MAPES ROAD – TTM 39316
PRELIMINARY FIRE PROTECTION PLAN

UNINCORPORATED RIVERSIDE COUNTY, CALIFORNIA



September 2, 2025, revised January 21, 2026, May 14, 2026

Developer: **EPD Solutions**
3333 Michelson Drive, Suite 500
Irvine, CA 92612

Prepared and Certified by:
Mel Johnson, Owner
***Fire*wise2000, LLC**
PO Box 339
Lower Lake, CA 95457
(760) 745-3947
info@firewise2000.com

Table of Contents

Section	Page
Executive Summary	**i**
1.0 General Description	**1**
1.1 General Information	**2**
1.2 Relevant Codes and Standards	**2**
1.3 Hazardous Vegetation and Fuels – Laws and Regulations	**2**
1.4 Fire Protection Plans – California	**2**
2.0 Wildland Fire Hazard and Risk Assessment	**3**
2.1 On and Off-Site Fire Hazard and Risk Assessment	**3**
2.2 Critical Wildfire Concerns	**6**
2.3 Fire History	**8**
2.4 Predicting Wildland Fire Behavior	**10**
2.5 Fire Behavior Calculations	**10**
3.0 Assessing Structure Ignitions in the Wildland/Urban Interface	**11**
3.1 Firebrands	**12**
3.2 Radiant Heat/Direct Flame Impingement	**12**
4.0 Fire Department Response Times	**14**
5.0 Landscape Plans	**15**
5.1 Plant Species Selection	**15**
5.2 California Landscape Plan Requirements	**16**
5.3 Fire Resistant Plant Palette	**17**
6.0 Fuel Modification Zone Descriptions, Treatments, and Landscape Plan Requirements	**17**
6.1 Ember Resistant Zone 0	**18**
6.2 Fuel Modification Zone 1A - Lot Owner Maintained	**19**
6.3 Fuel Modification Zone 1B – HOA Maintained	**21**
6.4 Fuel Modification Zone 1C – RCFCD Maintained	**21**
6.5 Fuel Treatment Zone 2 – CFD Maintained	**22**
6.6 Roadside Fuel Treatment	**22**
7.0 Construction Requirements	**23**
7.1 Pre-Construction Requirements	**23**
7.2 Additonal Construction Requirements	**24**
7.3 No Build Zone - Lots 129- 134, 136-144	**25**
7.4 Additional Required Building Features – Lots 134-144	**25**

8.0 Mandated Inclusion in the CC&R'S **26**

9.0 Infrastructure **27**
9.1 Water Supply and Hydrants **28**
9.2 Access Roads/Driveways and Gates **28**

10.0 Homeowner Education & Requirements **29**

11.0 Conclusions **30**

12.0 Fuel Modification Plan Map **32**

APPENDICES

Prohibited Plant List **APPENDIX 'A'**

Literature Referenced **APPENDIX 'B'**

Ignition Resistant Construction Requirements **APPENDIX 'C'**

Site Plan **APPENDIX 'D'**

Example of a View Wall **APPENDIX 'E'**

Evacuation Checklist – What to Take **APPENDIX 'F'**

Landscape Plan (When Completed) **APPENDIX 'G'**

Additional Owner Information **APPENDIX 'H'**

MAPES ROAD - TTM 39316
Preliminary Fire Protection Plan
County of Riverside, California
September 2, 2025, revised January 21, 2026, May 14, 2026

Executive Summary

This Preliminary Fire Protection Plan (PFPP) evaluated the proposed TTM 39316 residential development to ensure it does not unnecessarily expose people or structures to wildland fire risks and hazards. The PFPP has identified and prioritized the measures necessary to mitigate those impacts. The PFPP has considered the existing and future fire environment including property location, topography, geology, combustible vegetation (fuel types), climatic conditions and fire history. It has also considered the built environment including water supply, access, structure ignitability and ignition resistant building materials, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management.

The project was analyzed to identify potential adverse impacts and to provide adequate mitigation measures for impacts resulting from wildland fire hazards. The evaluation determined that the Riverside County Fire Department (RCFD) and the California Department of Forestry and Fire Protection (Cal Fire) along with nearby fire departments will be able to provide adequate emergency services. Cal Fire (under the State Responsibility Area Agreement) as well as other fire departments and fire protection districts, can be requested under Mutual Aid agreements to respond in the event of a wildfire event in the area. Response times and the proximity of the development to the Wildland Urban Interface (WUI), in a Moderate, High or Very High Fire Hazard Zone may require enhanced fire sprinklers be installed in all new residences.

In addition, this PFPP lists fuel treatment requirements to mitigate the exposure of people or structures from a significant risk of loss, injury, or death from wildland fire hazards. The landscaping within a lot beginning at the exterior wall of each structure shall consist of Zone 0, an ember resistant non-combustible zone, followed by Zone 1A, fire resistant and irrigated which is lot owner maintained. Zone 1B is a permanently irrigated zone that is maintained by the HOA and located within common areas.

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

MAPES ROAD - TTM 39316
PRELIMINARY FIRE PROTECTION PLAN
Unincorporated Riverside County, California

1.0 GENERAL DESCRIPTION

Tract No. 39316 (herein after referred to as the Project) is in the County of Riverside north of Mapes Road between Tradewinds Drive and Palomar Road. The Project is located in Very High, High and Moderate Fire Hazard Severity Zones in a Local Responsibility Area (LRA). The Project and surrounding area can be seen in Photo No. 1. The Riverside County Fire Department (RCFD) contracts Cal Fire for wildland fire protection and is the fire authority for the Project.



Photo 1 – Aerial photo of the Project area. *The arrow points to the approximate center of the Project. Wildland areas that are undisturbed exist to the north and a portion of the eastern exposure.*

The development of Tract 39316 calls for the construction of 157 single family homes, a park, and related infrastructure on approximately 40 acres (See Figure 1).

1.1 General Information

Developer/Applicant:	EPD Solutions 3333 Michelson Drive, Suite 500 Irvine, CA 92612
Approving Departments:	
Fire Authority:	Riverside County Fire Department
Water:	Eastern Municipal Water District

1.2 Relevant Building Codes and Standards

This Preliminary Fire Protection Plan (PFPP) is based upon the following current codes as of the date of this PFPP: California Fire Code (CFC), California Residential Code section R337; National Fire Protection Association Standards (NFPA) 13-D, California Wildland Urban Interface Code (WUI), Riverside County Health and Safety Code - Declaration of Nuisance 6.15.020, and supporting guidelines, the California State and Local Responsibility Area Fire Hazard Severity Zone Map; Riverside County Fire Department Guideline OFM Fire Department access for commercial & Residential Development; and NFPA Standard 1140.

1.3 Hazardous Vegetation and Fuels - Laws and Regulations

The following laws and regulations guide the requirements for fuel modification. These include the following: California Wildland Urban Interface Code (WUI); Public Resources Code, Section 4291. 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 Riverside County Ordinances; 460, 787, and 460.154 (as amended).

1.4 Fire Protection Plans - California

The California Wildland Urban Interface Code requires a Final Fire Protection Plan to be approved prior to construction. The FFPP shall include a Landscape and Planting Plan for all the common areas that is consistent with this fire protection plan as well as show all building locations, roads, and driveways. As the landscape plans are currently under development, the landscape architect, when developing their plan, shall incorporate the plant material, planting design, and maintenance requirements identified in this PFPP. When the landscape plan is completed, it will be attached as a separate file for submission by the developer.

This Preliminary Fire Protection Plan (PFPP), due to the absence of building locations and a landscape plan, includes:

- A wildland fire hazard rating assessment and calculations of the expected fire behavior in the event a wildland fire should occur within the offsite and onsite native and exotic vegetation.

- A short and long-term vegetative fuel modification treatment and maintenance plan around each structure to minimize any loss to residential structures within the planned development due to wildland fire.

- A short and long-term interior and perimeter open space fuel modification treatment plan including *"firewise landscaping"* criteria to be deployed in the community.

- Building construction and design criteria to be applied to all the lots.

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

Appendices attached to this PFPP that provide additional information shall be considered part of this plan.

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, weather (primarily wind and humidity), and the threat of fire to life and property that creates difficult and dangerous conditions. The primary focus of this document is mitigation of the wildland fire hazard and to a lesser extent, the reduction of risk of a fire starting within the tract.

2.1 On and Off-Site Fire Hazard and Risk Assessment

The Project is located in nearly level terrain. Within the Project, grading will remove the existing vegetation. Only the north and northeast perimeter of the Project will have wildland fuels adjacent to the project. When the required 100 feet of fuel treatment cannot be established on lots located on the perimeter of the Tract, additional building features are required. See Appendix 'D' for a site plan to aid in the visualization of the adjacent fire environment that follows.

The Project is located within an area classified by the state of California as a State Responsibility Area (SRA). The state has developed a wildland fire hazard rating map for all SRA lands. As shown in Figure 2, all the Project is located within an area classified as having a wildland fire hazard.

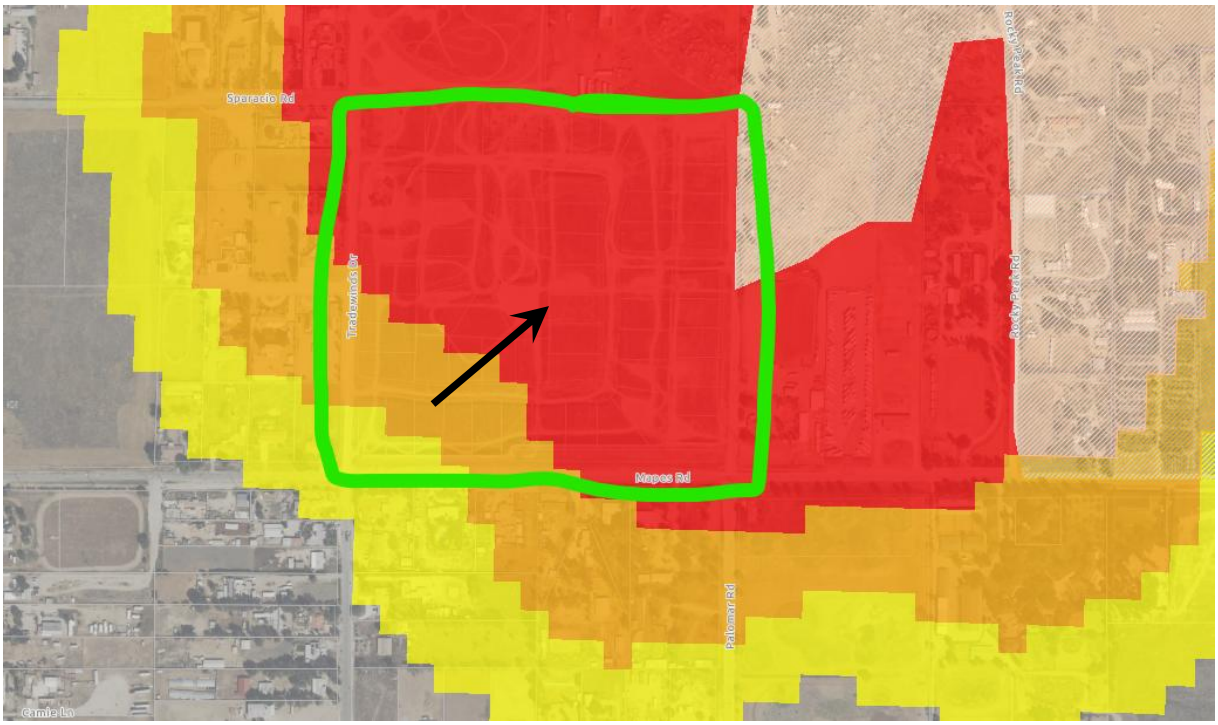


Figure 1 - CalFire Designated Fire Hazard Severity Zones*. The black arrow points to the center of the Project.*

In assessing the wildland fire hazard to the Project, it is necessary to consider plant succession and the climax plant communities. The vegetation described below for each cardinal direction are the most likely climax plant communities that will exist without human intervention and the ones utilized for fire behavior planning purposes.

