50%)]**	
Rate of Spread - 25 ft/min	
Fireline Intensity - 67 BTU/ft/s	
Flame Length - 3.1 feet	

Fire Scenario #7 (Western Exposure) Fire Approaching from the West or Southwest (Summer Fire Season With 30 MPH West, Southwest or South Wind Conditions)	
Fire Behavior Calculation Input Data • 20 percent slope • 30 mph 20-foot wind speed • 80º aspect from north • 225º wind direction from north	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture of.....…… 2% * 10-Hour Fuel Moisture of..…… 3% * 100-Hour Fuel Moisture of.....…….…... 4% * Live Herbaceous Fuel Moisture of…..... 30% * Live Woody Fuel Moisture of……..... 55%
Expected Fire Behavior **Combined Fuel Model [SCAL18 – Shage/Buckwheat (80%) and gs2 – Moderate load dry climate grass-shrub (40%)]**	
Rate of Spread - 165 ft/min	
Fireline Intensity - 11,996 BTU/ft/s	
Flame Length - 33.9 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model [tl2 - Low load broadleaf litter (50%) and gr1 – Short, sparse, dry climate grass (50%)]**	
Rate of Spread - 25 ft/min	
Fireline Intensity - 67 BTU/ft/s	
Flame Length - 3.1 feet	

Fire Scenario #8 (Western Exposure) Hilltop Fire Approaching from the West or Southwest (Summer Fire Season With 30 MPH West, Southwest or South Wind Conditions)	
Fire Behavior Calculation Input Data • **70 percent slope** • **30 mph 20-foot wind speed** • **260º aspect from north** • **225º wind direction from north**	**Anticipated Fuel Moistures** *** 1-Hour Fine Fuel Moisture of..... 2%** *** 10-Hour Fuel Moisture of..... 3%** *** 100-Hour Fuel Moisture of..... 4%** *** Live Herbaceous Fuel Moisture of..... 30%** *** Live Woody Fuel Moisture of..... 55%**
Expected Fire Behavior Combined Fuel Model [SCAL18 – Shage/Buckwheat (80%) and gs2 – Moderate load dry climate grass-shrub (40%)]	
Rate of Spread - 202 ft/min	
Fireline Intensity - 14,666 BTU/ft/s	
Flame Length - 37.1 feet	
Expected Fire Behavior in Treated Fuels Combined Fuel Model [tl2 - Low load broadleaf litter (50%) and gr1 – Short, sparse, dry climate grass (50%)]	
Rate of Spread - 11 ft/min	
Fireline Intensity - 67 BTU/ft/s	
Flame Length - 3.1 feet	

A fire burning along the northern, eastern, southern, and western exposures during worst case wind, fuel moisture, in the expected climax vegetation type under worst case weather and fuel moisture conditions would produce extreme fire behavior with flames in excess of 15 feet as shown in **red** in each of the previous fire scenarios. With the fuel treatments described in Section 6.0 that are shown in **green** in each of the previous fire scenarios, all fire behavior flame lengths are classified as moderate or active and when based on fireline intensity. This is a significant improvement and much less likely to result in damage to a structure due to radiant or convective heat.

As indicated in Section 1.3, the Project is located within a designated VHFHSZ. In additional to fuel modification zones, special building features are required as described in Section 7.0.

3.2 Wildland Fire Behavior Calculations for the Off-site Hazardous Vegetative Fuels

Nearly all the wildland fuels located within 100 feet of a structure are located on site. For those few areas that are off-site vegetative fuels that pose a wildland fire hazard, they were incorporated into the on-site calculations. As a result, no wildland fire behavior calculations are presented for the off-site hazardous vegetative fuels.

4.0 ASSESSING STRUCTURE IGNITIONS IN THE WILDLAND URBAN/INTERFACE

Structure ignitions from wildland wildfires come from three sources of heat: convective firebrands (flying embers), direct flame impingement, and radiant heat. The BehavePlus Fire Behavior Computer Modeling Program does not address wind blown embers or firebrands from a structure ignition perspective. However, even though ignition resistant exterior building materials will be used in the construction of the homes built in the development (see APPENDIX 'D' for the description of ignition resistive construction), wind driven embers and radiant and convective heat issues are addressed in this PFPP.

4.1 Firebrands

Firebrands are pieces of burning materials that detach from burning fuel due to the strong convection drafts in the flaming zone. Firebrands may also be referred to as embers. Firebrands can be carried a long distance (one mile or more) by fire drafts and strong winds. Severe wildland/urban interface fires can produce heavy showers of firebrands. The chance of these firebrands igniting a structure will depend on the size and number of the firebrands, how long each firebrand burns after contact, and the type of building materials, building design, and construction features that are incorporated into the structure. Firebrands landing on combustible roofing and decks are common sources for structure ignition (See Photo 7). They can also enter a structure through unscreened vents, decks and chimneys, unprotected skylights, and collect beneath overhangs.

Photo 7 – Ember Shower. Roofs that are not Class A fire rated, vents that are not ember resistant, and combustible material that is located adjacent to a home can all contribute to the loss of a structure. Note the fire on the roof and the landscaping adjacent to the structure. Photo credit to the Insurance Institute for Business & Home Safety.

Even with non-combustible roofing, firebrands landing on leaves, needles, and other combustibles located on a roof (due to lack of maintenance) can cause structure ignition. Any open windows, doors or other types of unscreened openings are sources for embers to enter a structure during a wildland fire. If the herein maintenance issues are addressed on a regular basis, firebrands should not be a concern for the North Canyon Ranch as each home will be constructed with ignition resistant building materials and ember resistant venting.

4.2 Radiant Heat/Direct Flame Impingement

Radiation and convection involve the transfer of heat directly from the flame. Unlike radiation heat transfer, convection requires that the flames or heat column contact the structure. An ignition from radiation (given an exposed flammable surface) heat transfer depends on two aspects of the flame: 1) the radiant heat flux to a combustible surface, and 2) the duration (length of time) of the radiant flux. The radiant heat flux depends on the flame zone size, flame-structure distance, and how much combustible material of the structure is exposed to the flame. While the flame from a wildfire may approach 1,800 degrees Fahrenheit, it is the duration of heat that is more critical. For example, a blow torch flame typically approaches 2,100 degrees Fahrenheit, yet a person can easily pass their hand through the flame. Heat duration only becomes critical to a home with a wood exterior surface if the heat is allowed to remain for 30-90 seconds.

Research scientist Dr. Jack Cohen of the United States Forest Service has found that a home's characteristics--its exterior materials and design--in relation to the immediate area around a home within 100 feet principally determine the home ignition potential. He calls the home and its immediate surroundings, the home ignition zone. In a study of ignition of wood wallboard, tests by a USDA Forest Service research team described in the Proceedings of the 1st International Fire and Materials Conference showed that flame impingement for sufficient length of time (approximately 1 min.) ignites a typical hardboard siding material. Since the requirement in this PFPP is for a non-combustible wall or 1-hour rated fire resistive construction for the exterior portion of a structure, the likelihood of the homes' exteriors reaching ignition temperature is highly unlikely due to either radiant or convective heat.

Fire agencies consider fuel treatment as a principal approach to wildland fire hazard reduction. Whenever the flame length, 1-2 minutes in duration or more, is equal to or more than the separation of combustible vegetation from a combustible structure, there is a high probability of structure ignition. Contact with a fire's convection heat column also may cause ignition but the temperature of the column's gases is generally not hot enough or long enough in duration to sustain the ignition of the structure.

Comparing the expected wildland fire behavior projections in each of the scenarios in Section 3.1 against the required fuel modification zones outlined in Section 6.0, demonstrate substantial reductions in the expected flame length and fireline intensity.

By requiring the structures exposed to the threat of extreme wildfire to incorporate the following guidelines, those structures will be provided with the most effective treatment for minimizing losses from flame impingement and associated radiant heat intensities:

- Each structure is constructed of ignition resistant building materials.
- Each structure is provided with ember resistant venting.
- The area surrounding each structure contains an ember resistant Zone absent all combustible materials, an irrigated Zone (defensible space) and a Thinning Zones (low fuel volume buffer strips) between the irrigated zone and the untreated wildland fuels.

The homeowners shall be required to maintain their properties to Zone 1A fuel treatment standards and shall keep the roof and any rain gutters free of leaves, needles and other combustible debris. All firewood and other combustible materials must be properly stored away from the structure so that burning embers falling on or near the structure have no suitable host. Each homeowner is responsible for maintaining their homes and for keeping all doors and windows tightly closed whenever a wildland fire is reported in the vicinity.

4.3 Fire Resistant Plant Palette

Wildland fire research has shown that some types of plants, including many natives, are more fire resistant than others. These low fuel volume, non-oily, non-resinous plants are commonly refered to as "fire resistant". This term comes with the proviso that each year these plants are pruned, all dead wood is removed, and all grasses or other plant material are removed from beneath the circumference of their canopies. Some native species are not considered "undesirable" from a wildfire risk management perspective provided they are properly maintained year round. Refer to APPENDIX 'A' for a list of prohibited plant species.

Plants used in fuel modification zones should exhibit the following qualities to be the most "fire resistant":

1. Thick, succulent or leathery leaves.
2. Maintain a high leaf moisture content
3. Tendency to produce limited litter or dead material.
4. Have a low sap or resin content.
5. Have the presence of high salt levels or similar compounds which may contribute to fire resistance.
6. The ability to withstand drought.
7. The ability to withstand severe pruning.
8. The ability to not be damaged by freezing temperatures.

5.0 FIRE DEPARTMENT RESPONSE TIMES

The proposed Project is within the VCFD response area. The closest station is VCFD Station #47 located at 2901 Erringer Rd, Simi valley, CA. Per Google Map driving directions, it is approximately 1.5 miles from the western most point in the proposed development and has an estimated response time of five (5) minutes. As the Project proposes extending Falcon Street to the west, the response distance and time will be reduced. The second closest station is VCFD Station #45, located at 790 Pacific Ave in Simi Valley, CA. This station is 1.9 miles away, and seven (7) minutes get away and driving time to the furthest point in the development as

measured by using driving directions in Google Earth. VCFD Station #47 would typically be the first engine to arrive at the proposed development (5-7 minutes depending on traffic and get away time). Additional agencies such as nearby cities would also respond equipment under mutual or automatic aid agreements but would likely arrive after the Station #47 or #45 engines were on-scene.

