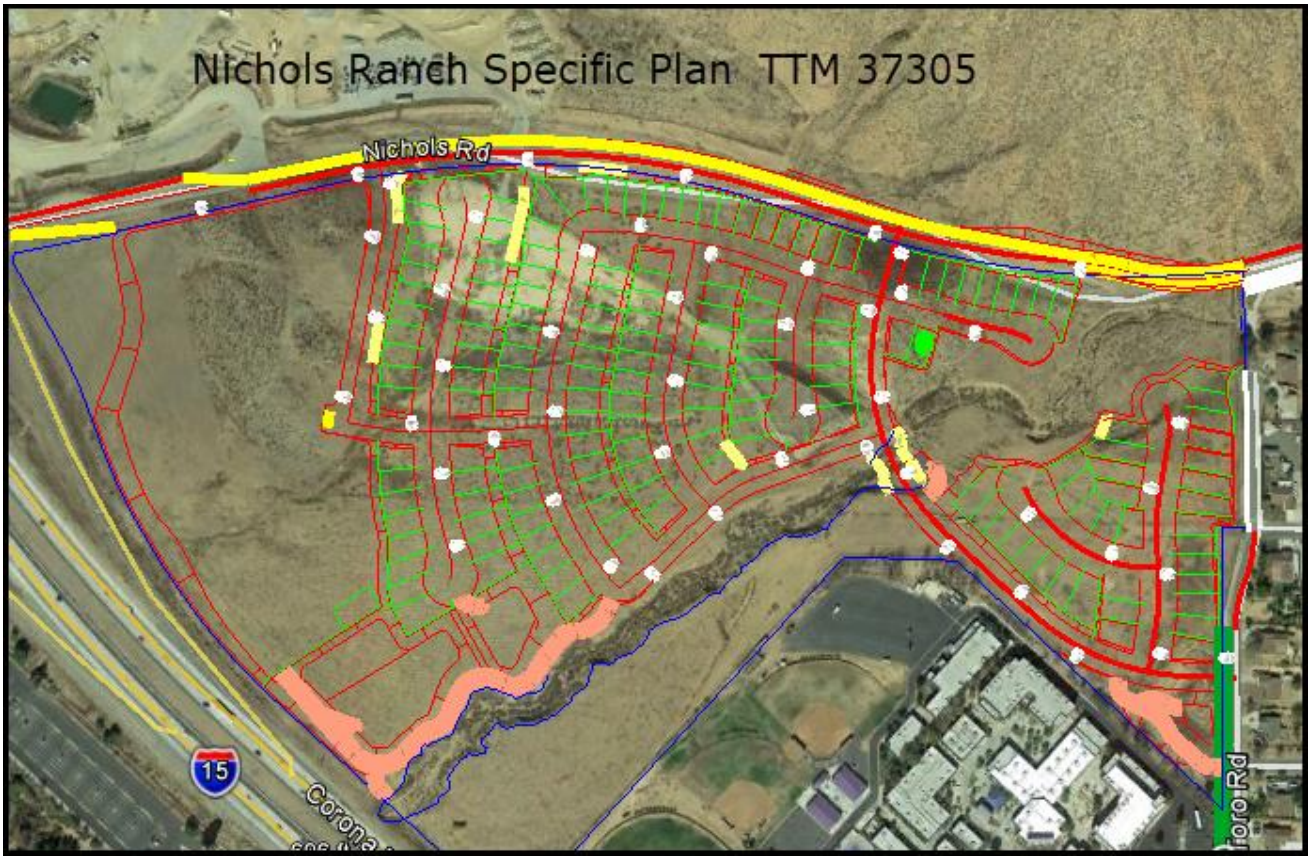
FIRE PROTECTION PLAN
Tract 37305 Nichols Ranch Specific Plan
City of Lake Elsinore
County of Riverside, California



April 5, 2018 Corrected to Comments 25Jan2019

Prepared For:
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Tract 37305
FIRE PROTECTION PLAN