Northern Exposure

The Northern exposure is partially adjacent to Mountain Avenue, an unimproved dead end dirt road. As seen in Photo 1, a portion of the area to the north of the Project is currently developed. To the northeast, there is an undeveloped hillside (see Photo 3) which will be a source for embers that will impact the entire Project should a wildfire occur during strong northeast winds.

The existing vegetation (fuels) along the north side of the Project are shown in Photo 2. The fuels are generally light. Future vegetation is likely to be similar to what is seen today.

The likely climax vegetation type used for fire behavior planning purposes can be best described as a combined fuel model of [gr4 – Moderate load, dry climate grass (80%) and gs2 – Moderate load, dry climate grass-shrub (20%)]. The taller grass would occur following high precipitation years. Slopes in this area range from 1 to 2 percent.



Photo 2- Looking North from the Project Northern Boundary

Eastern Exposure

The eastern exposure will be located adjacent to a combination of wildland fuels and developed property. The entire eastern exposure is located along Palomar Road, currently a dirt roadway. The southern half of the eastern exposure is developed as seen in Photos 1 & 4. Strong winds from the northeast and east will likely impact the eastern exposure when there are wildland fuels and a fire burning toward the Project from the east.



Photo 3 – Looking North Along Palomar Road Along the Eastern Project Boundary. An existing home is to the right of the picture and undeveloped property to the North and Northeast.

The most likely climax vegetation type can best be described as a combined fuel model comprised of [gr4 – Moderate load, dry climate grass (90%) and gs2 - Moderate load, dry climate grass-shrub (10%)]. The slopes along the eastern boundary are fairly level and generally range from 0 to 5 percent. Wind is the primary factor that will guide fire behavior during the typically dry summer and fall months.



Photo 4 – Looking Northeast from the Project along Palomar Road near the Intersection with Mapes Road. Note the Developed Property.

Southern Exposure

No wildland fuels exist south of the Project, as this area is developed.

Western Exposure

No wildland fuels exist west of the Project, as this area is developed.

2.2 Critical Wildfire Concerns

Weather

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 (60 MPH), hot, dry winds with very low (<15%) relative humidity. Santa Ana winds originate over the dry desert land and can occur anytime of the year; however, they generally occur in late fall (September through November). This is also when non-irrigated vegetation is at its lowest moisture content. Perimeter homes located on the northern and eastern boundaries (See Fuel Modification Plan Map, Section 12) are subject to these winds and fire behavior.

The typical prevailing summertime wind pattern is out of the south or southwest and normally is of a much lower velocity (5-19 MPH) with occasional gusts to 30-MPH) and is associated with higher relative humidity readings.

Weather data was obtained from the RAWS (Remote Automatic Weather Station) network. The closest station to the Project is the Santa Rosa Plateau RAWS. RAWS are installed for the purpose of hourly monitoring of wildland fire weather. The Santa Rosa Plateau RAWS is located at an elevation of 1,980 feet at Latitude 33° 31' 43" and Longitude 117° 13' 50". This station is approximately 500 feet higher in elevation and approximately 16.7 miles from the Project. An important note about the weather station, it is located on the northerly facing portion of the Santa Ana Mountains where "Lake Elsinore Wind Effect" winds occur. As the Project is located over 11 miles northeast of the RAWS, this wind effect is not likely to influence fire behavior at the Project. Also, these winds typically blow to the north and as there are no wildland fuels south of the Project. Embers falling within the Project will be the primary concern.

Climate

The climate within the Project area is characterized as Mediterranean. The area has generally mild and wet (7 to 10 inches per year) winters, the bulk of the annual precipitation falling between January and March. Precipitation in the County can vary yearly with a low of 2.94 inches and a high of 21.26. inches. Hot, and very dry summer seasons frequently occur with occasional multi-year droughts.

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

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 dry 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 future "worst case" weather.

When multiple fire behavior factors occur at the same time, this is sometimes referred to as being in alignment. Alignment creates optimal conditions for extreme fire behavior. This happens when humidity is low, both live and dead fuels moistures are low, winds are high and the slopes upon which a fire is burning are uphill. The time since the area previously burned is also an alignment concern as there is typically more fuel in vegetation that has not burned in a long time. Burning light fuels are typically easier to suppress than heavier fuels. These factors can be further be enhanced by the movement of a wildland fire into a heavier vegetation types and steeper topography.

Describing Fire Behavior

Flame length, a term utilized throughout this report, is easily visualized in Figure 4. With no wind, flames generally go straight up. Wind, topography, and fuels will effect fire behavior as

the flames generally will bend with the wind and be modifided by topography. Fire behavior is also enhanced when it consumes heavier fuels. When flames bend over due to either wind or topography, they easily preheat the adjacent fuels thereby enhancing fire behavior in terms of both flame length and the fires rate of spread. Wildland fire, when burning under extreme conditions, can create its own weather. Complicating fire behavior is the production of embers which can start additional fires well in advance of a flaming fire front.

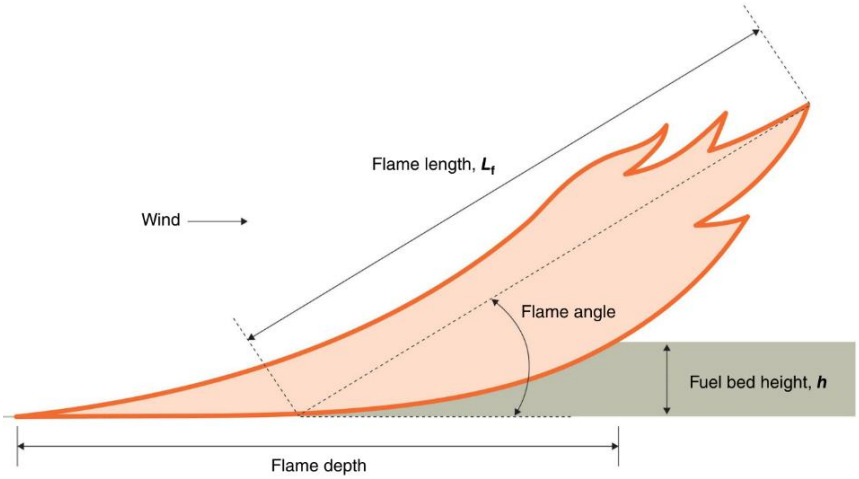


Figure 2 – Flame Length. *Flame lengths described in this plan are measured in feet.*

The undeveloped areas adjacent to the Project can contribute to a damaging wildland fire event. Any wind or topography driven wildfire burning under a northeastern (*Santa Ana*) wind to the north and east of the development or a wildfire burning under a typical southwest or west wind south of the development can create a wildland fire hazard to the proposed structures due to wind-blown embers. Wildland fires starting north or east of the proposed residences on a typical fire day with a southwest wind will burn away from the proposed structures and will generally not be a significant wildland fire hazard.

The installation of Chapter 7A construction features will mitigate against the wind-blown ember threat (see Section 7.0 for a discussion of these features). The goal of this PFPP is to prevent the loss of lives, buildings, and personal property when a wildfire occurs. This goal is accomplished by requiring homes to be built with ignition resistant materials under Chapter 7A and intelligently designed and maintained fuel treatments around each structure that safely mitigate the fire hazard to insignificant levels. When the required fuel treatments cannot be met, additional construction features shall be required.

2.3 Fire History

There is a history of large wildland fires in the area. A large wildland fire being defined is one that burns over 100 acres. There is no recorded history of a fire of over 100 acres having burned the Project site, however several fires have burned close to the Project. Fire history data was obtained from Cal Fire. There likely have been many smaller fires that have burned within or

near the Project in the past, however these are not recorded unless there was loss of property or life.

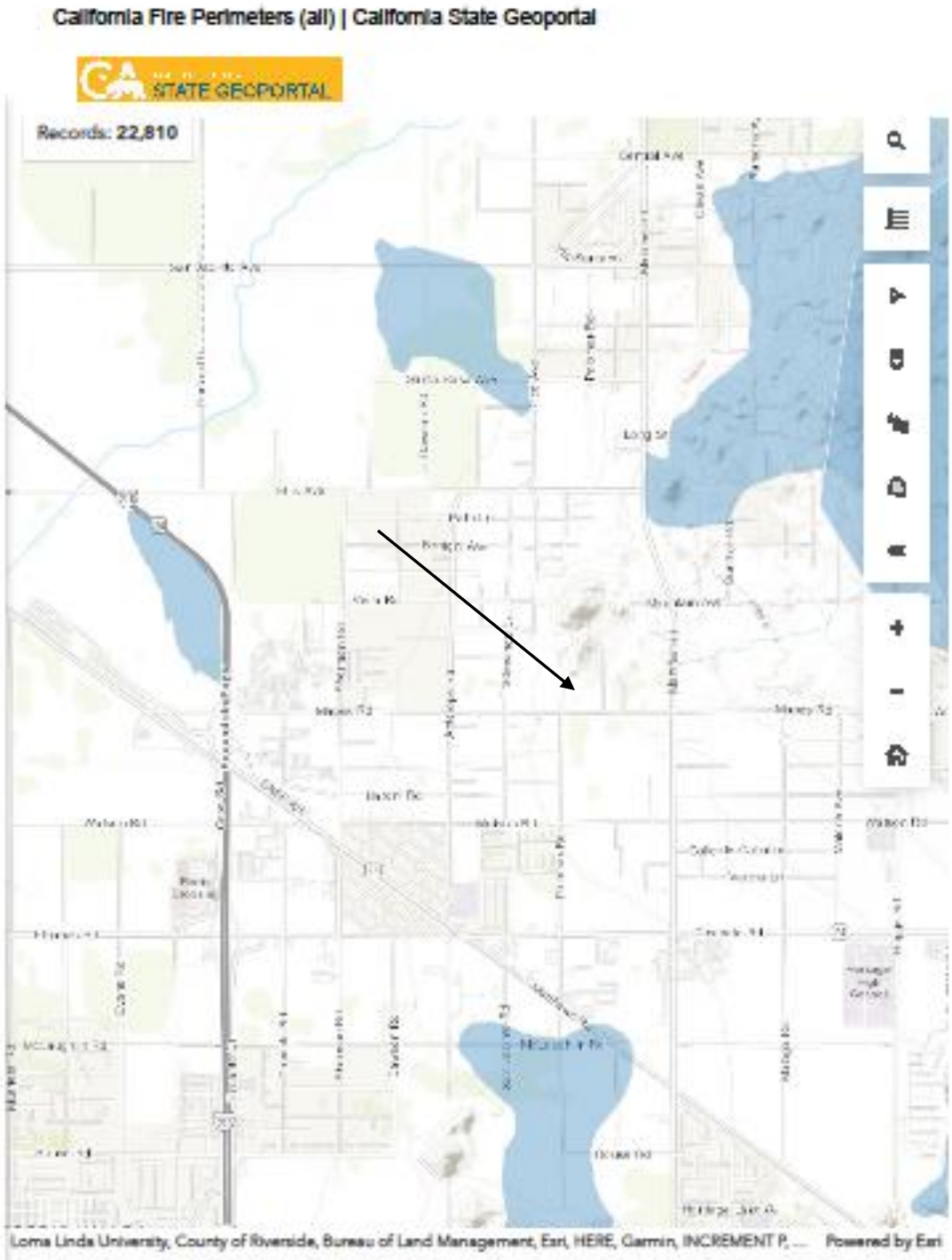


Figure 2 - Previous Wildfires in the Area in Blue. Arrow Points to Project.