Although VCFD Fire Station #47 and #45 engines may be 5 - 7 minutes away, there is no assurance that either engine company will be in their station on the day a wildfire threatens the Project. Engines may respond from other stations located further away or from other incidents. On high/extreme fire danger days there often may be multiple fire starts and engine companies may be already deployed on other incidents. This is why ***FIREWISE2000, LLC*** uses *"defensible space"*, ignition resistant building features, and key fuel treatment strategies that enable residents to substantially increase their ability of their homes to survive a wildfire. The goal of this PFPP, therefore, is to make the Project and its occupants as safe as possible and be able to survive on their own until such time as firefighting equipment arrives and/or residents can be safely evacuated.

6.0 FUEL TREATMENT ZONE DESCRIPTIONS AND REQUIRED TREATMENTS

Below are the descriptions and required treatments for the Fuel Treatment Zones required for all the homes located within the Project. This is required as embers from a wildland fire can travel over a mile under worst case weather and fuel moisture scenarios. Embers landing on a suitable host can result in a new fire. All distances in this report are measured horizontally. These distances are depicted on the enclosed/attached Fuel Modification Map (See Section 11.0). Zones 0, 1A, 1B, 2, and 3 together provide 200 feet of treated area which should mitigate the radiant heat effects of a wildland fire. It should be noted that the Project owner has previously negociated an alternative means of protection for the lots located on a cul-de-sac located on a knoll on the north side of the Project. This additional mitigation included extending the fuel treatment throughout the Project from the standard 100 feet to 200 feet and providing a minimum of 100 feet of fuel treatment along the entire length of Falcon Drive.

The homeowners shall be responsible for maintaining Fuel Modification Zones on their lot. The HOA is responsible for maintaining Fuel Modification Zones outside the lot boundaries in common areas including along private roadways. In the event a home is repossessed, the unit/agency holding title to the lot will be responsible for the maintenance on the lot.

All landscape plans shall comply with the VCFD Ordinance 32 which adopted the California Fire Code with local amendments to Chapter 49. The landscape plans created for the Project shall reference this PFPP and comply with its requirements for vegetation management. The PFPP is required by the California Fire Code to include the following information:

1. *A map identifying all proposed plants in the fuel modification zones with a legend that includes a symbol for each proposed plant species. The plan shall include specific information on each species proposed, including but not limited to:*

a. The plant life-form.
b. The scientific and common name; and
c. The expected height and width for mature growth.

2. *Identification of irrigated and non-irrigated zones.*
3. *Requirements for vegetation reduction around emergency access and evacuation routes.*
4. *Identification of points of access for equipment and personnel to maintain vegetation in common areas.*
5. *Legally binding statements regarding community responsibility for maintenance of fuel modification zones.*
6. *Legally binding statements to be included in covenants, conditions, and restrictions regarding property owner responsibilities for vegetation maintenance.*

6.1 Zone 0 – Ember Resistant Zone – Lot Owner Maintained Within A Private Lot or by the HOA Adjacent to Townhomes (*Not shown on the Fuel Modification Plan Map*)

Defined

Zone 0, aka an ember resistant zone or non-combustible zone, is part of what is commonly called the defensible space zone and shall be an area free of all combustible materials including plants. It is primarily a non-vegetated zone five (5) feet in width that immediately surrounds each home, attached decks, patio covers, balconies, and floor projects above grade. The intent of this zone is to significantly reduce the probability of fire coming in contact with a structure, especially from accumulating wind blow embers and combustibles located around the base of a structure. Within this zone a few scattered potted plants, generally succulents, may be kept as long as they are not plants from the Prohibited Plant List (Appendix A), provided regular irrigation to maintain plant health, and meet the maintenace requirements described below. Landscaping in this area is sometimes called "lean" or a no planting zone.

Required Landscaping

- Potted plants shall not be taller than 24 inches including flowering heads.
- Potted plants located in this zone shall not be located under vents or windows or within five feet of either side of a window.
- Space between plants shall be a minimum of 2x the height from other plants.
- Plants shall be setback from structures and decks 1x the height of the plant or 12-inches, whichever is greater.
- No vegetation is allowed beneath decks.
- Window planter boxes are prohibited.
- Fences located in Zone 0 must be of non-combustible materials.
- All plants shall be on an automatic irrigation system.
- Drip irrigation tubing shall be buried except for the portion needing to extend to a container.
- Zone 0 shall be absent natural fiber, wood, and rubber mulch.
- No artificial turf.
- Vegetation on decks shall meet the requirements of Zone 0 regardless of the distance to the structure.
- No wood fences or gates.
- No combustible trellises nor vines shall be established within this Zone.

- Landscape roofs shall meet the requirements of Zone 0 and also comply with Section 317 of the Ventura County Fire Code.
- Zone 0 may contain rock, gravel, concrete, pavers, water features, non-combustible statuary, water features, or bare ground.

Required Maintenance

- Remove any combustible material monthly within Zone 0 including all dead and dying vegetative matter.
- Ensure that the automatic irrigation system is functioning properly.
- Ensure that no vehicles of any kind, exercise equipment nor yard maintenance equipment or batteries are stored within Zone 0.
- Firewood is prohibited in Zone 0.
- Roofs and Gutters of buildings shall be maintained free of any leaves, needles, or other combustible materials.
- Remove any item that in whole or in part has an ignition temperature less than 900 degrees F or 500 degrees C including holiday decorations.

Note: The Project is located in a State Responsibility Area and thus must meet the minimum state requirements for fire protection. The VCFD has local Zone 0 requirements currently in effect for new buildings and additions to existing buildings. As required by State Law, Assembly Bill 3074 (Chaptered September 2020), established new State regulations for Zone 0, which currently are under development by the State Board of Forestry and Fire Protection. Any State regulation more restrictive than the current VCFPD ordinance or the requirements of Standard 515-Defensible Space and Fuel Modification Standards, will apply. This may require the removal of plants, trees, related vegetation to meet the new State Law.

6.2 Fuel Treatment Zone 1A - Lot Owner *(Shown as No Color on the Fuel Modification Plan Map)*

Defined

Fuel Treatment Zone 1A is an irrigated zone, commonly called the defensible space zone, and shall be free of all combustible construction and materials including combustible mulches as described in the publication by Butler KM et al, 2022. It is measured from the outer edge of Zone 0 or 5 feet from a structure to each owner's lot line. It provides the best protection against the high radiant heat produced by a wildfire and a generally open area in which fire suppression forces can operate during wildfire events. This zone includes a level or level-graded area around the structure. Irrigation maintains plant health while increasing both live and dead fuel moisture which significantly reduces fire behavior. No plants from Appendix A are allowed in this zone. The intent of this zone is to significantly reduce the probability of a vegetation fire flames coming in contact with a structure.

Required Landscaping

- Plants in this zone need to be fire resistant and shall not include any pyrophytes that are high in oils and resins such as pines, eucalyptus, cedar, cypress or juniper species.
- Zone 1A will be cleared of all fire prone and undesirable plant species (see APPENDIX 'A').

- Landscape designs using hardscape features such as driveways, swimming pools, concrete, rock, pavers, and similar non-combustible features to break up fuel continuity within Zone 1A are encouraged.
- Landscaping plants shall be provided with an automatic irrigation system operated by either a basic or smart controller (timer).
- Drip irrigation is an excellent choice for landscapes that are on uneven terrain, are in windy areas, or consists of individual plants throughout as opposed to an expansive grass lawn.
- Plants shall be low-growing and approved by the VCFD. The mature height of shrubs located beneath trees shall not exceed 18 inches.
- Shrub groupings shall be per Figure 8.
- Trees shall be single specimens selected from an approved fire-resistant plant list.
- Trees are to be planted such that the mature canopies will be at least 10 feet from the exterior walls of the structure or from the most distal point of a combustible projection, an attached accessory structure, or an accessory structure located within 10 feet of a habitable building.
- Mature tree canopies shall be 20 feet or more apart in this zone pursuant to VCFD Standard 515.
- Trees must have a minimum of six feet of vertical separation from the ground. Additional clearance is required when there is approved plants under the tree canopy as a means of preventing a crown fire. See Figure 9 for additional information.
- When approved ground cover and shrubs are located underneath trees, the vertical clearance to the lowest branch of the tree canopy shall not be less than three times the height of ground cover or shrub under or adjacent to the tree. See Figure 9.
- Drought tolerant plants are encouraged.
- Fencing within Zone 1A shall not be installed back-to-back. Two parallel combustible fences shall be separated by at least 5 feet.
- No combustible mulches shall be allowed within this zone.
- As a way to reduce water use, artificial turf may be installed in place of water consuming grass as long as the turf material is installed on a sand or noncombustible material and has a Class A fire rating of between zero and 25 as measured by the ASTM E84 standard testing method for assessing the surface burning characteristics of building products. Artificial turf melts when exposed to extreme heat but does not burn and contribute to fire spread as it is self-extinguishing. The artificial turf shall also meet the Residential Requirements for Artificial Turf per Simi Valley Municipal Code Chapter 9.86.
- See Figure 8 – VCFD Fuel Modification Zone Spacing, for plant and tree height, width, and space requrements.
- A reference guide to commonly used native and ornamental plant materials suitable for homes located in a VHFHSZ can be found in the VCFD Plant Reference Guide found at https://vcfd.org/wp-content/uploads/2020/02/PlantReferenceGuide.pdf. Note, all plants will burn if not properly maintained through proper irrigation, pruning and removal of dead material.
- Per the VCFD Plant Reference Guide, vines and climbing plants are not allowed on combustible structures and are therefore not included in the plant reference guide