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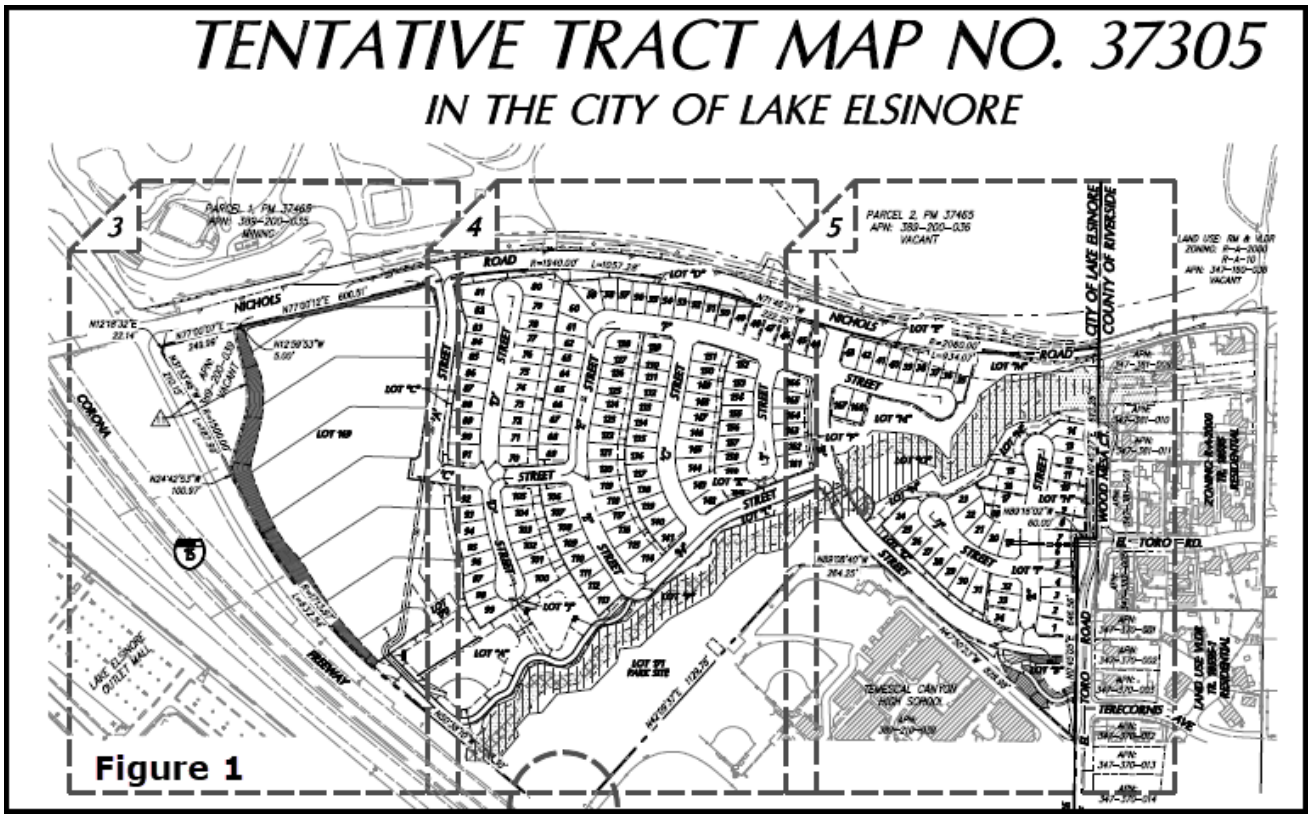
Lake Elsinore, California