2.4 Predicting Wildland Fire Behavior

The BehavePlus 6.0.0 Fire Behavior Prediction and Fuel Modeling System was developed by USDA–Forest Service research scientists Patricia L. Andrews and Collin D. Bevins at the Intermountain Forest Fire Laboratory, Missoula, Montana. It 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.

Wildland fire managers use the BehavePlus modeling system to forecast the expected fire intensity, rate-of-spread, and flame lengths with a reasonable degree of certainty for use in Fuel Modification Zone Planning purposes. ***Fire*wise2000, LLC** used BehavePlus 6.0.0 Fire Behavior Prediction Model to make the fire behavior assessments found in Section 2.5.

***Fire*wise2000, LLC** recognizes that certain extreme fire behavior, such as that produced by prolific crowning/spotting, presence of fire whirls, and strong convection columns, are not addressed in this PFPP. When heavy fuels and steep topography are present, generally in vegetation that is taller than 20 feet, fire behavior can become erratic and lead to a "blow up" or "fire storm." When high concentrations of firebrands fall on receptive fuels, several ignitions may occur simultaneously resulting in what has been termed "area ignition." Predictability is difficult because such fires often create their own fire environment and therefore behave erratically. These fuel types and conditions are <u>not</u> present within or adjacent to the Project. The BehavePlus Fire Computer Modeling Program fire behavior calculations are therefore a reliable means of determining appropriate wildfire mitigation measures.

2.5 Fire Behavior Calculations

Wildland fire behavior calculations have been projected for the hazardous vegetative fuels on the undeveloped areas that are located in proximity to proposed perimeter structures. These structures have the highest exposure to radiant and convective heat and therefore the most hazard (see the Fuel Modification Plan Map, Section 12.0). These projections are based on scenarios that are "worst case" Riverside County fire weather assumptions in the vicinity of the project area.

The undeveloped land in proximity to the Project can contribute to a damaging wildland fire event. Any wind driven wildfire burning under a northeast (*Santa Ana*) wind pattern through wildland areas to the north or east would create a wildland fire hazard to the proposed Project.

Fire Behavior Scenarios

The scenarios which follow include the projected fire behavior under "worst case" wildland fuel and weather conditions for the described areas.

Fire Scenario #1, Northern Exposure ***Fire Approaching from the North or Northeast*** ***(Late Fire Season With 60 MPH North or Northeast Wind Conditions)***	
Fire Behavior Calculation Input Data • 2 percent slope • 60 mph 20-foot wind speed • 225º slope aspect from north • 45º wind direction from north	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture ..... 2% * 10-Hour Fuel Moisture ..... 2% * 100-Hour Fuel Moisture ..... 3% * Live Herbaceous Fuel Moisture ..... 30% * Live Woody Fuel Moisture 45%
Expected Fire Behavior **Combined Fuel Model [gr4 – Moderate load, dry climate grass (80%) and gs2 – Moderate load, dry climate grass-shrub (20%)]**	
Rate of Spread - 1,493.8 ft/min	
Fireline Intensity - 15,062 BTU/ft/s	
Flame Length - 37.6 feet	

Fire Scenario #2, Eastern Exposure ***Fire Approaching from the Northeast or East*** ***(Late Fire Season With 60 MPH Northeast or East Wind Conditions)***	
Fire Behavior Calculation Input Data • 5 percent slope • 60 mph 20-foot wind speed • 225º slope aspect from north • 45º wind direction from north	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture ..... 2% * 10-Hour Fuel Moisture ..... 2% * 100-Hour Fuel Moisture ..... 3% * Live Herbaceous Fuel Moisture ..... 30% * Live Woody Fuel Moisture 45%
Expected Fire Behavior **Combined Fuel Model [gr4 – Moderate load, dry climate grass (80%) and gs2 – Moderate load, dry climate grass-shrub (10%)]**	
Rate of Spread - 1,493.3 ft/min	
Fireline Intensity - 15,057 BTU/ft/s	
Flame Length - 37.6 feet	

3.0 ASSESSING STRUCTURE IGNITIONS IN THE WILDLAND/URBAN INTERFACE

Structure ignitions from wildland wildfires basically 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 windblown embers or firebrands from a structure ignition perspective. However, ignition resistant exterior building materials will be used in the construction of the Project (see APPENDIX 'C' for the description of Ignition Resistant Construction). Wind driven embers, flame impingement, and radiant heat issues are addressed in this PFPP.

3.1 Firebrands

Firebrands or embers, as they are often referred to, are pieces of burning materials that detach from burning fuels due to the strong convection drafts in the flaming zone. 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. For the fuel types listed in Scenario #1 (See Section 2.5), embers can travel over 2 miles during worst case winds and fire weather. The chance of these firebrands igniting a structure will depend on the number and size of the firebrands, how long they burn after contact, and the type of building materials, building design, and construction features of the structure. Firebrands landing on combustible roofing and decks and adjacent flammable vegetation are common sources for structure ignition. They can also enter a structure through unscreened vents into attic spaces, windows, chimneys, and other unprotected openings such as skylights. Firebrands are also created when a structure burns.

Even with noncombustible roofing, firebrands landing on leaves, needles, and other combustibles located on a roof (due to lack of maintenance) or adjacent to a structure 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 landscape guidelines are followed and the above-mentioned maintenance issues are addressed on a regular basis as outlined in the CCR's (see Section 8), firebrands should not be a concern for the Project residences, as the buildings will be constructed with ignition resistant building materials and the landscaping around each structure will be designed, installed, and maintained for fire safety.

3.2 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 of the 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 Doctor Jack Cohen of the USDA-Forest Service (retired) 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's 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, 1st International Fire and Materials Conference showed that flame impingement for sufficient length of time (approximately 1 min.) ignites a typical hardboard siding material. The ignition temperature of wood is generally between 450°-500°F.

Fire agencies consider fuel treatment as a principal approach to wildland fire hazard reduction. Whenever the flame length is equal to or more than the separation of combustible vegetation from a combustible structure for 1-2 minutes in duration or more, there is a high probability of structure ignition. The combination of strong winds and flames causes flames to bend with the wind as seen in Photo 7. Buildings are typically not designed to withstand direct flame impingement. Contact with a fire's convection heat column may also cause ignition but the temperature of the column's gases generally is not hot enough or long enough in duration to sustain the ignition of the structure.



***Photo 5 - High winds will bend flames over**. If a building is in close proximity, there could be direct contact with the flames which could easily ignite the adjoining structure. Flame/structure contact is also likely to break windows thereby allowing both embers, radiant, and convective heat to enter the structure.*

By utilizing the expected wildland fire behavior projections in each of the scenarios in Section 2.5 and requiring the structures exposed to the threat of 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 as required by Chapter 7A of the California Building Code.
- The area surrounding each structure contains an Irrigated Zone (defensible space).
- Requiring additional construction requirements outlined in Section 7.2

Each eventual homeowner shall be required to maintain their property to fuel treatment standards Zones 0 and 1A criteria. Residents shall keep the roof, and any rain gutters free of leaves, needles, and other combustible debris including the area beneath solar panels. All

firewood and other combustible materials must be safely stored away from structures so that burning embers falling on or near structures have no suitable host. The Project lot owners are responsible for maintaining their homes and for keeping all doors and windows tightly closed whenever a wildland fire is reported in the vicinity.

4.0 FIRE DEPARTMENT RESPONSE TIMES

NFPA 1710, 2020 Edition (Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments) is used by jurisdictions, as a benchmark for determining adequate staffing, resource allocation, and operational efficiency. While it is not a federal law, its scientifically backed guidelines are often referenced in legal proceedings and adopted by cities to enhance public and firefighter safety.

- Staffing Levels and Response Times may be set by the Local Jurisdictions and may differ from the standard.
- **Response is based on Occupancy Type:** Single-Family Dwelling **Deployment:** Minimum of 16 members or 17 if aerial device is used
- The initial full alarm assignment to a structure fire in a typical 2000 ft2 (186 m2), two-story, single-family dwelling without a basement and with no exposures must provide for a minimum of 16 members (17 if an aerial device is used).
- Low hazard = 15 Firefighters, Medium hazard = 28 Firefighters, High hazard = 43 Firefighters
- The First Engine Arrives on Scene within 240 sec (4 min), with initial Full Alarm (Low and Medium Hazard) Time 480 sec (8 min)
- Company Staffing (Crew Size) Engine = minimum 4, Truck = minimum 4

The closest fire engine will be from the Homeland Fire Station#54 located at 25730 Sultanas Road, Homeland, CA. This station is located 3.2 miles away and its engine has an estimated response time (travel and getaway) of 6-8 minutes. The next closest station is Riverside County Fire Station No. 1 located at 210 W San Jacinto Ave, Perris , CA. This station is 6.7 miles from the farthest home within the development with an estimated response time (travel and get away) of 12-14 minutes depending on traffic. The response time for the first Fire Station engine is not within NFPA Standard 1710 for the area which is considered a suburban area defined in Riverside County as a community located outside the central city, offering a mix of residential areas with a lower population density compared to urban core.

There is no assurance that either of the nearby RCFD engines will be in their stations when a wildfire threatens the Project from an ignition in the adjacent wildlands. RCFD engines may respond from other stations located further away or from other incidents. Additional agencies such as other nearby fire departments would likely respond equipment under mutual aid agreements but may arrive after the RCFD engines were on-scene. 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 projects designed for wildfire, use *"defensible space,"* ignition resistant building features, and key fuel treatment strategies that enable residents to substantially increase their ability to survive a wildfire on their own without the loss of their structure until firefighting equipment arrives. The goal of this PFPP, therefore, is to make the Projects occupants as safe as possible and able to survive on their own until firefighting equipment arrives and/or residents can be safely evacuated.

5.0 LANDSCAPE PLANS

Landscape architects, designers, and lot owners should consult with the RCFD for recommendations involving appropriate plants for Zone 1 if there is a concern about its fire resistance. Avoid the use of all plants found in Appendix "A". Landscape Plans need to follow the California requirements and use fire-resistant plants such as those shown in Photo 8.



Photo 6 –*Succulents are a group of plants known for their high moisture content and therefore are more likely to be cooked than burn when exposed to wildfire.*

5.1 Plant Species Selection

The trees, plants, shrubs, vines, and ground covers, including native vegetation, proposed for use as landscaping in the Project are required to be in accordance with the following:

i. Appropriate for Climate Zones 18 and 19 as determined by *Western Garden* published by Sunset Books.
ii. Appropriate for California Irrigation Management Information System (CIMIS) Evapotranspiration Zone 9.

iii. Have a Region 4 Water Use Classification of Landscape Species (WUCOLS) classification of Low or Very Low based on WUCOLS IV, 2014. See https://ccuh.ucdavis.edu/wucols for additional information.
iv. Not determined by any standard or classification to be invasive.

Applying the above requirements lessens the chance that a plant will die due to either freezing or heat stress and not spread beyond the landscape where it is planted.

5.2 California Landscape Plan Requirements

Per the CFC, Section 4903.2.1, the landscape plan developed for the common areas located in a high fire hazard zone shall include the following for each species proposed:

1. The plant life-form
2. The scientific and common name
3. The expected height and width for mature growth

The landscape plan shall include the species, irrigation, and maintenance requirements for each vegetation management zone located adjacent to structures and roadways that will provide significant fire hazard reduction benefits for public and firefighting safety. Per Section 4906.3.1 of the Fire Code, the landscape plans shall contain the following information:

1. Delineation of the fuel management zones from all structures.
2. Identification of existing vegetation to remain and proposed new vegetation.
3. Identification of irrigated areas.
4. A plant legend with both botanical and common names, and identification of all plant material symbols.
5. Identification of ground coverings.