Table 3 – Fire Department FMZ Spacing

Type of Vegetation	Zone	Maximum Height	Maximum Area /diameter	% of Slope / Minimum horizontal Spacing*
Ground Cover	1 & 2	6-inches	Not Applicable	Not Applicable
Mosaic Grouping of Ground Cover (GC)	1	12-inches	Groupings shall not exceed 200 sq. ft. without minimum spacing to next grouping	<20%: 2 x GC height 20%-40%: 4 x GC height >40%: 6 x GC height
	2	18-inches	Groupings shall not exceed 500 sq. ft. without minimum spacing to next grouping	<20%: 2 x GC height 20%-40%: 4 x GC height >40%: 6 x GC height
Single Shrub	1	4-feet	4-foot diameter	<20%: 2 x shrub height 20%-40%: 4 x shrub height >40%: 6 x shrub height
	2	6-feet	4-foot diameter	<20%: 2 x shrub height 20%-40%: 4 x shrub height >40%: 6 x shrub height
Grouping of shrubs	1	Not Allowed	Not Applicable	<20%: 20-feet 20%-40%: 40-feet >40%: Not Allowed
	2	4-feet	Groupings shall not exceed 50 sq. ft. without minimum spacing to next grouping	<20%: 20-feet 20%-40%: 40-feet >40%: Not Allowed
Single Tree	1	Not Applicable	Tree canopy at full maturity not allowed within 10-feet of any structure	<20%: 20-feet 20%-40%: 30-feet >40%: 40-feet
	2	Not Applicable	Not Applicable	<20%: 10-feet 20%-40%: 20-feet >40%: 30-feet

* Table 3 Notes:

a. Spacing is measured canopy to canopy at maturity. See Chapter 5 examples.

b. Slopes greater than 20%, For grouping of ground cover and shrubs over 6-inches high, the maximum horizontal distance running with the slope shall not exceed 10-feet before spacing is required to the next grouping.

c. Use Zone 1 Spacing for plants and trees located between and or overlapping Zone 1 and 2.

d. Privacy screening using plants and trees must still comply with height, width and spacing requirements of Table 3.

Figure 8 – Table 3 – Ventura County Fire Department Fuel Modification Zone Spacing – *Guidance for landscape designs for fuel modification zones. Note the slope adjustments and that the Table 3 Notes above that are in reference to the VCFD publication and not this PFPP.*

Required Maintenance

- Lots shall be maintained year round by the individual property owners within their property boundary (lot lines).
- Remove and replace any dead or dying plant material monthly.
- Trees must have a minimum of six feet of vertical separation from the ground. Additional clearance is required when there is approved plants under the tree canopy as a means of preventing a crown fire. See Figure 9 for an illustration of minimum vertical clearance requirements.]

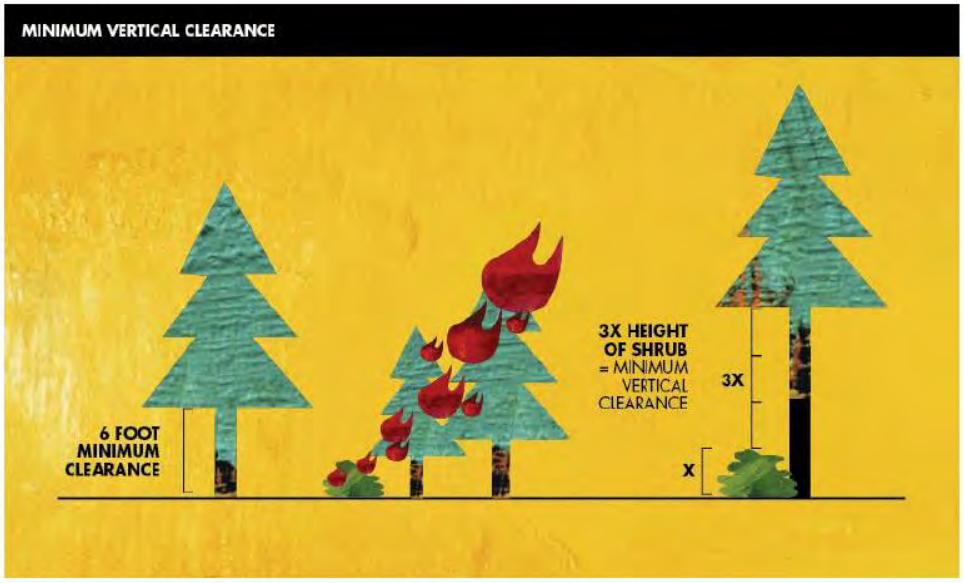

Figure 9 – Ventura County Fire Department Fuel Modification Verticle Separation Requirements *– Guidance for landscape design for fuel modification zones included in Standard 515 of the VDFD. Verticle separation significantly reduces the likelyhood of a crown fire. Note the slope adjustments in Figure 8.*

- Ensure that the automatic irrigation system is functioning properly.
- All tree canopies will be maintained to be 10 feet or more from each home.
- When approved ground cover and shrubs are located underneath trees, the vertical clearance to the lowest branch of the tree canopy shall not be less than three times the height of ground cover or shrub under or adjacent to the tree. See Figure 9 above that illustrates this requirement.
- Horizontal plant spacing requirements are shown in Figure 10. Note that the separation between both shrubs and trees increases with slope steepness.
- All plants must be maintained to the current ANSI A300 standards [*Tree, Shrub, and Other Woody Plant Maintenance —Standard Practices (Pruning)]* (see (*http://www.tcia.org/TCIA/TCIA/BUSINESS/A300_Standards/A300_Standards.aspx*).
- No firewood or other combustible materials shall be stored in this zone unless they are within a fully enclosed noncombustible structure.

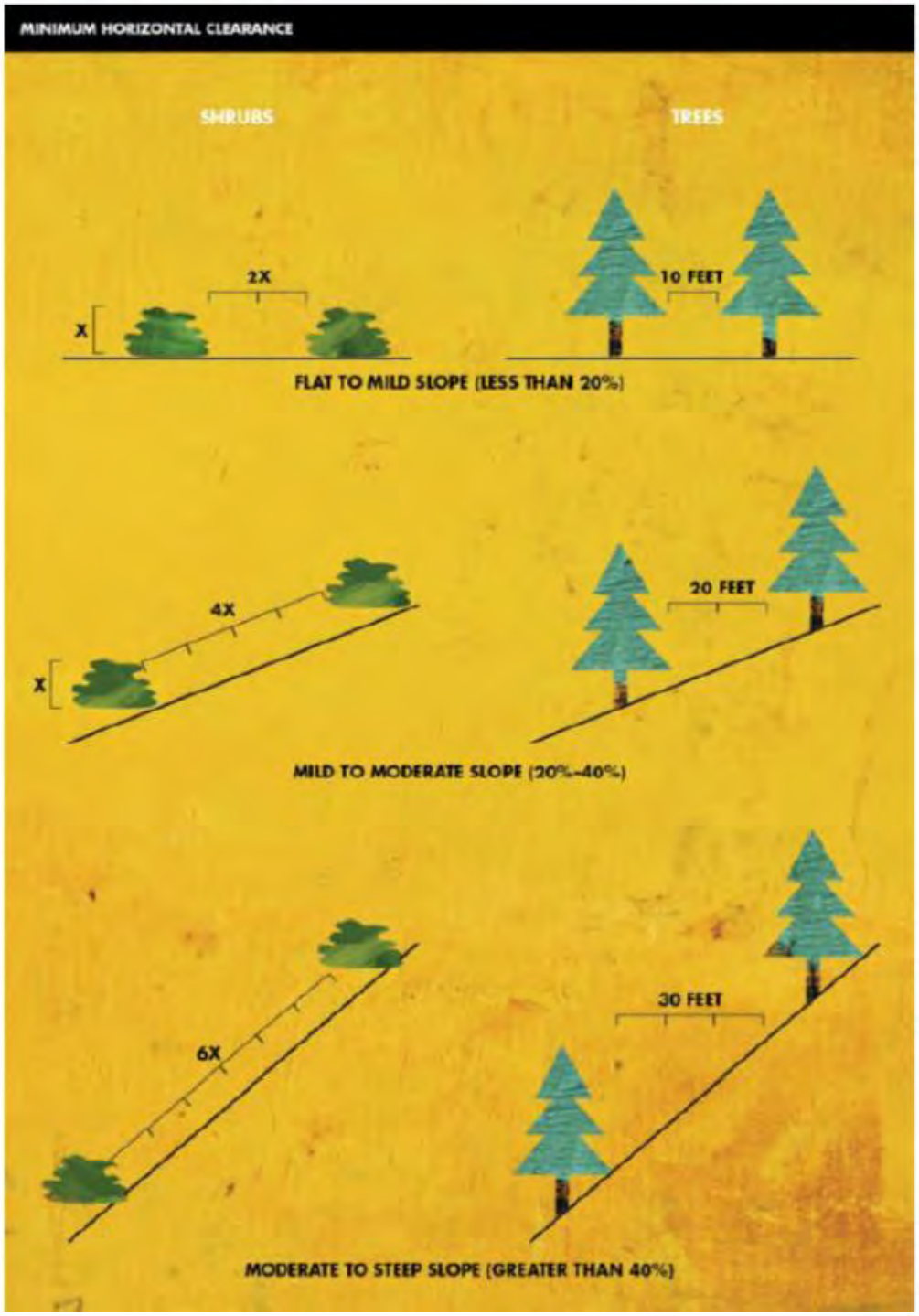

Figure 10 – Ventura County Fire Department Fuel Modification Horizontal Separation Requirements *– Guidance for landscape design for fuel modification zones included in Standard 515 of the VDFD. Note the slope adjustments in Figure 8.*

6.3 Fuel Treatment Zone 1B – HOA Maintained (*Shown as Green on the Fuel Modification Map)*

Defined

Zone 1B is an irrigated zone located within common areas that extends outward 30 feet from any structure on level ground or adjacent to slopes that are downhill to the structure and includes manufactured slopes and portions of debris basins. When the slopes are uphill toward a structure, the zone shall be located within 50 feet of a structure. The zone is found outside homeowner lots in the common areas that are maintained by the HOA. See Fuel Modification Plan Map – Section 11.0. When 30 feet of fuel treatment cannot be obtained, see Section 7.0.