1.0 GENERAL DESCRIPTION

Tentative Tract 37305, is a proposed development located in the City of Lake Elsinore, Riverside County, California.
The proposed Nichols Ranch Project ("Project") proposes to establish a new specific plan, the Nichols Ranch Specific Plan (NRSP), on an approximately 72.5-acre property located south of Nichols Road and east of I-15 in the City of Lake Elsinore, California. The Project proposes to develop the 72.5-acre property with a mixture of residential, commercial, recreation, and open space land uses. Specifically, the Project proposes a total of 168 "Low-Medium Residential" single-family dwelling units on 31.3 acres in the eastern portions of the site; 14.5 acres of commercial uses in the western portion of the site, which would accommodate a 130-room hotel, 20,900 square feet (s.f.) of restaurant use, 4,400 s.f. of commercial retail uses, an 8,000 s.f. health and fitness club, and a gas station with 16 fueling stations; recreational open space on 8.7 acres; 5.5 acres of drainage basins; 1.6 acres of open space; and 5.3 acres of backbone roadways.
The majority of the proposed development is within a Very High Fire Severity Zone.

Figure 1 Full size site plan follows Fuel Treatment Exhibit Appendix 'F'
Figure 2 Topo view



Refer to the APPENDIX 'F' Vegetation Management Map for the illustration of property lines, structures and related Vegetation Management.

A Fire Protection Plan (FPP) must be submitted to and approved by the City of Lake Elsinore and RVCFD. The approved FPP shall be recorded against all buildable lots. The FPP assesses the overall (on-site and off-site) wildland fire hazards and risks that may threaten life and property associated with the proposed Development. In addition, the FPP establishes both short-term and long-term vegetation management actions required to minimize any projected wildland fire hazards, and assigns annual maintenance responsibilities for each of the required Vegetation Management actions.

1.1 General Information

Owner: Nichols Road Partners
25555 Maitri Road
Corona, CA 92883

Approving Departments: Agency having Jurisdiction, City of Lake Elsinore and Riverside County, California

Fire Authority/Fire Construction Permits: Lake Elsinore/Riverside County Fire
Water Distribution System: Elsinore Valley Municipal Water District

The purpose of this FPP is to provide Vegetation Management Zone treatment and construction feature direction for developers, architects, builders, the City of Lake Elsinore, Riverside County Fire Department (RVCFD), Riverside County officials, and the individual lot owner to use in making the structures in the proposed project relatively safe from future wildfires. Appendices attached to this FPP provide additional information and shall be considered part of this FPP.

Requirements of this FPP are based upon requirements listed in the California Code of Regulations Title 14, section 1280 and Title 24, Part 9; 2016 California Fire Code including Appendices to Chapters 1 & 4 and Appendices B, F & H and Local Amendments; Chapter 7A-California Building Code; 2016 California Residential Code sections R337; California Government Code, sections 51175 through 51189; California Public Resources Codes sections 4201 through 4204; National Fire Protection Association Standards (NFPA) 13-D, 2013 Editions; Riverside County Ordinances; 787.7 and 460.151.

2.0 WILDLAND FIRE HAZARD AND RISK ASSESSMENT

In assessing the wildland fire hazard, it is necessary to consider plant succession and the climax plant communities. The vegetation described below is the most likely climax plant community that will exist without human intervention and the one utilized for planning purposes.

2.1 On and Off-Site Fire Hazard and Risk Assessment

On-site vegetation consists of a mix of native and non-native plant species, with native coastal sage scrub, shrubs and herbs dominant (see Photos 1 and 2). For fire behavior planning purposes, this is best described as a Fuel Model SH5 (1-hour fuels of 3.6 tons/acre and 10-hour fuels of 2.1 tons/acre). The majority of these habitats will exist in the Stove Pipe Creek undisturbed area. All of these plants are adapted to intense wildfires, needed for species regeneration.