Shrubs

Per Section 4906.4.1 Shrubs, all new plantings shall comply with the following:

1. Shrubs shall not exceed 6 feet in height.
2. Groupings of shrubs are limited to a maximum aggregate diameter of 10 feet.
3. Shrubs groupings shall be separated from other groupings a minimum of 15 feet.
4. Shrub groupings shall be separated from a structure a minimum of 30 feet.
5. Where shrubs are located below or within a tree's drip line, the lowest tree branch shall be a minimum of three times the height of the understory shrubs or 10 feet, whichever is greater.

Trees

Per Section 4906.4.2 Trees, trees shall be as follows within the 30-foot zone of a structure:

1. New trees shall be planted and maintained so that the tree's drip line at maturity is a minimum of 10 feet from any combustible structure.

2. The horizontal distance between crowns of new trees and crowns of existing adjacent trees shall not be less than 10 feet.
3. Existing trees shall be trimmed to provide a minimum separation of 10 feet away from any chimney and stovepipe outlets per Title 14, Section 1299.03.

5.3 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 referred 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 or treated from beneath the circumference of tree and shrub 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.

The RCFD does not have a list of approved fire-resistant plants for fuel modification zones. The trees, shrubs, vines, succulents, and ground covers, including native vegetation, proposed for use as landscaping in fuel modification zones shall be in accordance with two or more of the following publications:

- https://www.firefree.org/wp-content/uploads/2016/02/Fire-Resistant-Plants.pdf
- https://firesafesdcounty.org/wp-content/uploads/2017/05/Comprehensive-Fire-Resistant-Plant-List.pdf
- https://fire.lacounty.gov/wp-content/uploads/2020/05/Plant-Selection-Guidelines.pdf
- https://vcfd.org/wp-content/uploads/2020/02/PlantReferenceGuide.pdf
- https://www.firesafemonterey.org/plant-lists.html#table1
- https://sbcfire.com/wp-content/uploads/2022/08/2015_Beneficial_plant_list-1.pdf

6.0 FUEL MODIFICATION ZONE DESCRIPTIONS, TREATMENTS, AND LANDSCAPE PLAN REQUIREMENTS

Described below are the required treatments for the Fuel Modification Zones. All distances in this report are measured horizontally. The required 100 feet of fuel modification can be achieved on all interior lots. When less than 100 feet of total fuel treatment is provided for a perimeter lot, additional construction features outlined in Section 7.2 are required. This should mitigate any radiant heat or direct flame impingement issues from the maximum projected **37.6**-foot flame lengths under worst-case weather and fuel moisture scenarios presented in Section 2.5.

The area of greatest concern for fire behavior is to the north and northeast of the Project (See Fire Scenarios – Section 2.5). ***Fire*wise2000, LLC** prefers that the fuel treatment from a residence be at least 1.5 times the flame length. The maximum flame length before additional fuel treatment is recommended is therefore 56.4 feet (1.5 X 37.6 feet). Based on this analysis, a minimum of 57 feet of fuel treatment will be required. If the minumim of 57 feet of fuel treatment cannot be achieved

additional mitigation shall be required as outlined in Section 7.2 to provide the necessary protection.

Responsibilities

Each homeowner shall be responsible for maintaining Fuel Modification Zones within their lot. The HOA or maintenance district shall be responsible for maintaining fuel treatments outside the property owners' lot boundaries. In the event a lot is repossessed, the person(s)/agency holding title to the lot will be responsible for the maintenance. The topography within the development is level to slightly sloping. The risk of any fuel modification zone causing soil erosion is not a significant concern.

Fuel Modification Zones

The fuel modification zones which follow are numbered. When a number is followed by a letter, the letter indicates the person or entity that is responsible for maintenance of that fuel modification zone.

6.1 Ember Resistant Zone 0 - Lot Owner Maintained NOT SHOWN on the Fuel Modification Plan Map.

Defined

Zone 0, aka an ember resistant 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 five feet in width measured from the exterior walls, any attached deck or stairway. 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 its base.

Zone 0 Requirements

- Absent of natural fiber, wood, and rubber mulch.
- Absent of artificial turf.
- Not contain combustible fences or gates.
- Not contain combustible decorative items and outdoor furniture.
- Shall not contain firewood piles regardless of the diameter or dimension of the wood stored.
- Clear of yard maintenance equipment with flammable components.
- Absent vehicles of any kind.
- Absent of exercise or fitness equipment with combustible components.
- Absent of any item that in whole or in part has an ignition temperature less than 900 degrees F or 500 degrees C.
- Contain noncombustible materials such as bare ground, decorative rock, gravel, decomposed granite, concrete, pavers, statuary, and water features.
- Vinyl fencing may be placed on the property line when structures are 10 feet apart. Vinyl melts when exposed to high heat and does not contribute to fire spread.

Required Maintenance

- Remove any combustible material as needed within Zone 0 including all dead vegetative matter.
- Remove any combustible material quarterly in rain gutters located above Zone O.

- Remove vehicles of any kind, exercise equipment, yard maintenance equipment that are stored within Zone 0.
- 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.

6.2 Fuel Modification Zone 1A - Maintained by the Lot Owner *(Shown as NO COLOR on the Fuel Modification Plan Map)*

Defined

Fuel Modification Zone 1A is an irrigated landscaped zone, beginning at the outer edge of Zone 0 and extending to the lot boundary. During construction, the zone will be clear of all vegetation. Once a homeowner takes possession of a home/lot, each homeowner shall maintain the zone. This zone is also part of the defensible space zone. It shall be free of all combustible construction and materials. It provides the best protection against the high radiant heat produced by wildfire. Due to its high moisture content, the vegetation within Zone 1A must be dried out or dehydrated and its temperature raised to its ignition temperature before it can burn. It therefore serves as a living passive heat sink, as heat is required to remove water. It also provides 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. The intent of this zone is to significantly reduce the probability of fire coming in contact with a structure.

Required Landscaping

- Plants installed 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. Plants used in fuel treatment zones should exhibit the following qualities to be the most "fire resistant": thick, succulent, or leathery leaf species with high moisture content; tendency to produce limited litter; the presence of high salt levels or similar compounds which may contribute to fire resistance; ability to withstand drought and frost; and the ability to withstand severe pruning.
- 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 that is Class A fire rated melts when exposed to extreme heat but does not burn and contribute to fire spread.
- Zone 1A will be cleared of all existing fire prone and undesirable plant species (see APPENDIX 'A').
- Landscape designs using hardscape features such as driveways, swimming pools, concrete, rock, pavers, and similar noncombustible features to break up fuel continuity within Zone 1A are encouraged.
- Landscaping shall be permanently irrigated and consist of fire-resistant, maintained native or ornamental plantings, such as turf, groundcovers, etc. Drip irrigation may be utilized to reduce water use, prevent disease by minimizing plant water contact, allowing the space between plants to remain dry thus reducing weed growth.
- Vegetation is prohibited underneath any deck.

- The mature height of shrubs shall not exceed 18 inches beneath trees.
- Larger shrubs may be established if limited to plant groupings of not more than 3 plants that are not more than 6 feet in height and separated from other groupings and trees by not less than 15 feet.
- Limit rows of an individual shrub species to not more than seven (7) plants followed by a space of 3X the mature height of the shrub species. This is designed to break up vegetation continuity and make it more difficult for wildfire to spread.
- Trees shall be single specimens or groupings of not more than three trees selected from an approved plant list (See Section 5.3). 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.
- Groups of not more than 3 mature trees shall be separated by 30 feet from other trees or tree groups. There is no horizonal spacing requirement within a tree group.
- Landscape plans that incorporate trees shall provide for a minimum of six feet of vertical separation from low growing, irrigated vegetation located beneath the canopy of each tree.
- No combustible mulch shall be used in Zone 1A. Consider the use of noncombustible mulch such as decomposed granite, bricks, pavers, sand, gravel, crushed shells, or decorative rock. Excelsior netting, straw blankets or waddles, and similar highly combustible erosion control products are prohibited within 100 feet of any structure as they tend to ignite readily and produce significant numbers of embers while burning.
- Biodegradable jute netting, nylon, or polyethylene mesh erosion control products and hydroseed (standard mulch) may be installed in Zone 1A for plant establishment (one time installation by the developer/builder) on slopes to reduce erosion and moisture loss when located over 20 feet from any structure.

Required Maintenance

- Lots shall be maintained year-round by each individual property owner within their property boundary (lot lines) as required by this PFPP and the RCFD.
- Remove dead vegetation monthly from tree and shrub canopies.
- Remove and replace any dead or dying plant material monthly.
- Remove weeds and invasive plants within Zone 1A.
- Prune and thin trees and shrubs quarterly to decrease fuel volumes, and to provide adequate separation between structures and plants.
- Trees must be maintained to have a minimum of six (6) feet of vertical separation from low growing, irrigated vegetation that is located beneath the canopy of each tree.
- Irrigation systems shall be tested for proper coverage and flow rates every month during the dry season and shall apply sufficient water for plants to maintain succulent growth.
- Irrigation systems shall not be turned off other than for required maintenance and or during periods of extended rainfall. Restart the system when the soil dries out.
- All trees and shrubs 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 .

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

Defined

Zone 1B is an irrigated zone that is permanently irrigated and maintained to Zone 1A criteria. All of Zone 1B is located in common areas and includes manufactured slopes, debris basins, and parks.

Required Landscaping

Same as Zone 1A with the following exceptions:

- May include larger shrubs over 18 inches when they are located over 25 feet from a residence.
- Shrubs groupings may contain 3-7 plants if located 10 or more feet from the canopy of a mature tree.
- When a irrigated planted area has a wall separating a home from the common area, the adjoining irrigated common area landscape may contain mulch, compost, or composed wood chips or jute netting to protect the soil from erosion and reduce weed growth.
- Excelsior netting, straw blankets, and similar highly combustible erosion control products are prohibited within 100 feet of any structure as they tend to ignite readily and produce embers while burning.

Required Maintenance

Same as Zone 1A except the area is maintained by the HOA.

6.4 Fuel Modification Zone 1C – Interim HOA/Future RCFCD Maintained *(Shown as Tan on the Fuel Modification Plan Map)*

Zone 1C is an area the Riverside County Flood Control District (RCFCD will eventually manage and maintain upon the construction and completion of Romoland MDP Line4-B (open trapezoidal channel). In the interim the HOA will maintain the area until the RCFCD assumes responsibility for the area. The RCFCD plans to install the major pipeline in this area in the next few years.

Required Landscaping

The area will be covered by decomposed granite (DG) material to prevent the establishment of plant material until the RCFCD installs its pipeline. After construction of the open trapezoidal channel, RCFCD will replace the DG in any exposed areas to prevent plant establishment.

Required Maintenance

- Any plant material that becomes established shall be cut to 4 inches or less in height as grass and weeds begin to cure (dry out) each year using a string trimmer. No metal blade or similar products shall be used as they would likely disturb the ground and are more likely to start a fire.

- Periodically remove all dead and dying vegetation, highly flammable exotic species, and flammable trash (see APPENDIX 'A').

6.5 Fuel Modification Zone 2 – CFD Maintained *(Shown as Yellow on the Fuel Modification Plan Map)*

Defined

Fuel Modification Zone 2 is often called a thinning zone. Zone 2 is a non-irrigated area typically covered in wildland fuels or planted with drought tolerant shrubs and grasses. It may be located in previously graded areas or in water quality basins. It is designed to reduce any wildfire threat. Zone 2 begins at the outer edge of Zone 1B and extends outward 100 feet from any structure. This zone is designed to reduce the fuel load in native or exotic vegetation to reduce the radiant and convective heat of a wildland fire by reducing flame length and slowing the rate of fire spread.