Required Landscaping

Same as Zone 1A

Required Maintenance

Same as Zone 1A

6.4 Fuel Treatment Zone 2 – HOA Maintained (Shown in Brown on the Fuel Modification Zone Plan Map.

Defined

Fire Protection Zone 2, often called a thinning zone, is a non-irrigated area typically covered in wildland fuels but also includes portions of debris basins and is designed to reduce any wildfire radiant and potential for ember generation. The thinning shall result in a reduction of 50 percent of the vegetation when compared to untreated vegetation. Zone 2 begins at the outer edge of Zone 1A or 1B and extends to 100-feet from structures and decks.

Required Landscaping

- Removal of all dead, woody, and flammable debris, and exotic flammable vegetation found in APPENDIX 'A'.
- No combustible construction is allowed with Zone 2.
- No combustible mulch is allowed in this zone as it will add to ember production during a wildfire.
- Tree and shrubs shall be separated per Figures 9 and 10.

Required Maintenance

- As grasses and weeds begin to cure (dry out) each year, they shall be cut to three (3) inches or less in height.
- Annually remove all dead and dying vegetation, highly flammable exotic species, and flammable trash (see APPENDIX 'A').
- Thin the area 50% as compared to the nearby wildland vegetation to reduce the amount of fuel available for wildfire. The thinning shall result in additional spacing between shrubs and the creation of a mosaic of sizes, shapes and distances between shrubs and trees as specified in Figure 8 and viewed in Figure 10.
- Special consideration will be given to rare and endangered species, geologic hazards and tree ordinances, or other conflicting restrictions.

- Trees exceeding 6-feet in height shall be limbed up from the ground 6-feet or 1/3 the height of the tree, whichever is less.
- Individual shrubs shall be thinned to reduce their foliage mass or fuel loading including the removal of all dead and dying material.
- Efforts shall be made to retain root systems that provide for erosion control.
- Debris and trimmings produced by thinning and pruning shall be removed from the site.
- Any tree growing over a fire access road shall be maintained to have a vertical clearance between the roadway and tree canopy of a minimum of 13 feet 6 inches.
- Annually maintain all tree crowns to keep a separation consistant with Figures 8 and 9 between each tree and the ground fuels (shrubs and ground covers) and lower limbs.
- Tree and shrubs shall be separated per Figures 8 and 10.
- All trees must be maintained to the current ANSI A300 standards [*Tree, Shrub, and Other Woody Plant Maintenance — Standard Practices (Pruning)]* see *https://www.tcia.org/TCIA/Build_Your_Business/A300_Standards/A300_Standards.aspx*
- When performing maintenance such as mowing or using a chainsaw, be especially careful as a spark can start a fire. Consider the use of battery operated string trimmers as opposed to gasoline powered equipment. Modern battery technology includes a heat sensor inside the electric motor and when it gets hot it flips a switch automatically killing the motor until it has had a chance to cool down. This feature lessens the likelyhood of a fire.

6.5 Fuel Modification Zone 3 – HOA Maintained (Shown in Yellow on the Fuel Modification Zone Plan Map.

An interface thinning zone where the fuels are reduced by 30 percent including the removal of all dead and dying vegetation. It is progressively less thinned than Zone 2 and designed to further lessen the spread and intensity of a wildfire as it approaches. The zone begins at the outer edge of Zone 2 and stops 200 feet from each residence. It is also located on both sides of Falcon beginning adjacent to the Roadside Fuel Treatment discussed in Section 6.6.

Required Landscaping

- Removal of all dead, woody, and flammable debris, and exotic flammable vegetation found in APPENDIX 'A'.
- No combustible mulch is allowed in this zone as it will add to ember production during a wildfire.

Required Maintenance

- Annually remove all dead and dying vegetation, highly flammable exotic species, and flammable trash (see APPENDIX 'A').
- Thin the area 30% as compared to the nearby wildland vegetation to reduce the amount of fuel available for wildfire. The thinning shall result in additional spacing between shrubs and the creation of a mosaic of sizes, shapes and distances between shrubs and trees.

6.6 Roadside Fuel Treatment (HOA Maintained) Shown as *Blue* on the Fuel Modification Plan Map.

Defined

The area located 20 feet on either side of any fire access road located in a common area that is maintained to Irrigated Zone 1B criteria described above in Section 6.3 or it shall free of all vegetation. Irrigation shall maintain plant health and keep both live and dead fuel moisture levels high. This zone is designed to make ingress and egress safer for both residents and emergency responders. Addionally, along Falcon Drive, a designed evacuation route, a total of 100 feet of fuel modification will be required that will include the 20 feet of Irrigated 1B plus an additional 80 feet of Zone 2 fuel treatment.

Required Landscaping

Same as Zone 1B within 20 feet of the roadway followed by 80 feet of Zone 2 treatment.
Exception: It is advisable that the irrigation system located along the roadsides be separate from other zones to help ensure that irrigation is maintained when other landscaped areas may have irrigation suspended due to the lack of available water.

Required Maintenance

Same as Zone 1B
Exception: Irrigation shall not be removed.

6.7 No Build Zone - Townhomes *(Shown as Pink on the Fuel Modification Plan Map)*

Defined

A No Build Zone shall be located on the south side of the Project within the townhome portion of the development. This Zone shall be 20 feet in width beginning at the Project boundary and extending northward toward each structure. In the No Build Zone, no combustible construction can occur, including a townhome. The HOA shall perform and maintain the required Zone 1A fuel modification as described in Section 6.2 as well as not allow any combustible construction within this zone. This zone, when combined with the additional required construction features outlined Sections 7.2 and 7.3 will mitigate for the lack of 100 feet of fuel treatment.

Heavy timber construction is allowed. Heavy timber, as described herein, is a wood product that is solid wood, laminated heavy timber or structural composite lumber (SCL) that has a width and depth of 4 inches or more.

7.0 CONSTRUCTION STANDARDS

All structures within the Project shall meet all wildland/urban interface standards to the satisfaction of the VCFD and be designed and constructed per the California Building Code adopted at the time of building permit application. All lots due to their projected exposure to extreme fire behavior including embers, shall be built with all the construction and ignition resistant requirements found in the California Building Code Chapter 7A and the California Residential Code, Section R334, and all current codes in force at the time of permit application. For a summary of the current construction requirements for exerior wildfire exposure as of the date of this report, see APPENDIX ‘D’.

The fire protection features described herein shall be maintained to be equivilent or greater ignition resistance. Any damaged or replacement window, siding, roof covering, or non-combustible wall shall meet or exceed the original intent of the fire protection discussed in this plan.

All non-habitable accessory structures such as decks, balconies, patio, covers, gazebos and fences shall be built from non-combustible materials. All decking to be located in a VHFHSZ shall meet State Fire Marshal (SFM) Standard 12-7A-4, 12-7A-4A, and SFM Listing Category 8110. The owner is not restricted from having concrete patios, concrete walkways or a swimming pool within the Fuel Treatment Zones in compliance with other codes. Refer to APPENDIX 'C' for photos and descriptions of non-combustible decks, patio covers, and railings for these non-habitable accessory structures.

Prior to dropping of lumber, the applicant shall call for a Vegetation Clearance Inspection: the developer/builder shall provide a separation of combustible vegetation for a minimum distance of 100 feet from the location of the structure and lumber stockpile. An inspection sign-off and/or release letter to the building department is required.

7.1 Pre-Construction Requirements:

- Water and power utilities shall be installed by the developer and approved by the appropriate inspecting department or agency.
- Access for emergency response shall be provided and approved.
- Approved Zones 2A, 2B fuel treatments shall be provided prior to combustible material arriving on the site and shall be maintained throughout the duration of construction. Zones 0, 1A and 1B shall be cleared of all vegetation prior to the arrival of construction materials and maintained free of vegetation during construction. Following construction, the zones shall be planted to the requirements found in Sections 6.1, 6.2, and 6.3.

7.2 Construction Requirements: All lots within the Project shall meet all wildland/interface standards to the satisfaction of the VCFD and be designed and constructed with ignition resistant construction requirements. When less than 100 feet of distance separates wildland fuels from the structures the additional building/construction features found in Section 7.3 are required as mitigation for the lack of fuel modification:

All homes within the Project, regardless of location, shall have the following additional building features:

- All operable windows shall be provided with metal mesh bug screens or similar non-combustible screens over the operable opening to replace traditional vinyl bug screens. These screen are designed to prevent embers from entering the structure during high wind conditions when windows may be inadvertently left open.

7.3 Additional Requirements – Townhomes With a South Side Exposure to Wildland Fuels: shall have the following building features:

- A solid non-combustible radiant and convective heat deflection wall (shown as ■■■■ on the Fuel Modification Plan Map – Section 11.0), that is a minimum six (6) feet in height, shall be installed as shown on the Fuel Modification Map. This wall will not only deflect radiant and convective heat but collect embers and reduce fire behavior near the wall. Should a gate be placed in the wall, the gate shall be solid, the same height as the wall, and be constructed of non-combustible material such as metal. The openings around the sides and base of the gate shall not exceed ½ inch.
- Interior fire sprinkler shall be extended to the vented attic space including the areas over bathrooms and closets and into the garage.
- The interior fire sprinkler system shall be extended to the exterior under the eaves or high on the walls that face wildland fuels. Where possible, locate a sprinkler above each window to provide additional protection from embers entering the structure. They shall also be installed over covered patios, decks, and balconies and beneath decks and overhangs over 18 inches in width. The sprinklers shall comply with NFPA 13. The system shall be designed by a qualified professional and approved by the VCFD Fire Marshal. Sprinkler head temperature shall be 200 degrees.
- Install a Fire Alarm System throughout the townhome complex. This shall include the services of an Alarm System Company to install and monitor 24/7 both the smoke detectors in the residences, temperatures, and the water-flow switch to the automatic fire sprinklers. The system would be installed by a UL certified licensed alarm technician and would be compliant with NFPA 72 (Fire Alarm Inspections, Tests, and Maintenance). This centralized system would alert the fire department immediately of a possible fire and monitor the proper water pressure to ensure that the fire sprinklers operate effectively.