Required Landscaping

Remove all dead, woody, and flammable debris, including the flammable vegetation species listed in APPENDIX 'A'.

Required Maintenance

- As grass and weeds begin to cure (dry out) each year, they shall be cut to 4 inches or less in height using a string trimmer. No metal blade or similar products shall be used as they would likely disturb the ground and are more likely to start a fire.
- Annually remove all dead and dying vegetation, highly flammable exotic species, and flammable trash (see APPENDIX 'A').
- Individual shrubs and tree canopies shall be thinned to reduce their foliage mass or fuel loading.
- Shrub and trees, especially those located in water quality basins shall be limited to 3 specimens per group with each group canopy separated by a minimum of 25 feet.
- Debris and trimmings produced by thinning and pruning shall be removed from the site.

6.6 Roadside Fuel Modification Zone - County CFD Maintained (*Shown as Blue on the Fuel Modification Plan Map*)

Defined

The area located 20 feet on either side of any public fire access. It is maintained to Irrigated Zone 1A criteria described above in Section 6.2 or it shall be free of all vegetation. Irrigation shall maintain plant health and keep fuel moisture levels high. This zone, maintained by the County of Riverside is designed to make ingress and egress safer during a wildland fire event for both residents and emergency responders.

Required Landscaping

Same as Zone 1A

Recommendation: It is advisable that Roadside Fuel Treatment be on a dedicated irrigation zone thus separating it from all other zones. This will help ensure that irrigation is maintained

when other landscaped areas may have irrigation suspended should there be a lack of water for landscaping. Water for Irrigation may not be available during a prolonged drought.

Required Maintenance
Same as Zone 1A except this zones irrigation system would be the last to be shut down during drought conditions when water for irrigation of landscaping may be restricted.

7.0 CONSTRUCTION REQUIREMENTS

All structures within the project shall meet all wildland/interface standards to the satisfaction of the RCFD and be designed and constructed with ignition resistant construction requirements. All construction and ignition resistant requirements shall meet the 2022 California Fire and Building Codes, including Chapter 7A - California Building Code or the current codes in force at the time of permit application. For a summary description of the current construction requirements as of the date of this report, see APPENDIX 'C.' The fire protection features described herein shall be maintained to equivalent or greater ignition resistance. Any damaged or replacement window, siding, vent, roof covering, or noncombustible 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 noncombustible materials. The owners are not restricted from having concrete/brick patios, walkways, metal fencing or a swimming pool within the Fuel Treatment Zones in compliance with other codes. Homeowners shall check with the Riverside County Building Department to determine if construction permits are required

Any damaged or replacement window, siding, vent, roof covering, or noncombustible wall shall meet or exceed the original intent of the fire protection discussed in this plan.

7.1 Pre-Construction Requirements

Per Riverside County Guideline OFM-01A, the following shall be provided prior to the arrival of combustibles for construction:

- Water and power utilities shall be installed by the developer and approved by the appropriate inspecting department or agency.
- An inspection shall be scheduled with the Riverside County Fire Department, Office of the Fire Marshall to verify that access roads and other access features have been provided for buildings under construction.
- For projects with fuel modification, a vegetation clearance inspection is required.
- All gates in construction fencing shall be equipped with either a Knox or breakaway padlock.

- The Project address shall be clearly posted and visible from the public road during construction.

7.2 Additional Construction Requirements

The developer is allowed, per the Riverside County Planning Department R-4 Zone requirements, 5-foot side yard setbacks (10 feet of separation between buildings) for interior lots and not less than 10 feet when the lot is a corner lot. These parameters potentially create conditions that will support a structure-to-structure urban conflagration.

Existing fire separation requirements were designed to limit urban conflagrations, originating from a single interior building fire (not for homes exposed to wildfires or multiple structure fires occurring simultaneously). Under these assumed conditions, firefighters typically have sufficient resources to control and suppress a single-family home fire.

Under extreme wildfire conditions, where fires are simultaneously occurring in both wildland vegetation and the built environment, firefighting resources are often overwhelmed and unable to limit structure-to-structure fire spread (particularly under severe fire weather with high winds). For parcel sizes where residential structure separations (e.g., 5–10 feet) are permitted, the effects of radiation, direct flame impingement, and ember exposures from a home on fire are likely sufficient to ignite an adjacent structure, particularly a downwind home under high-wind conditions. High winds will cause the flames to bend over (Photo 6) in the direction that wind is blowing thereby forcing them into adjacent structures. Homes are not designed for this extreme fire exposure.

In the event of a wildfire in the adjacent wildlands, all the structures in the Project will be showered with embers. Embers are forecast to travel over one mile in the vegetation types located along the northern and eastern perimeter. To mitigate this hazard and the setback concerns, the following construction features will be required:

Required for All Lots:

- 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 to prevent embers from entering the structure during high wind conditions when windows may be inadvertently left open.

- Solar panels installed on a roof shall be enclosed with 1/4 inch or finer noncombustible and corrosion resistant mesh to prevent the accumulation of leaves, twigs, and other combustibles, especially during strong winds. This mesh shall be run along the perimeters of the solar array too stop birds and rodents from accessing the warm protected underside wiring. It shall also prevent these animals from building nests beneath the panels which could be ignited by embers.

- Between all structures with $\leq$ 10 feet of separation, a six (6) foot tall solid noncombustible radiant heat fire deflection wall as described below shall be installed on the property line between the structures to provide additional protection for

structure-to-structure fires. This wall will also serve as a privacy fence. Note, this building feature is not shown on the Fuel Modification Plan Map.

7.3 Required No Build Zone – Lots 142-147, 149-157

Due to the lack of the required 100 feet of fuel modification on these lots, a no build zone, indicated as **Pink** on the Fuel Modification Map, is required between the structure and the backyard non-combustible wall. This zone has the same landscaping and maintenance requirements as Zone 1A. In addition, No combustible structures, which include the house, can be built within this zone. Combustible decks, patio covers and gazebos shall be prohibited in this zone. Heavy timber, non-combustible structures, patios, pools, etc are allowed in this zone. Heavy timber construction is defined as lumber that is measured as 4 x 4, 2 x 6, or larger. Lumber such as 1 x 1's, 1 x 2's, 2 x2's, 2 x 4's, wood lattice, bamboo screens, etc. are not allowed.

7.4 Required Additional Building Features – Lots 147-157

The additional building features described below shall be required. These features are required to mitigate for the lack of 100 feet of fuel modification.

1. No vents or openings such as pet doors shall be located on an exterior wall that faces wildland vegetation.
2. All fences within a lot shall be built of noncombustible materials. Vinyl and similar self-extinguishing fences materials are prohibited.
3. Homes on these lots shall be single story
4. Fire sprinklers shall be installed in all garages per NFPA13D
5. Automatic door closers shall be installed on all exterior doors including the person access garage door.
6. An eight (8) foot tall solid noncombustible radiant heat and fire deflection wall shall be installed on the northern perimeter and a six (6) foot tall solid noncombustible radiant heat and fire deflection wall eastern perimeter at the location shown on the Fuel Modification Plan Map. The wall will aid in radiant and convective heat deflection and when located between residences, reduce radiant heat should an adjacent structure catch fire.

   Noncombustible walls can be built of concrete block, stone, brick, metal or similar material as long as the wall is solid and noncombustible. The upper half of said wall may be a view wall where tempered fire-rated glass of not less than ¼ inch thickness is utilized as long as the wall remains solid and noncombustible (See Appendix 'E' for an example). Post and glass frame assemblies for view walls shall be composed of metal such as steel, and 6063T5 aluminum alloys or equivalent, respectively, which will not melt and allow the glass to fall out.

   Any gate placed within a solid noncombustible wall shall be the same height as the wall and constructed of noncombustible materials. The opening around the gate including its base shall not exceed ½ inch.

A solid wall located at the top of slopes or on flat land on the property line/edge of the building pad away from a home will have a tremendous impact on radiant and convective heat, ember collection, and reduction in wind speeds that reduces fire behavior. These impacts are demonstrated in Figure 3.

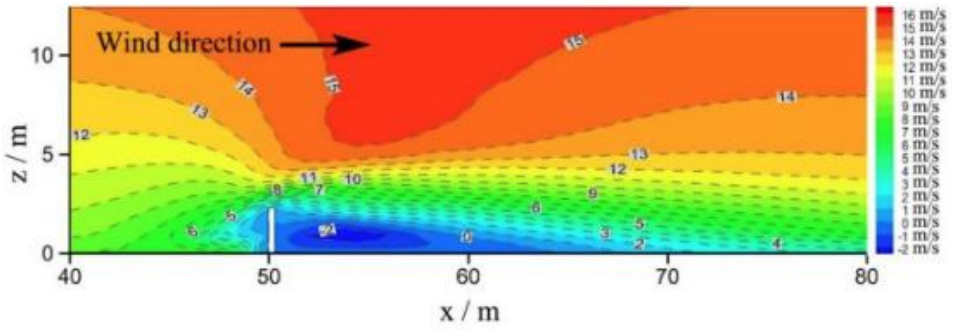


Figure 3 – Impacts on Wind Speed and Ember Deposition Resulting From a 2 Meter (6+-foot Wall. *The above diagram is based on a wind speed of 14 m/s (31 MPH). Note that the wind, both on the windward and leeward sides of the wall, is reduced. These areas will thus trap firebrands and blowing debris (area 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.*

8.0 MANDATED INCLUSION IN THE CC&R'S

Covenants, Conditions & Restrictions shall be recorded on each residential parcel and include the following statements:

1 Homeowners shall be responsible for all required fuel treatment and fire protection measures on their respective lots.

2 All property owners shall be members of a Homeowners Association (HOA) and will financially support the annual maintenance of all required Fuel Modification Zones within the common areas of the subdivision in perpetuity.

3 Each lot owner is responsible to the Riverside County Fire Department for the completion of all required fuel treatment within their lot. Required on-going maintenance will be accomplished on an as needed basis. Should maintenance not be performed in a manner consistent with the approved Fire Protection Plan, the Riverside County Fire Department shall have the right to abate any treatment zone they deem a threat to the Development or adjoining properties. In doing so, all costs incurred will be billed to the owner(s). At the discretion of the Riverside County Fire Department Fire Marshal, yearly inspection of treatment areas may be required.

4 The property owner is responsible for providing new property owners with a copy of the Fire Protection Plan including recorded CC&R's or disclosure statements identifying the responsibilities for maintaining fuel modification zones and building features within their property.

5 All common area fuel treatments within the subdivision as shown on the Fuel Modification Plan Map is the maintenance responsibility of the HOA. The HOA Board will be responsible to the Riverside County Fire Department for the completion of all required Fuel Modification Treatments prior to the annual fire season or times when growth of additional combustibles makes it necessary as determined by the County Fire Marshal. This includes the perpetual management of invasive species (exotics) in any zone within this development.

6 All individual lot landscape plans, including additional structures, shall be reviewed and approved by the HOA Board and will comply with the Fire Protection Plan. Any disputes relating to HOA Board approval of individual yard landscaping, with regard to interpretation of the Fire Protection Plan, will be decided by the Riverside County Fire Marshal or their designated representative. The Fire Marshal's decision will be final and binding on the landowner.

7 The HOA Board will have the authority for enforcing required fuel treatment measures on all lots and restrictions on combustible structures adjacent to common areas.

8 The HOA is responsible to the Riverside County Fire Department for the completion of all required Fuel Modification 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 Riverside County Fire Department shall have the right to abate any treatment zone they deem a threat to adjoining properties. In doing so, all costs incurred will be billed to the owner(s). At the discretion of the County Fire Marshal, yearly inspection of treatment areas may be required.