A solid wall located at the top of a slope or on flat land on or near the property line away from a structure will have a tremendous impact on radiant and convective heat, ember collection, reduction in wind speeds adjacent to the wall that reduces fire behavior. These wind speed impacts are demonstrated in Figure 11. Radiant and convective heat deflection walls located at the base of a hillside are generally ineffective.

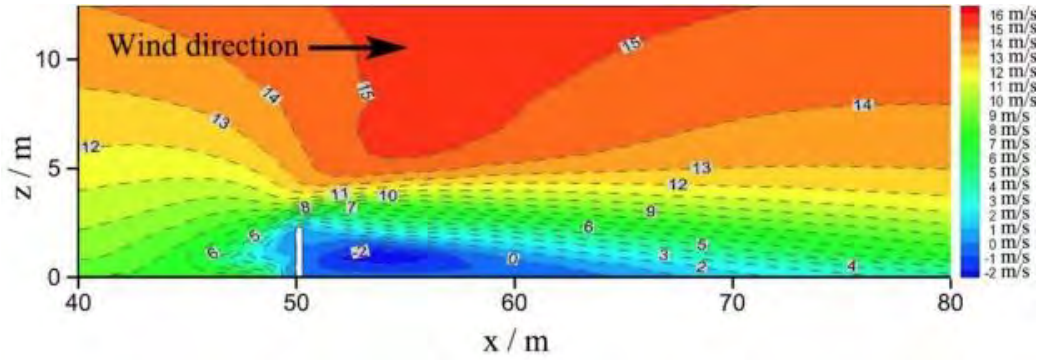

Figure 11 – Impacts on Wind Speed and Ember Deposition Resulting From a 2 meter (6+-foot Wall. *The above diagram is based on a wind speed of 14 m/s (31 MPH). Note that the wind, both on the windward and leeward sides of the wall, is reduced. These areas will thus trap embers and blowing debris (area shown in blue and light green). The wind speed on the windward side of the wall is significantly reduced for a distance equal to several times the height of the wall. This reduces fire behavior including flame length, a critical factor in fire protection planning. The above diagram was created for the purpose of demonstrating the impact of a wall on snow deposition and wind speeds but is also applicable to ember deposition and wind speeds. Ref: Dong et al., 2007.*

7.4 Accessory Dwelling Units

Should any lot owner desire to add an Accessory Dwelling Unit (ADU) that is in excess of 120 square feet, a permit is required. The City of Simi Valley Planning Division has ADU requirements whether the ADU is an attached or detached structure. Any ADU that provides complete, independent living facilities for one or more persons that includes permanent provision for living, sleeping, eating, cooking, and sanitation on the lot for which the primary unit is situated requires a permit.

In addition to the Planning Division permitting, VCFD Form 610, Fire Permit Application, shall be completed and submitted as part of the permitting process. Being that the Project is located in a VHFHSZ, all habitable ADU's shall be built to the current Chapter 7A standards of the California Building Code including the installation of fire sprinklers and shall be provided with the Fuel Modification requirements in force at the time of the permit application.

8.0 INFRASTRUCTURE

Infrastructure includes the basic systems needed to develop a property and support its use. For fire protection planning, these typically consist of the water supply for fire hydrants and fire sprinkler systems, accessways to and from the property, and electricity that operates garage doors and irrigation systems.

8.1 Water Supply

The Project water supply will be attached to a public system. Hydrants, mains and water pressures shall be designed to comply with Ventura County Code requirements. The Project water supply will be provided by the Ventura County Waterworks District No. 8 (District).

An approved permanent water supply capable of supplying the required fire flow for fire protection shall be provided by the developer prior to any combustible material being placed on the site or the commencement of construction (See Section 7.1). The water supply system shall be a looped system served from a minimum of two points.

If the District's current water distribution system serving the property is unable to provide for the required fire-flow, the applicant shall provide the necessary system improvements to satisfy those requirements as outlined in Section 3.0 – Design Criteria of Districts Water Design and Construction Standards.

VCFD requires the applicant to submit Fire Prevention Form 625 Fire-Flow Verification to the District for fire-flow test certification. The District must verify fire-flow prior to issuance of the Water Will-Serve Letter. The size of fire main pipes shall be a minimum of 6" in diameter. Hydraulic calculations, along with flow test information, shall be provided to determine the actual pipe size required to provide the minimum required fire flow with a maximum velocity not to exceed 20 feet per second.

Water supplies for fire protection and hydrants shall be in accordance with APPENDIX 'B' and APPENDIX 'C' of the California Fire Code. For the single-family homes, see Ventura County Standard 14.5.3 for fire hydrant requirements. The minimum fire flow for a single hydrant shall be 1,250 GPM at 20psi residual pressure for a 2-hour duration, since the buildings will be equipped with automatic fire sprinkler systems in accordance with NFPA Standard 13D.

Water supplies for fire protection within the townhomes shall also be in accordance with APPENDIX 'B' and APPENDIX 'C' of the California Fire Code and Ventura County Standard 14.5.3 for fire hydrants. Hydrants in serving the townhomes shall consist of one 4 inch and two 2-1/2-inch outlets.

Standard fire hydrants (6"x4"x2½") shall be required and located at each street intersection. The maximum distance from any structure's access point to a hydrant shall not exceed 250 feet (500 foot spacing), as measured along the required access. Each hydrant shall be located per the Districts Water Design and Construction Standards. In no case shall a hydrant be located within 3 feet of a driveway, street tree, lighting, signs, or other obstructions.

Each Hydrant shall have a reflective blue pavement marker installed in the adjoining street per Exhibit C of VCFD Standard 14.5.3.

8.2 Access Roads/Driveways and Gates

Main ingress and egress points for the Project will be from Falcon Street on the east and extend westerly to First Street. Driveways and access roads within the property shall be termed "Fire Access Roads" within this document. All fire access roads shall meet the requirements of the VCFD Standard 501, and shall be all weather surface capable of supporting local fire apparatus. Access to all portions of the buildings (front, side and rear) must be within 150 feet of the available fire deparment access. Clearance of brush or vegetative growth along new and existing on and off-site roadways will comply with the Ventura County Fire Code if not otherwise addressed in this plan. All roads, sidewalks and

similar public improvements will become the responsibility of the City/County to maintain once the Project is completed. Fire access roads shall be not less than 24 feet in width, exclusive of shoulders and have an unobstructed vertical clearance of not less than 13 feet 6 inches.

The Project is not scheduled to be a gated community. Should gates be installed, each gate shall be automatic, a minimum twenty-four feet in width. Gate access shall be equipped with a rapid entry system to include OPTICOM and Knox Electric switches. Plans shall be submitted to the Fire Department for approval prior to their installation. Automatic/manual gate pins shall be rated with shear pin force, not to exceed thirty pounds. Automatic gates shall be equipped with emergency backup power. Gates activated by the rapid entry system shall remain open until closed by the rapid entry system.

Gate entrances shall be at least two feet wider than the width of the traffic lanes) serving that gate. Any gate providing access from a road to a driveway shall be located at least 35 feet setback from the roadway and shall open to allow a vehicle to stop without obstructing traffic on the road.

8.3 Fuel Modification Zone Access Ways

Fuel modification zone access ways are used not only for fuel treatment zone maintenance but also for wildland fire suppression. When these accessways consist of a roadway, the roadway shall be a minimum of twelve feet in width and able to support firefighting apparatus. VCFD also allows for walking pathways between lots for fuel treatment access. These walkways shall be greater than 5 feet in width. There are trails within fuel modification zones along the eastern and western Project boundaries that will provide a means of access. Additionally, there are several debris basins for fuel modification zone maintenance access.

Along the east side of Tentative Tract 5658, there are fuel modification zones that serve to protect the homes located adjacent to lots 38-55. Typically, access ways are separated by not more than 350 feet. As the distance between these lots is approximately 1,000 feet, the HOA will need to budget additional funding for this area to manually remove the residues of vegetation maintenance.

8.4 Electricity Supply

The Project electricity is provided by SCE. To reduce the risk of a fire starting, SCE may elect to implement what is known as a Public Safety Power Shutoff (PSPS). This may occur when there are high winds or a forecast for them and very high and/or extreme wildland fire danger. Homeowners can sign up for a free PSPS alerts at https://www.scepsps.com/. SCE also provides forecast information concerning potential PSPS shutdowns for the next seven days based on the weather forecast and fuel conditions on their website at https://www.sce.com/wildfire/weather-awareness.

Electricity is required to operate garage doors and the landscape irrigation system. Should a PSPS notification be issued, it is highly recommended that the vehicle that would be used to evacuate be taken out of the garage and parked in the driveway, preferably facing the street, prior to the electricity being shut down. During an extended electric outage, the

irrigation system may have to be operated manually to maintain high moisture levels in landscape plants in Fuel Modification Zones 1A, 1B, and the Roadside Fuel Treatment Zone.

9.0 HOMEOWNER EDUCATION

A copy of this report shall be available in the North Canyon Ranch Sales Office for review by any potential homebuyer. The Sales Office shall provide a copy of the Final Fire Protection Plan (FFPP) to the first buyer during escrow. In all subsequent sales of the property, the new property owner(s) shall be provided with a copy of the FFPP by the HOA to insure continued compliance with all Fuel Modification maintenance and construction requirements. The HOA shall yearly provide the lot owners with information regarding the wildfire mitigation efforts necessary for community fire safety that are contained within the FFPP.

Each homeowner shall be aware of the herein described fire protection measures, the types of non-combustible construction, and the plant materials that are allowed within their lot's boundaries. Of particular importance are APPENDICES 'A' and 'C' of this plan which provides guidance in the types of plants that are allowed to be established in landscaped areas and appropriate construction within Fuel Treatment Zones. Plant selection is critical as embers often travel over a mile during Santa Ana wind events. In addition, firewood and similar combustible materials shall not be stored within 30-feet of any structure.

Homeowners should be aware that smoke is harmful to your health, especially if a person has asthma or chronic obstructive pulmonary disease, including bronchitis and emphysema. People with pre-existing health conditions related to the heart or circulatory systems may want to reclocate to a safe area before official notification to relocate to avoid smoke impacts. It is recommended that people leave the area affected by wildfire smoke if indoor air cannot be kept clean.

When performing maintenance such as mowing or using a chainsaw, be especially careful as a spark can start a wildfire. The use of battery-operated equipment is less likely to cause a problem. Modern battery technology includes a heat sensor inside the electric motor and when it gets hot it flips a switch killing the motor until it has had a chance to cool down. This feature lessens the likelihood of a fire. String weed eaters to cut the vegetation are preferred as a steel blade weed eater, if it should hit a rock or concrete, can cause a spark that could start a fire.

Ready, Set, Go is the evacuation strategy proposed for this Project. Should a wildfire exist that threatens the property or safety of people at the site, the following actions shall be implemented:

1. ***Ready – Preparing for the Fire Threat:*** *Take personal responsibility and prepare long before the threat of a wildfire so the home is ready in case of a fire. Maintain a defensible space by clearing brush away from all structures and range facilities. Use fire-resistant landscaping and harden structures with fire-safe construction measures. Assemble emergency supplies and belongings in a safe spot. Make sure all individuals within the area are 'on the same page' in commitment to advance preparation. Plan escape routes.*

2. Set – Situational Awareness When a Fire Starts: *Pack vehicle(s) with emergency items. Stay aware of the latest news from local media and the local fire department for updated information on the fire and perform the following:*

- ✓ *Close all windows and doors that lead outside to prevent sparks from entering the house.*
- ✓ *Close all doors within the house in case the house does catch on fire; this will slow down the spread of the fire from room to room.*
- ✓ *Move all combustible materials in the home away from windows to prevent the possibility of heat from a fire radiating through windows and glass doors and catching flammable materials inside the home on fire. This includes drapes, curtains, and furniture.*
- ✓ *Close windows and all Venetian blinds or noncombustible window coverings.*
- ✓ *Turn on the lights in each room, porch, and yard. This aids in visibility when the smoke gets thick and darkens the sky.*
- ✓ *Fill all sinks, bathtubs, and buckets with water in case the power goes out.*
- ✓ *Shut off any gas valves within the house or outside.*
- ✓ *Open the damper on fireplaces to stabilize inside/outside pressure, but close fireplace screens to keep sparks from igniting the house.*

3. Go – Leave early! *Following an Action Plan makes one prepared and firefighters are now able to best maneuver the wildfire and ensure everyone's safety. Follow instructions given by the Fire Department official on site.*

For assistance regarding evacuation, how to prepare and what to take, see Appendix 'F' – Evacuation Checklist.

10.0 Mandated Inclusions in the HOA and Lot Owner CC&R's

The HOA and lots owners shall perform and be responsible for the following statements:

1) The HOA shall be responsible for all required fuel treatment and fire protection measures mentioned in this Fire Protection Plan in perpetuity and shall have authority for enforcing required fuel treatment measures around all structures and restrictions on placing combustible structures within the fuel treatment zones.

2) Homeowners shall be responsible in perpetuity for all required fuel treatment and fire protection measures on their respective lots.

3) Each lot owner shall annually financially contribute their fair share of HOA required fuel treatment costs.

4) The Ventura County Fire Department will hold the HOA of Tentative Tract 5658 accountable for enforcement of all wildland fire protection issues discussed in the North Canyon Ranch Fire Protection Plan.

5) The HOA shall have the authority to enforce a ban on trash dumping or dumping or disposal of green waste in the fuel treatment zones located in open space areas.

6) All landscaping plans, including additional structures, must be approved by the HOA and the VCFD.

7) The HOA is responsible to the Ventura County Fire Department for the completion of all required Fuel Treatments in the common areas. Required on-going maintenance will be accomplished on an as needed basis. Should maintenance not be performed in a manner consistent with this Plan, the Ventura County Fire Department shall have the right to abate any treatment zone they deem a threat to Tentative Tract 3538. In doing so, all costs incurred will be billed to the owner(s). At the discretion of the Ventura County Fire Marshal, yearly inspection of treatment areas may be required.

8) The irrigation systems for all irrigated Fuel Modification Zones shall be kept in good condition and proper working order at all times. The irrigation system shall not be turned off except for necessary repairs, maintenance or during periods of extended rainfall.

9) Any disputes related to individual lot landscaping or fuel treatment, with respect to interpretation of the North Canyon Ranch Fuel Modification Plan Map or the written North Canyon Ranch Fire Protection Plan, shall be decided by the Ventura County Fire Department or its designated representative and whose decision shall be final and binding on the lot owner.

11.0 Fuel Modification Plan Map

Attached to this PFPP or included as a file is the Tentative Tract 5658 Fuel Modification Plan Map for the North Canyon Ranch Development depicting the location of all proposed fuel treatments, as well as fire access roads, lot lines, development boundaries, and adjacent developed lots or lots in a future phase as a reference for interlinking fuel treatments.

APPENDIX 'A'

Prohibited Plant List
From Ventura County Fire Department
Guideline 410

Note: Prior to designing and or installing landscaping see the VCFC.ORG website for the most recent document and requirements.

VENTURA COUNTY FIRE DEPARTMENT

Fire Prevention Bureau
165 Durley Avenue, Camarillo, CA 93010-8586
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GUIDELINE 410
PROHIBITED PLANT LIST

This list was first published by the VCFD in 2014. It has been updated as of April 2019. It is intended to provide a list of plants and trees that are not allowed within a new required defensible space (DS) or fuel modification zone (FMZ). It is highly recommended that these plants and trees be thinned and or removed from existing DS and FMZs. In certain instances, the Fire Department may require the thinning and or removal.

This list was prepared by Hunt Research Corporation and Dudek & Associates, and reviewed by Scott Franklin Consulting Co, VCFD has added some plants and has removed plants only listed due to freezing hazard. Please see notes after the list of plants.

For questions regarding this list, please contact the Fire Hazard reduction Program (FHRP) Unit at 085-389-9759 or FHRP@ventura.org

Prohibited plant list Botanical Name	Common Name	Comment*
Trees		
Abies species	Fir	F
Acacia species (numerous)	Acacia	F, I
Agonis juniperina	Juniper Myrtle	F
Araucaria species (A. heterophylla, A. araucana, A. bidwillii)	Araucaria (Norfolk Island Pine, Monkey Puzzle Tree, Bunya Bunya)	F
Callistemon species (C. citrinus, C. rosea, C. viminalis)	Bottlebrush (Lemon, Rose, Weeping)	F
Calocedrus decurrens	Incense Cedar	F
Casuarina cunninghamiana	River She-Oak	F
Cedrus species (C. atlantica, C. deodara)	Cedar (Atlas, Deodar)	F
Chamaecyparis species (numerous)	False Cypress	F
Cinnamomum camphora	Camphor	F
Cryptomeria japonica	Japanese Cryptomeria	F
Cupressocyparis leylandii	Leyland Cypress	F
Cupressus species (C. fobesii, C. glabra, C. sempervirens,)	Cypress (Tecate, Arizona, Italian, others)	F
Eucalyptus species (numerous)	Eucalyptus	F, I
Juniperus species (numerous)	Juniper	F
Larix species (L. decidua, L. occidentalis, L. kaempferi)	Larch (European, Japanese, Western)	F
Leptospermum species (L. laevigatum, L. petersonii)	Tea Tree (Australian, Tea)	F
Lithocarpus densiflorus	Tan Oak	F

Prohibited plant list:Botanical Name	Common Name	Comment*
Melaleuca species (M. linarifolia, M. nesophila, M. quinquenervia)	Melaleuca (Flaxleaf, Pink, Cajeput Tree)	F, I
Olea europea	Olive	I
Picea (numerous)	Spruce	F
Palm species (numerous)	Palm	F, I,
Pinus species (P. brutia, P. canariensis, P. b. eldarica, P. halepensis, P. pinea, P. radiata, numerous others)	Pine (Calabrian, Canary Island, Mondell, Aleppo, Italian Stone, Monterey)	F
Platycladus orientalis	Oriental arborvitae	F
Podocarpus species (P. gracilior, P. macrophyllus, P. latifolius)	Fern Pine (Fern, Yew, Podocarpus)	F
Pseudotsuga menziesii	Douglas Fir	F
Schinus species (S. molle, S. terebenthifolius)	Pepper (California and Brazilian)	F, I
Tamarix species (T. africana, T. aphylla, T. chinensis, T. parviflora)	Tamarix (Tamarisk, Athel Tree, Salt Cedar, Tamarisk)	F, I
Taxodium species (T. ascendens, T. distichum, T. mucronatum)	Cypress (Pond, Bald, Monarch, Montezuma)	F
Taxus species (T. baccata, T. brevifolia, T. cuspidata)	Yew (English, Western, Japanese)	F
Thuja species (T. occidentalis, T. plicata)	Arborvitae/Red Cedar	F
Tsuga species (T. heterophylla, T. mertensiana)	Hemlock (Western, Mountain)	F
Groundcovers, Shrubs & Vines		
Acacia species	Acacia (except dwarf/prostrate variety)	F
Adenostoma fasciculatum	Chamise	F
Adenostoma sparsifolium	Red Shanks	F
Agropyron repens	Quackgrass	F, I
Anthemis cotula	Mayweed	F, I
Arbutus menziesii	Madrone	F
Arctostaphylos species	Manzanita. Also note that Eastwood Manzanita grows to 8'	F
Arundo donax	Giant Reed	F, I
Artemisia species (A. abrotanium, A. absinthium, A. californica, A. caucasica, A. dracunculus, A. tridentata, A. pynocephala)	Sagebrush (Southernwood, Wormwood, California, Silver, True tarragon, Big, Sandhill)	F
*Atriplex species (numerous)***	Saltbush	F, I**
Avena fatua	Wild Oat	F
Baccharis pilularis	Coyote Bush	F
Bambusa species	Bamboo	F, I
Bougainvillea species	Bougainvillea	F, I, FR
Brassica species (B. campestris, B. nigra, B. rapa)	Mustard (Field, Black, Yellow) Wild Turnip	F, I