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

9.0 INFRASTRUCTURE

Infrastructure includes the basic systems needed to develop a property and support its use by its residents and/or businesses. For Fire Protection Plan purposes, these typically consist of the water supply for fire hydrants and fire sprinkler systems and accessways to and from the property.

9.1 Water Supply & Hydrants

The Eastern Municipal Water District (EMWD) will provide the Project with its water supply. An approved permanent water supply capable of supplying the required fire flow for fire protection shall be provided by the developer and accepted by EMWD prior to any combustible material placed on the site. Water mains shall be a minimum of six (6) inches in diameter. The water supply system shall be a looped system served from a minimum of two points.

Water system plans shall be designed by a registered civil engineer, contain a Fire Department approval signature block, and shall conform to hydrant type, location, spacing, and minimum fire flow. Once the plans are signed by the local water company, the originals shall be presented to the Fire Department for signature.

Water supplies for fire protection and hydrants shall be in accordance with APPENDIX 'B' and APPENDIX 'C' of the California Fire Code. Based on the total square footage of the largest proposed residence, the minimum fire flow shall be 1,500 GPM at 20 psi residual pressure for a 2-hour duration, since each building will be equipped with an automatic fire sprinkler system in accordance with NFPA Standard 13D. Fire flows from a single hydrant for school and multi-family areas shall be a minimum of 1,500 GPM for a 2-hour duration or as designated by the RCFD.

The RCFD Guideline OFM-01B shall be used to determine the water supply and fire hydrant requirements. Hydrant installation along roadways shall be installed per Riverside Transportation Department Standard 701 or 702. Per Ordinance 787.11, each residential hydrants shall consist of one (1) four (4) inch outlet and one (1) two and half (2 ½) inch outlet. Fire hydrant street markers shall be visually indicated in accordance with RCFD Policy 06-11. These markers shall consist of blue reflective pavement markers and shall be indicated on all water plans submitted to the RCFD. Such markers shall not be utilized for other purposes within the Project.

The County will require the applicant or developers to furnish one copy of the water system plans to the Fire Department for review. Plans shall be signed by a registered civil engineer, containing a Fire Department approval signature block, and shall conform to hydrant type, location, spacing and minimum fire flow. Once the plans are signed by the local water company, the originals shall be presented to the Fire Department for Signature.

9.2 Access Roads/Driveways and Gates

The Project will have two means of access: Palomar Road and Tradewinds Drive. All access roads shall be built to Ordinance No. 461.11 County Road Standards and County Standard Specifications. All interior driveways and access roads within the development shall be termed "Fire Access Roads."

All roads shall be designed to meet Appendix D - Fire Apparatus Access Roads Section D102.1 of the California Fire Code. The approved driving surface shall be capable of supporting the

imposed load of fire apparatus weight up to 80,000 pounds. The vertical clearance over all fire access roads and driveways shall be a minimum of 13 feet 6 inches.

Streets shall be a minimum of 24 feet in width. Along this roadway, “no parking” signage shall be installed to the satisfaction of the RCFD.

Clearance of brush or vegetative growth along new and existing roadways will comply with the current Riverside County Fire Code if not otherwise addressed in this plan.

Hose Pull Requirement
The California Fire Code, Section 503.1.1 requires that an approved fire access road be located within 150 feet of all portions of the exterior wall of the first story of any building as measured by an approved route around the exterior of each building. This requirement is sometimes referred to as the hose pull distance. An approved route means that there can be no obstructions such as walls, fences, planters, hedges, and other features that would impede firefighter access.

Gates
Any gates to be installed shall meet RCFD Standards and shall be approved by the RCFD prior to fabrication and installation. Gate entrances shall be at least two feet wider than the width of the traffic lanes serving that gate shall be a minimum of 14 feet in width. 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.

Should gates be installed, they shall be automatic and equipped with a rapid entry system. Gates activated by the rapid entry system shall remain open until closed by the rapid entry system. A Knox override key switch or similar device acceptable to the RCFD must be installed outside the gate in an approved, readily visible, and unobstructed location at or near the gate to provide emergency access. Gates accessing more than four residences or residential lots, or gates accessing hazardous, institutional, educational or assembly occupancy group structures, shall also be equipped with approved emergency traffic control-activating strobe light sensor(s), or other devices approved by the Fire Chief, which will activate the gate on the approach of emergency apparatus with a battery back-up or manual mechanical disconnect in case of power failure.

10.0 HOMEOWNER RECOMMENDATIONS AND EDUCATION

This portion of the PFPP provides residents with information that will reduce the likelyhood of a fire starting within the Project, evacuation information should evacuation be needed, and related information.

Electricity Required
Southern California Edison (SCE) provides the Project with electricity. 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 or extreme wildland fire danger. Homeowners can sign up for a free PSPS alerts at https://www.scepsps.com/. SCE also provides forecasts of potential PSPS shutdowns for the next seven days 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 prior to electricity being shut down. To aid in evacuation, the vehicle should face the roadway. During a prolonged electric outage, the irrigation system may have to be operated manually to maintain high moisture levels in landscape plants.

Homeowner Responsibilities
Each homeowner shall be aware of the herein described fire protection measures by reviewing the FFPP of the types of noncombustible construction and plant materials that are allowed within their lot boundary. A copy of this plan shall be provided to each initial resident during escrow procedures. Should a homeowner want to sell their property, the owner is responsible to provide a copy of the Fire Protection Plan to the escrow company. Of particular importance to homeowners are APPENDICES 'A', 'C', and 'D' of this plan which provide guidance in the types of plants that are not allowed to be established in landscaped areas and appropriate construction within fuel modification zones. Plant selection is critical as embers often travel over a mile during Santa Ana wind events.

Where the TT 39316 Fire Protection Plan requires specific construction features, these features shall not be changed without the approval of the RCFD. These features are required to maintain reasonable fire safety.

Water systems shall not be turned off except for necessary repairs and maintenance. Water is required to operate the fire sprinkler system which passively protects the home should a fire within the home occur.

Evacuation
Residents should always follow evacuation orders issued by law enforcement as they will be aware of the most effective and safest route. Communication between law enforcement and fire control agencies is constant during a wildfire event and designed to address both current and future evacuation needs.

Ready, Set, Go is the evacuation strategy proposed for this project is described on the CAL FIRE website (https://www.readyforwildfire.org/prepare-for-wildfire/ready-set-go/) and widely utilized by fire agencies and departments throughout California as well as the nation. 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. 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 ensuring 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

11.0 CONCLUSIONS

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

The requirements of this PFPP provide the fuel treatment standards required to mitigate the exposure of people or structures to a significant risk of loss, injury, or death. Fuel treatment zones provide 100 feet of fuel treatment that includes a defensible space zone for fire suppression forces and will protect structures from radiant and convective heat. These zones shall be a combination of an ember resistant zone followed by landscaped zones that are permanently irrigated and that consist of fire resistant and maintained plantings and thinning zones. The maintenance requirements include the removal of all prohibited highly combustible native vegetation but

permits plantings with very specific criteria. When 100 feet of fuel modification could not be established, additional building features are required.

The Project will have adequate emergency access in terms of road access and construction standards for roadways and streets. RCFD, Cal Fire, and nearby fire departments will provide fire protection through mutual aid. Response times and the proximity of the development to the WUI, and a subdivision in or adjacent to a Very High Fire Hazard Zone may require enhanced fire sprinklers to be installed in all residences.

12.0 FUEL MODIFICATION PLAN MAP

Included as a separate file is a FUEL MODIFICATION PLAN MAP. This map depicts the locations of all proposed fuel treatment locations as well as fire access roads, lot lines, and development boundaries. Once the landscape plan is available, which is consistent with this plan, a Final Fire Protection Plan can be developed that once approved by the RCFD allows for construction.

APPENDIX 'A'

Prohibited (& Fire Prone) Plant Species List
For Fuel Modification Zones in Moderate, High & Very High Hazard Areas

	Botanical Name	Common Name	Plant Form
1.	Acacia species	Acacia	Shrub/Tree
2.	Adenostema fasciculatum	Chamise	Shrub
3.	Adenostema sparsifolium	Red Shank	Shrub/Tree
4.	Artemisia californica	California Sagebrush	Shrub
5.	Anthemis cotula	Mayweed	Weed
6.	Arundo donax	Giant reed	Grass/weed
7.	Brassica nigra	Black Mustard	Weed
8.	Brassica ropa	Yellow Mustard	Weed
9.	Cedrus species	Cedar	Tree
10.	Cirsim vugare	Wild Artichoke	Weed
11.	Conyza canadensis	Horseweed	Weed
12.	Cortaderia selloana	Pampas Grass	Tall Grass
13.	Cupressus species	Cypress	Tree
14.	Cytisus species	Broom	Shrub
15.	Eriogonum fasciculatum	Common Buckwheat	Shrub
16.	Eucalyptus species	Eucalyptus	Shrub/Tree
17.	Heterotheca grandiflora	Telegraph plant	Weed/shrub
18.	Juniperus species	Junipers	Succulent
19.	Lactuca serriola	Prickly lettuce	Weed
20.	Nicotiana bigelevil	Indian tobacco	Shrub
21.	Nicotiana glauca	Tree tobacco	Shrub
22.	Pennisetum species	Fountain Grass	Ground cover
23.	Pinus species	Pines	Tree
24.	Rosmarinus species	Rosemary	Shrub
25.	Retama monosperma	Broom	Shrub
26.	Salvia species ••	Sage	Shrub
27.	Silybum marianum	Milk thistle	Weed
28.	Spartium junceum	Spanish Broom	Shrub
29.	Urtica urens	Burning nettle	Weed
30.	Washingtonia species	Palms	Tree

•• Except:
Salvia columbariae (chia)
Salvia sonomensis (Creeping Sage)

APPENDIX 'B'

Literature References

1. *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.

2. *BehavePlus: Fire Modeling System, version 5.0: Variables.* General Technical Report RMRS-GTR213WWW 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.

4. BehavePlus Fire Modeling System, Version 6.0.0. (Computer Software). Patricia L. Andrews,- US Forest Service, Rocky Mountain Research Station & Collin D. Bevins - Systems for Environmental Management. 2022. Retrieved from: https://www.frames.gov/behaveplus/software-manuals.

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. California Fire Code portion of the CBC, including appendices to Chapters 1 & 4 and Appendices B, F & H and Local Amendments

9. California Wildland Urban Interface Code

10. California Residential Code (CRC) R337

11. *The California State and Local Responsibility Area Fire Hazard Severity Zone Map – Fire and Resource Assessment Program of Cal Fire.* April 2024. https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones

12. Riverside County Ordinances; 460, 787, and 460.154 (as amended).

13. 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.

14. National Fire Protection Association - NFPA 13D Standard for the Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes, 2025 Edition

15. National Fire Protection Association – NFPA 1140 Standard for Wildland Fire Protection.

16. Quarles, S., and E. Smith. 2011. The Combustibility of Landscape Mulches, SP-11-04, University of Nevada Cooperative Extension, Reno, NV.

17. Riverside County Fire Department Standards #06-05, revised 6/1/11, #06-06 revised 6-30-11, #06-11 revised 2/2/17, and #16-001 revised 10/23/17.

18. Sunset Western Garden Book. Menlo Park, Calif, Lane Publishing Corporation. Most current version. 592 pages.

19. 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

APPENDIX 'C'
Ignition Resistant Construction Requirements

The following is a summary of the current requirements for ignition resistant construction for high fire hazard areas under the current California Wildland Urban Interface Code, California Building Code (CBC) and the California Residential Code. 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 California ignition resistance requirements 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 current requirements of California Wildland Urban Interface Code. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.

2. Roof valley flashings shall be not less than 0.019-inch (0.48 mm) No. 26 gage galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72-pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909, at least 36-inch-wide (914 mm) running the full length of the valley.