Prohibited plant list:Botanical Name	Common Name	Comment*
Bromus rubens	Foxtail, Red brome	F, I
Bromus carinatus	California brome	Grows to 5', Dies if cut
Castanopsis chrysophylla	Giant Chinquapin	F
Cardaria draba	Hoary Cress	I
Carpobrotus species	Ice Plant, Hottentot Fig	I
*Ceonothus griseus " Louis Edmunds***	Louis Edmunds Ceanothus	Grow higher than 18"*
*Ceonothus griseus var. horizontalis***	Carmel Creeper Ceonothus	Grows higher than 18"**
*Ceonothus griseus var. horizontalis "yankee point"**	Yankee Point Ceonothus	Grows higher than 18"**
*Ceonothus megacarpus***	Big pod ceonothus	Grows higher than 18"**
Cirsium vulgare	Wild Artichoke	F,I
Codariocalyx motorius	Telegraph Plant	F
Conyza bonariensis	Horseweed	F
Coprosma pumila	Prostrate Coprosma	F
Cortaderia selloana	Pampas Grass	F, I
Cytisus scoparius	Scotch Broom	F, I
Delosperma "alba"	White trailing Ice Plant	F
Dodonaea viscosa	Hopseed Bush	F
Drosanthemum Floribundum	Rosea Ice plant	F
Eriodictyon californicum	Yerba Santa	F
Eriogonum species (E. fasciculatum)	Buckwheat (California)	F
Fremontodendron species	Flannel Bush	F
Hedera species (H. canariensis, H. helix)	Ivy (Algerian, English)	I
Helix Canariensis	English Ivy	F
Heterotheca grandiflora	Telegraph Plant	F
Hordeum leporinum	Wild barley	F, I
Jasminum humile	Italian Jasmine	F
Juniperus species	Juniper	F
Lactuca serriola	Prickly Lettuce	I
Lamprathus aurantiacus	Bush Ice Plant	F
Lamprathus spectabilis	Trailing Ice Plant	F
Larix species (numerous)	Larch	F
Larrea tridentata	Creosote bush	F
Lepidium virginicum	Peppergrass	F
Leymus condensatus	Giant Wild Rye	Grows to 9' tall
Lolium multiflorum	Ryegrass	F, I
Lonicera japonica	Japanese Honeysuckle	F
Mahonia species	Mahonia	F
Miscanthus species	Eulalie Grass	F
Muhlenbergia species	Deer Grass	F

Prohibited plant list:Botanical Name	Common Name	Comment*
Nassella (stipa)leprida	Foothill needlegrass	Gets to 18" high. Cant cut to 4".
Nassella (stipa) pulchra	Purple needlegrass	Same comment as above
Nerium Oleander	Oleander	Toxic
Nicotiana species (N. bigelovii, N. glauca)	Tobacco (Indian, Tree)	F, I
Pennisetum setaceum	Fountain Grass	F, I
Perovskia atroplicifolia	Russian Sage	F
Phoradendron species	Mistletoe	F
Pickeringia montana	Chaparral Pea	F
Plumbago auriculate	Cape Plumbago	F
*Rhus (R. diversiloba, R. laurina, R. lentii)***	Sumac (Poison oak, Laurel, Pink Flowering)	F**. Poison oak presents a health hazard
Ricinus communis	Castor Bean	F, I
Rhus Lentii	Pink Flowering Sumac	F
Rosmarinus species	Rosemary (except dwarf/prostrate variety)	F
Salvia species (numerous)	Sage	F, I
Salsola australis	Russian Thistle	F, I
Senecio serpens	No common name	FR
Solanum Xantii	Purple Nightshade (toxic)	I, Toxic
Solanum Douglasii	Douglas Nightshade	Toxic
Silybum marianum	Milk Thistle	F, I
Tecoma capensis	Cape Honeysuckle	F
Thuja species	Arborvitae	F
Urtica urens	Burning Nettle	F
Vinca major	Periwinkle	I

*F = flammable, I = Invasive,

NOTES:

1. Plants on this list that are considered invasive are a partial list of commonly found plants. There are many other plants considered invasive that shall not be planted in a fuel modification zone and they can be found on The California Invasive Plant Council's Website www.cal-ipc.org/ip/inventory/index.php. Other plants not considered invasive at this time may be determined to be invasive after further study.

2. The absence of a particular plant, shrub, groundcover, or tree, from this list does not necessarily mean it is fire resistive.

3. Native, drought tolerant, plants are encouraged unless they are on this Prohibited Plant list or otherwise known as flammable or Invasive.

4. **: certain species of Ceonothus, Saltbush and Sumac need to be maintained free of dead materials, which builds up in the plant. Remove any poison oak (Sumac).

APPENDIX 'B'

Literature References

1. ASTM E84. American Society for Testing and Materials. Standard Test Method for Surface Burning Characteristics of Building Materials. June 23, 2022.

2. *BehavePlus: Fire Modeling System, version 5.0: Variables*. General Technical Report RMRS-GTR-213WWW Revised. September 2009. Patricia L. Andrews, United States Department of Agriculture - Forest Service, Rocky Mountain Research Station, Missoula, Montana.

3. *Behave Plus Fire Modeling System, Version 5.0.4,* 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.

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5. California Code of Regulations Title 14 section 1280 and Title 24 Part 9

6. California Public Resources Code Sections 4201 through 4204

7. California Government Code, sections 51175 through 51189

8. 2022 California Fire Code portion of the CBSC, including appendices to Chapters 1 & 4 and Appendices B, F & H

9. City of Simi Valley . Ordinance 2022-355. Application and Adoption of the California Fire Code. 10-5-2022.

10. Countryman, C. (1972) The Fire Environment Concept. National Wildfire Coordinating Group. http://caminosfire.com/wordpress/wp-content/uploads/2010/10/ pms433_fire_environment_countryman.pdf. 12 pp.

11. Dong et al., 2007, Z. Dong, W. Luo, G. Qian, H. Wang. A wind tunnel simulation of the mean velocity fields behind upright porous fences. Agric. For. Meteorology., 146 (1-2) (2007), pp. 82-93.

12. Factors Associated with Structure Loss in the 2013–2018 California Wildfires. .Alexandra D Syphard and Jon E. Keeley. https://www.mdpi.com/2571-6255/2/3/49. 2019.

13. National Fire Protection Association - NFPA 13 Standard for the Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes, 13-R &13-D, 2022 Editions

14. National Fire Protection Association - NFPA 1140 *Standard for Wildland Fire Protection,* 2022 edition. 117 pp., 2022.

15. *Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model,* General Technical Report RMRS-GTR-153. June 2005. Joe H. Scott, Robert E. Burgan,

United States Department of Agriculture - Forest Service, Rocky Mountain Research Station, Missoula, Montana.

16. The 2022 California Building Code - Chapter 7A- *Materials and Construction Methods for Exterior Fire Exposure.*

17. The 2022 California Residential Code (CRC) R327.

18. The California State and Local Responsibility Area Fire Hazard Severity Zone Map – Fire and Resource Assessment Program of CAL FIRE. Revised as needed.

19. Tree Survey and Arborist Report Update – with Fuel Modification Zones. ELMT Consulting. August 25, 2023. 28 pg.

20. Ventura County Fire Department Standards and Guidelines.

21. Ventura County Ordinances 29 and 32.

22. Water Design and Construction Standards. Ventura County Waterworks District No. 8. July 26, 2021. 193 ppg.

23. 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: http://www.raws.dri.edu/index.html

24. Wildland Fire Embers and Flame: Home Mitigations that Matter. Faraz Hedayati, PhD, Stephen L. Quales, PhD, and Steven Hawks. Insurance Institute for Business & Home Safety. April 2023. 34 ppg.

APPENDIX ‘C’

Non-combustible & Fire Resistant Building Materials

APPENDIX 'C'

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 noncombustible and fire resistant building materials: https://osfm.fire.ca.gov/divisions/fire-engineeringhttps://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/building-materials-listing/bml-search-building-materials-listing**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 as follows (these are only examples and materials listed here must meet local fire and building codes:

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

Exterior Fire Retardant Treated (FRT) Wood

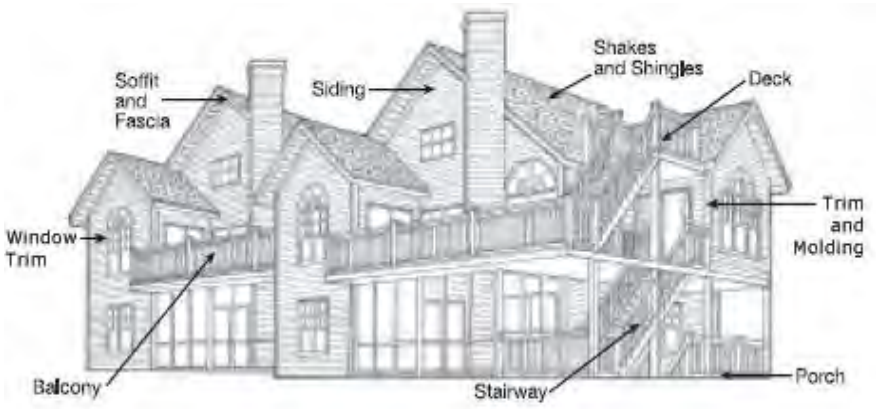
FRX® fire retardant treated wood may be used in exterior applications permitted by the codes where: public safety is critical, other materials would transfer heat or allow fires to spread, sprinkler systems cannot easily be installed, corrosive atmospheres necessitate excessive maintenance of other materials, or fire protection is inadequate or not readily available. Local 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

Typical Residential Uses

Property owners and Architects: See this 2-minute video and the illustration below.

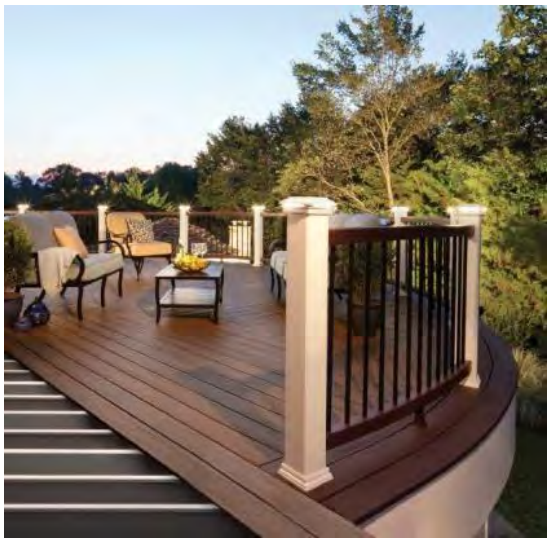


Rising concerns over fire damage and the adoption of urban-wildland interface codes have increased the use of FRT wood in residential structures.

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

III. 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 13/8" 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:



IV. SOLID "WOOD" DECKING

Company Name: Various Manufacturers

Product Description: All decking placed in a Very High Fire Hazard Severity Zone shall meet SFM Standard 12-7A-4 and 12-7A-4A, SFM Listing Category 8110.

These include but are not limited to products approved by the SFM and sold by the American Wood Council, Envision Building Products LLC, Fiber Composites, LLC, TimberTech Ltd., Redwood Empire, Kayu International Inc., Western Woods Inc., Sierra Pacific Industries, Utility Forest Products, General Woodcraft Inc., United Construction Products, Inc. dba Vison Innovative Products, Tata Enterprises, Inc., FHTL International DBA Harvest Floe Int'l, Moso North America, Inc., ICP Construction, and AVM Industries are but some of the examples from the State Fire Marshal website. The full list of products including their fire class rating as of August, 2023 can be bound at : https://osfm.fire.ca.gov/media/dslj4rbg/2023-sfm-wui-listed-products-handbook-8-7-23.pdf.

V. Vents

Examples of 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.

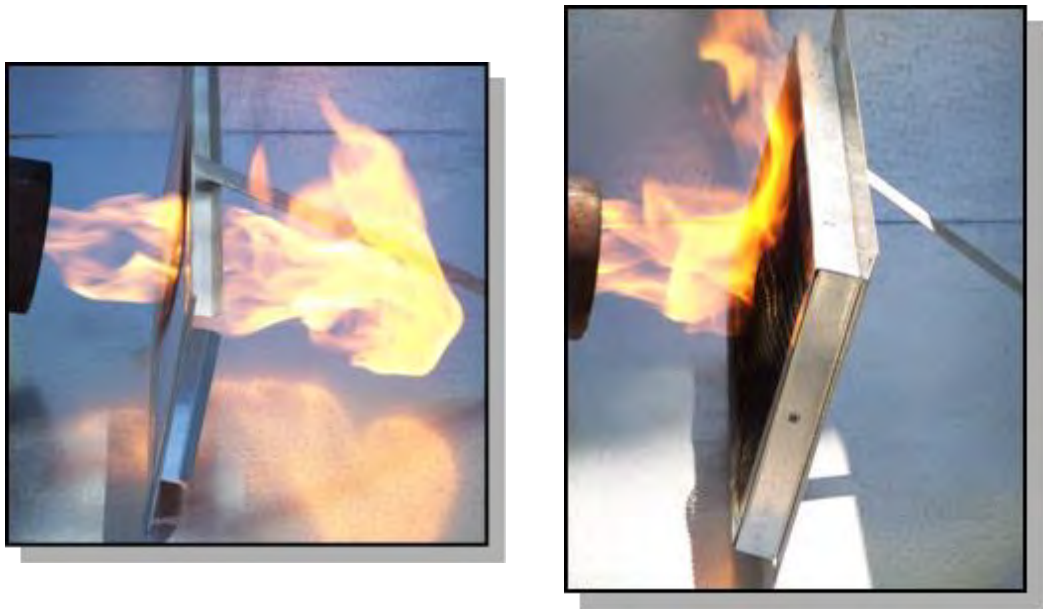
At Gunter manufacturing has over 50 years of combined sheet metal manufacturing experience. Special orders are not a problem. Their vent frames are industry standard frames so there is little or no learning curve for installers and contractors. Their stated goal is to provide people with the vents they 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 very 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 'D'

Ignition Resistant Construction 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) 2022 edition and the current California Residential Code, Section R337. 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 of the California Building 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 firestopped 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-game galvanized steel or 24-gage 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 2022 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:
  a. 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
  b. The exterior portion of a 1-hour fire resistive exterior wall assembly designed for exterior fire exposure includes 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. No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.

14. 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 the same fire-resistant standards as the exterior walls of the structure.

15. 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.

16. 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.

17. 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.

18. 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.

19. 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.

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

21 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.

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.

** FAHJ – Fire Authority Having Jurisdiction
SFM – State Fire Marshal
NFPA – National Fire Protection Association

APPENDIX ‘E’

Map of Biological Resources - Tentative Tract 5658

The tract map including vegetation cover shown below is for general layout and visualization purposes only.

APPENDIX 'F'

EVACUATION CHECKLIST

The following is a recommended list of items to take should a person or family expect that they could be evacuated due to a wildfire. It was adapted from several United States Forest Service, Bureau of Land Management and Cooperative Extension publications.

1. **Outside the Home:**
   - Move all flammable outdoor furniture or other combustibles away from the home, either place them inside the home, garage or throw it into a pool.
   - Turn off natural gas at the meter or propane gas at the tank, remove BBQ propane tank, take it with you or store it in a secure place such as the garage or away from your house.
   - Turn on outdoor lighting so in darkness, emergency responders will know where the home is located.
   - Close all exterior vents, doors, and windows.
   - Leave exterior doors and gates unlocked to allow emergency responder access.
   - Fill trash cans and buckets with water and place them where emergency responders can find them, preferably in a well-lit area.
   - Connect garden hoses to exterior faucets and attach nozzles if available.
   - If there is time, wet down landscaping to provide additional moisture, especially wet down flammable mulches.

2. **Inside the House:**
   - Close the Fireplace damper.
   - Close all windows and exterior vents, close all interior and exterior doors including the garage door, remove flammable curtains from windows.
   - Close fire-resistant drapes, shutters, and blinds.
   - Close and lock any cat or doggie doors that lead to the outside.
   - Move fabric covered furniture away from windows and toward the center of the room.
   - Leave a light on in each room.
   - Close all interior doors as you leave.

3. **Preparation of Family, Pets, and Livestock:**
   - Round up your pets: get them secure and ready to go into the car with no way of escape before they are loaded into the car (this is especially important with cats).

- Have pet carriers, leashes, food bowls, food, litter boxes, litter, and other pet needs ready to go & ready to be loaded into a car.
- Make a prior arrangement to contact a neighbor or friend who might be available to help you in an evacuation situation with loading or driving a second or third vehicle, or to help with large animals such as horses, penned animals, etc.
- Evacuate all family members that are not essential to preparing the house for wildfire if possible.
- Notify your emergency contact person of your plans.
- Draft an e-mail, send to friends and family about your intentions.
- Plan several evacuation routes from your home and follow local emergency personnel's directions.
- Designate a safe meeting place and contact person.
- Notify the local Humane Society or other organizations for assistance with larger animals if needed.
- Evacuate pets and livestock, do not set them loose.
- Load containers with drinking water and food.
- Take a first aid kit.

4. What to Wear:

- Wear only cotton or wool clothes, including long sleeve shirts, pants and or jacket, a hat and boots or close-toed shoes.
- Carry gloves, a cotton handkerchief to cover your face and goggles to protect your eyes.
- Keep your battery powered cell phone, flashlight, and portable radio with you at all times.

5. To Go Bag Items:

- Important files, back-up disks, plug-in USB virtual drive, small compact file box ready to go. Include such things as homeowner's policy, auto policies, life & investment files, bank records etc. (or store in a fireproof safe or fireproof vault).
- Include a backup battery powered flashlight, portable radio, and extra batteries.
- Cell phone charger
- Address books for both snail mail and email that include your doctor(s) contact information.
- Prescription medications.
- Computer backup files.

- Inventory of home contents (consider making a video inventory now, prior to an emergency).
- ATM, credit, and debit cards.
- Medications such as ibuprofen, aspirin, and antihistamines
- Prescription glasses
- Social security cards
- Passport's
- Driver's licenses
- Take important documents such as birth certificates, health insurance cards, marriage certificates, home deed and insurance policies and power of attorney and will.
- Take masks that will reduce exposure to both disease and the inhalation of flying ash.
- Take all household & car keys, wallet, and handbag
- A container of sanitary wipes.

6. Vehicle Preparation:

- Place your vehicle on the driveway facing the street.
- Ensure that the vehicle has at least 1/2 tank of fuel in your vehicle at all times.
- Roll up the car windows and close the moon roof.
- Close the garage door but leave it unlocked.
- If you do not drive, make other arrangements for transportation in advance.

7. Other Useful Items (If time is available):

- Take cameras & expensive jewelry and important electronic devices.
- If you have enough room, consider a few items from your camping or picnic supplies.
- Pillows & light blankets (in case you might have to sleep outside while evacuated).
- Take special or valuable items (make your own list).

APPENDIX ‘G’

Landscape Plan

A place holder for the landscape plan that will need to be included and consistent with the Final Fire Protection Plan.