3. Attic or foundation ventilation louvers or ventilation openings in vertical walls shall be covered with a minimum of 1/16-inch and shall not exceed 1/8-inch mesh corrosion-resistant metal screening or other approved material that offers equivalent protection.

4. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to resist the intrusion of flames and embers, be fire stopped with approved materials or have one layer of a minimum 72-pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909 installed over the combustible decking.

5. Enclosed roof eaves and roof eave soffits with a horizontal underside, sloping rafter tails with an exterior covering applied to the under-side of the rafter tails, shall be protected by one of the following:
    - noncombustible material
    - Ignition-resistant material
    - One layer of $^{5}/_{8}$-inch Type X gypsum sheathing applied behind an exterior covering on the underside of the rafter tails or soffit
    - The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the rafter tails or soffit including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
    - Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in Section 707A.10 when tested in accordance with the test procedures set forth in ASTM E2957.

- Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3.
  Exceptions: The following materials do not require protection:
  1. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails. 2. Fascia and other architectural trim boards.

6. The exposed roof deck on the underside of unenclosed roof eaves shall consist of one of the following:
   - Noncombustible material, or
   - Ignition-resistant material, or
   - One layer of 5/8-inch Type X gypsum sheathing applied behind an exterior covering on the underside exterior of the roof deck, or
   - The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the roof deck designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association fire Resistance Design Manual.
     Exceptions: The following materials do not require protection:
     1. Solid wood rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
     2. Solid wood blocking installed between rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
     3. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails. 4. Fascia and other architectural trim boards.

7. Vents - ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents, other materials or other devices that meet one of the following requirements:
   A. Vents listed to ASTM E2886 and complying with all the following:
      i. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
      ii. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
      iii. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).
   B. Vents shall comply with all 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 shall comply 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. Exhaust and dryer vents that extend through and exterior fire rated wall shall be of noncombustible material and meet CBC 1202.4.1 where the mesh cover openings shall not be greater than ¼ inch.. The vent covering materials may be of any of the following:

   1. Perforated sheet metal plates not less than 0.070 inch (1.8 mm) thick.
   2. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick.
   3. Cast-iron grilles or gratings.
   4. Extruded load-bearing vents.
   5. Hardware cloth of 0.035-inch (0.89 mm) wire or heavier.
   6. Corrosion-resistant wire mesh, with the least dimension not greater than $^{1}/_{8}$ inch (3.2 mm).
   7. Operable louvres, where ventilation is provided in accordance with Section 1202.4.1.2.

10. 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.

11. All multi-family structures will have automatic interior fire sprinklers installed according to the National Fire Protection Association (NFPA) 13R 2025 edition - *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*.

12. All single-family 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 System in One- and Two-Family Dwellings and Manufactured Homes.7

13. The exterior wall covering, or wall assembly shall comply with one of the following requirements:
    - Noncombustible material, or
    - Ignition resistant material, or
    - Heavy timber exterior wall assembly, or
    - Log wall construction assembly, or
    - Wall assemblies that have been tested in accordance with the test procedures for a 10-minute direct flame contact expose test set forth in ASTM E2707 with the conditions of acceptance shown in Section 707A.3.1 of the California Building Code, or
    - Wall assemblies that meet the performance criteria in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in SFM Standard 12-7A-1.

    Exception: Any of the following shall be deemed to meet the assembly performance criteria and intent of this section including;
    - One layer of 5/8-inch Type X gypsum sheathing applied behind the exterior covering or cladding on the exterior side of the framing, or
    - The exterior portion of a 1-hour fire resistive exterior wall assembly designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Associate Fire Resistance Design Manual.

14. 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.

15. 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.

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

17. No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.

18. 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 noncombustible 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.

19. 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.

20. 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.

21. 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.

22. All eaves, fascia and soffits will be enclosed (boxed) with noncombustible 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.

23. 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.

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

25. 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.

26. 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.

27. Fire access tunnels shall have two hour rated walls consisting of two layers of 5/8" Type 'X' gypsum wallboard panels on each side of the studs. The EZ Taping Systems "Fire Tape" product or equivalent should be used as an alternative to convention joint tape when:
    1. Two or more layers of listed Type 'X' gypsum wallboard are applied vertically with joints staggered and joints of the face board are":
        a. Tightly butted and taped with EZ Taping Systems "Fire Tape" or equivalent product or
        b. Finished with joint compound of EZ Taping Systems "Fire Tape" or equivalent product if the gap between gypsum wallboard panels are visible at the joint.
    2. Two or more layers of USG "Sheetrock" Fire code C gypsum wallboard are applied (horizontally or vertically).
    3. Gypsum panels shall be attached with Type S drywall screws, placed 8" oc to vertical edges and 12" oc to top and bottom runners and intermediate studs.
    4. Fire Tape shall be nominal 2" wide and applied on the vertical joints at studs.

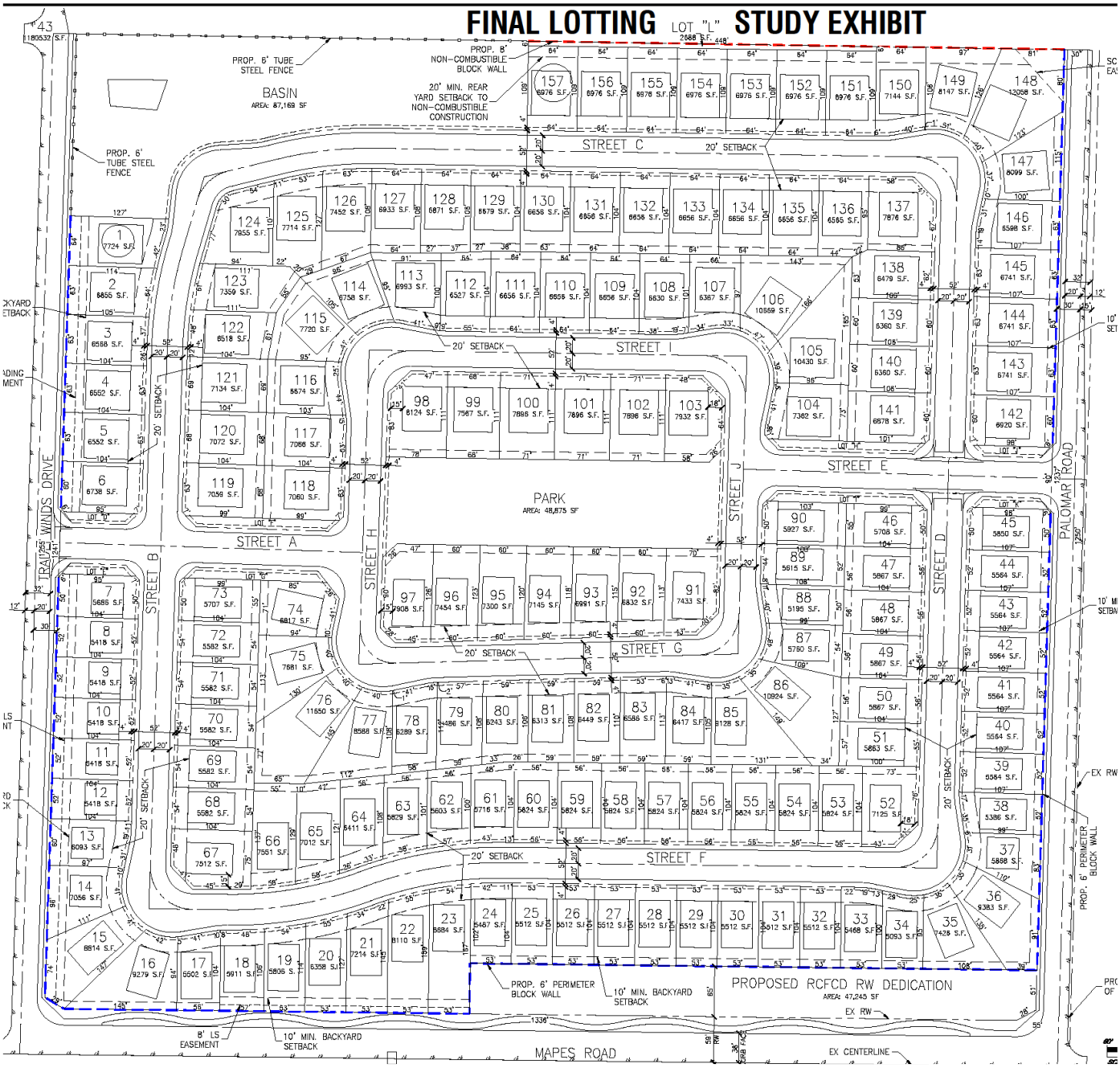
** FAHJ – Fire Authority Having Jurisdiction
SFM – State Fire Marshal
NFPA – National Fire Protection Association

APPENDIX ‘D’

PROJECT LAYOUT – TRACT 39316

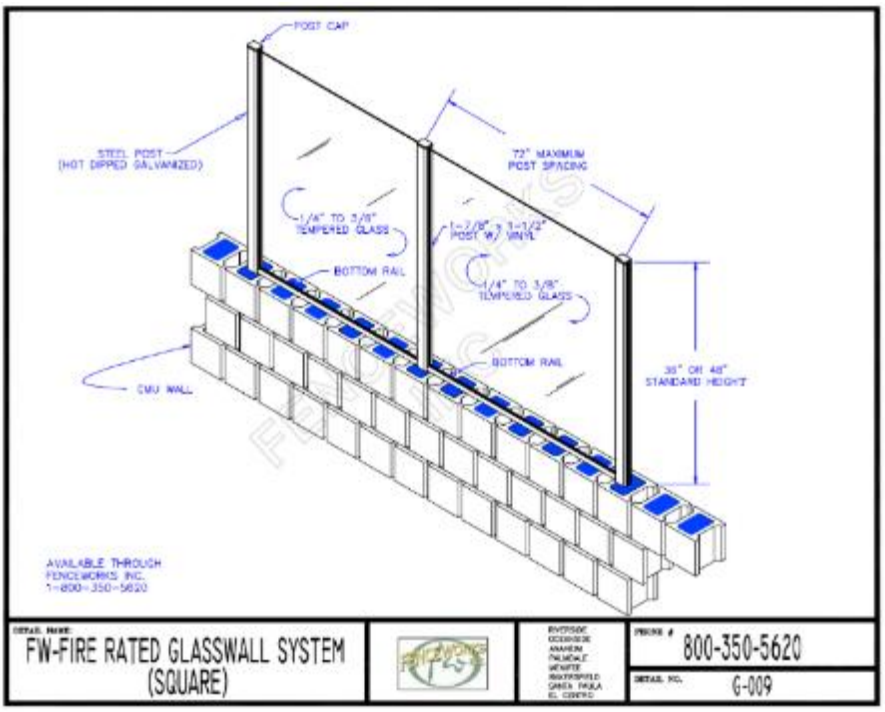
Note: For General Layout and Visualization Only.

FINAL LOTTING LOT "L" STUDY EXHIBIT



APPENDIX 'E'

EXAMPLE OF A VIEW WALL





Note: There are many fence builders that can building fire deflection view walls. ***FIRE*WISE2000, LLC** does not endorse any business. The design shown above is consistant with this plan.

APPENDIX 'F'

EVACUATION CHECKLIST – WHAT TO TAKE

The following is a recommended list of items to take should a person or family expect that they could be evacuated due to wildfire. It was adapted from numerous 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 secured 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 by 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 a long sleeve shirt, pants and a 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.
- Sufficient clothing for 3-5 days in him and her bags.
- Personal toiletries including: deodorant, disposable shavers, extra toothbrushes, shampoo & shaving cream, toothpaste, and feminine supplies to last 3-5 days.

- Computer backup files.
- Family heirlooms, photo albums and videos
- 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’

TTM 39316 - LANDSCAPE PLAN

The Landscape Plan will be reviewed by Firewise2000 for consistency with the PFPP. When the Landscape Plan is approved it will be attached to the FPP and the FPP will be converted to a Final FPP.

APPENDIX 'H'

ADDITIONAL OWNER INFORMATION

The following is additional information that is not required but of benefit to a homeowner.

Should a Wildfire Occur
Each homeowner in the Project should ensure that all doors and windows (including the garage), and fireplace dampers are closed to prevent embers from entering their structure in the event of a wildland fire. Doors should be left unlocked to allow emergency personnel unimpeded access. Both inside and outside lights should be placed on to allow emergency personnel to know that a home is present when smoke or darkness may otherwise obscure visibility. In addition, no combustible materials shall be stored within 30-feet of any structure. Additional information concerning relocation/evacuation and preparation for wildfire can be acquired from the RCFD.

Yearly Home Inspection - Adding Features
Homes shall be inspected each year by their owner, preferable in early to mid-summer, prior to the worst part of a typical fire season. These inspections should include the roof, doors, windows, and exterior walls looking for cracks. Cracks are places where embers can land or potentially enter a structure. If there are openings between the roof covering that exposed the wood deck or facia, repair the area as needed. Fill any opening in a metal or tile roof that would allow birds, rodents, or firebrands with a noncombustible material designed for exterior exposure.

Inspect the seams around all exterior doors, especially the garage door, to make sure that there are no openings greater than 1/8 inch in width. If there are, replace the seal or add a noncombustible trim piece, such as fiber cement board, that when installed leaves not more than a 1/8-inch gap between the trim piece and the door.

Where there is a desire to add a pet door, use only UL certified fire rate pet doors between the garage and the house. Do not install any pet door from the interior of the home to the exterior as it will create an opening with a lesser fire rating than the walls which are required to be 1-hr rated.

When adding blinds, the materials used should be of metal or a fire-resistant shade fabric that is certified to pass NFPA 701 testing when exposed to a flame for 12 seconds. This feature is most important on the side of the home that faces wildland vegetation.

Should the homeowner desire to add a solar system on the roof, be sure to include a metal mesh/barrier, such as galvanized hardware cloth, around the exterior of the panels. This feature will prevent birds, mice, and squirrels from placing waste and nesting materials beneath the panels and prevent the accumulation of windblown debris. It will also serve to protect the panels wiring from rodents.

Maintenance Equipment Operation
When performing landscape 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

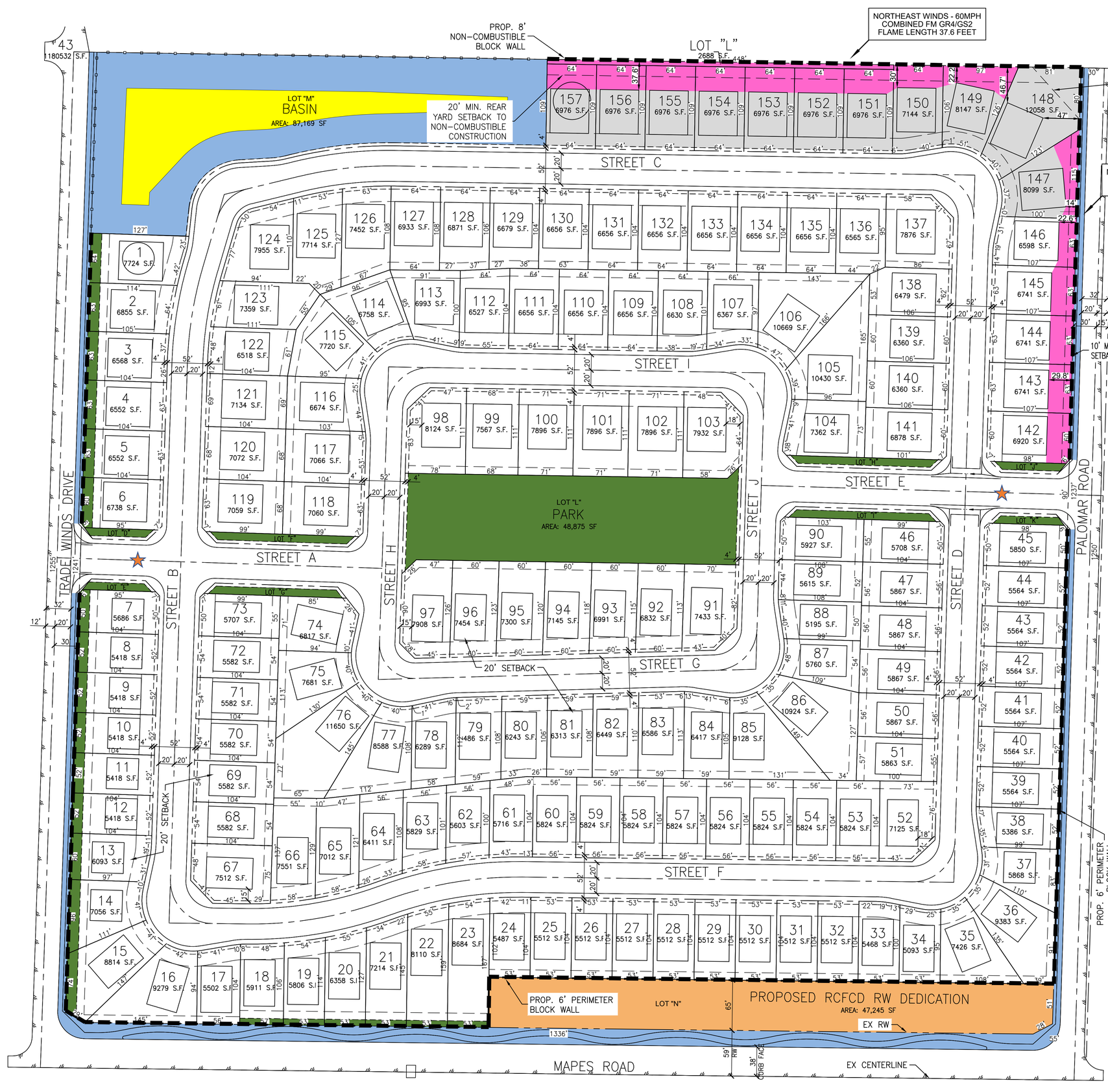
a fire. Metal mowing equipment should be avoided as a rapidly rotating metal blade could strike a rock creating a spark which could on very dry days start a fire. String trimmers are preferred to metal as they are much less likely to start a fire.

Health and Safety

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.

Pets can also be effected by exposure to smoke. High levels of smoke may irritate animals' eyes and respiratory tract. Animals with heart or lung disease are especially at-risk and should be closely watched during periods of poor air quality.

Homeowners and the HOA can monitor local air quality by visiting the following web site: https://www.iqair.com/us/air-quality-map/usa/california/riverside.This link is directly to Riverside County and is generally updated hourly. It also contains a forecast for the following day. Remember, windblown smoke can travel for miles from its source. The farther a person is away from the source, the less the smoke impact will be.



MAPES ROAD - TTM 39316
FUEL MODIFICATION PLAN MAP LEGEND

Riverside County, California

Symbol	Description
NOT SHOWN	**FUEL MODIFICATION ZONE 0 (LOT OWNER MAINTAINED) -** A zone that is cleared of all existing plants and combustible materials that is 5 feet in width beginning at the outer wall of each structure, attached deck or stairway. The lot owner is responsible for their individual lot. No combustible material or plants are allowed in this zone at any time. See written Fire Protection Plan for additional information.
NO COLOR	**FUEL MODIFICATION ZONE 1A (LOT OWNER MAINTAINED) -** An irrigated zone beginning at the outer edge of Zone 0 that extends to the lot boundary that is maintained by the lot owner to Zone 1A criteria. Zone 1A will be cleared of all existing native vegetation and replanted with irrigated drought tolerant and fire resistant lawns, ground covers, low growing shrubs and a few fire resistant trees. Each mature tree canopy shall be 10 feet or more from the adjacent structure. Remove and replace any dead or dying plant material monthly. No combustible mulch shall be placed in Zone 1A. It may include hardscape features such as concrete sidewalks, rock, pavers, artificial turf, swimming pools and similar features. Avoid all plants listed on the Prohibited Plant List found in Appendix A of the Fire Protection Plan. See written Fire Protection Plan for further information.
	FUEL MODIFICATION ZONE 1B (HOA MAINTAINED) - Zone 1B is an irrigated zone that is located in common areas managed and maintained by the HOA. Zone 1B also includes manufactured slopes maintained to Zone 1A criteria regardless of the its location (see written Fire Protection Plan for further information).
	FUEL MODIFCATION ZONE 1C (Interim HOA/Future RCFCD Maintained) - Zone 1C will eventually be managed and maintained by the Riverside County Flood Control District (RCFCD upon the construction and completion of Romoland MDP Line4-B (open trapezoidal channel). In the interim the HOA will maintain the area until the RCFCD assumes responsibility. The area will be covered by decomposed granite (DG) to prevent the establishment of plants until the RCFCD installs the pipeline. Any plants that become established shall be cut to 4 inches or less in height as grass and weeds begin to cure. See written Fire Protection Plan for further information.
	FUEL MODIFICATION ZONE 2 (CFD MAINTAINED) - Fuel Treatment Zone 2 is a thinning zone that is maintained to Zone 2 criteria located within the project. The zone begins at the edge of Zone 1B. Maintenance shall include the annual mowing or weed whacking of the herbaceous vegetation to a 4-inch stubble height and removal of any dead plants and those listed in Appendix A of the written Fire Protection Plan. All plant residues shall be removed from the Zone. See written Fire Protection Plan for further information.
	ROADSIDE FUEL MODIFICATION (CFD MAINTAINED) - The area located along roadways that are maintained to Zone 1A criteria. The landscape shall be permanently irrigated and regularly maintained. Should water for irrigation need to be reduced, this is the last zone that irrigation shall be removed. It is best to have this zone on its own independent irrigation zone and schedule. The intent of this zone is to reduce fire behavior adjacent to evacuation egress and emergency responder ingress routes. See Section 6.6 of the written Fire Protection Plan for additional information.
	NO BUILD ZONE (LOT OWNER MAINTAINED) - The No Build Zone has the same landscaping and maintenance requirements described for Zone 1A. No combustible structures, which includes the house, can be built within this zone.
	HOMES WITH ADDITIONAL CONSTRUCTION REQUIREMENTS - The lots with additional fire protection features. These homes have less than 60 feet of Fuel Modification. See written Fire Protection Plan, Section 7.2 for the required building features.
	NONCOMBUSTIBLE SOLID WALLS - A solid noncombustible radiant and convective heat deflection wall, a minimum of 6 feet in height (8 feet on the northern boundary), 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: EPD Solutions
3333 Michelson Drive, Suite 500
Irvine, CA 92612

Prepared By: *FIREWISE2000*, LLC
PO Box 339
Lower Lake, CA 95457
Phone: (760) 745-3947
info@firewise2000.com

FUEL MODIFICATION SYMBOL LEGEND

SYMBOL	DESCRIPTION
★	Emergency/Fire Access Way Entrance

Certified By

Melvin A Johnson, Owner **Date: 5/14/2026**
Certified CEQA Wildland Fire Consultant
***FIREWISE*2000, LLC**
PO Box 339
Lower Lake, CA 95457
Phone: (760) 745-3947
Info@firewise2000.com

This Exhibit replaces the the Mapes Road Fuel Modification Plan dated 1/21/26 and is compliant with the revised Mapes Road Preliminary Fire Protection Plan dated 5/14/26