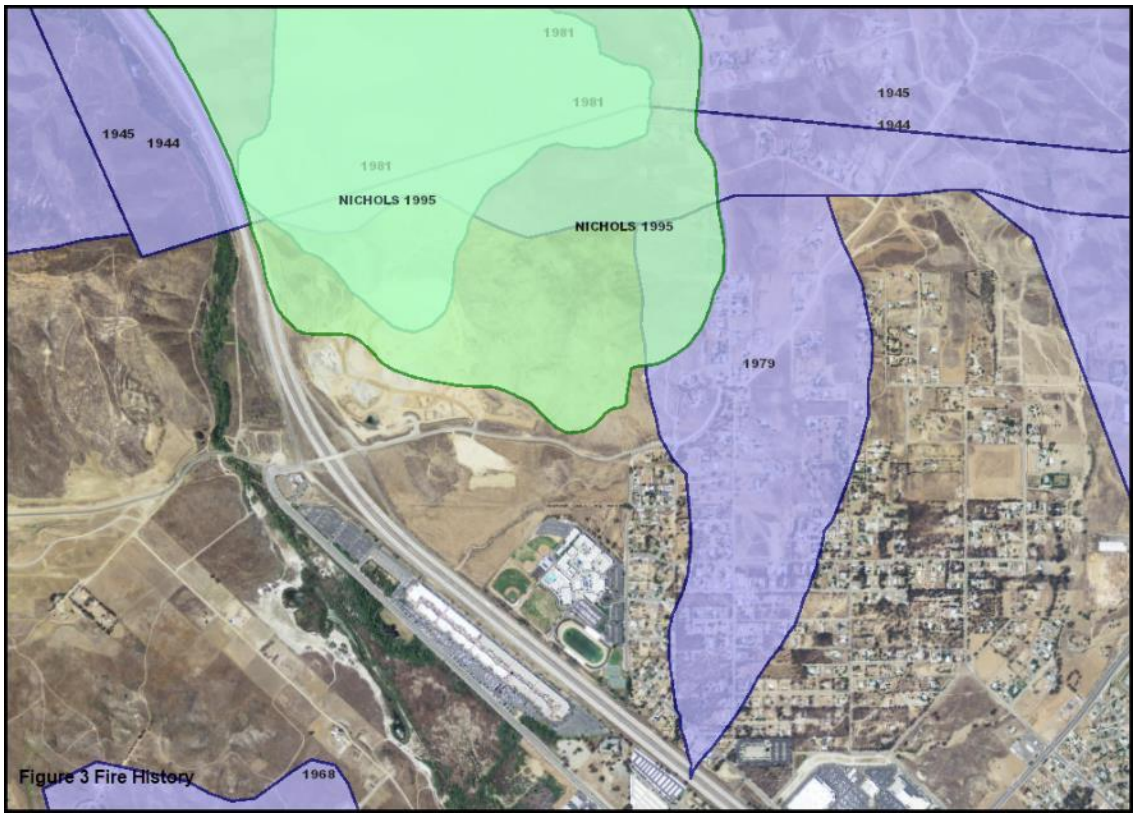


Figure 3 Fire History

The most recent fire was the Nichols Fire in 1995 (see Figure 3). There is no data to conclude the site has ever burned. The area has re-grown, as is typical of chaparral plant communities, (Photos 1 & 2) a high percentage

of the plants will have an abundance of dead material as they age. This is due to the effects of the local Mediterranean climate where warm wet winters promote abundant new growth, and long, hot and very dry summer seasons frequently occur. Occasionally, multi-year droughts cause significant parts of these plants to die back.

The area proposed for development under this Fire Protection Plan (FPP) encompasses a planned approximate 31.3-acre area. The site has experienced disturbance due to clearing of vegetation through weed abatement, mine reclamation activities and erosion. There is a blue-line streams that cuts through the easterly portion of the property (Stovepipe Creek is under the jurisdiction of CDFW, and reduction of fuel within the channel and setback areas is restricted). The site has had much of the rough grading completed at the time of site visit, there are no steep slopes that would influence the fire behavior.
Offsite slopes north Nichols Rd are comprised of a mining operation (no vegetation) on the westerly edge and an open space area that joins Nichols Rd for approximately 50% of what will be the developed area.
The slopes are vegetated with a mixture of combustible native vegetation, intermixed with light flashy native grasses. The slope is rocky which will limit the overall fuel loading that could be expected.
In addition, the aspect will further prevent an excessive fuel load in future years.
The Stove Pipe Creek/drainage crosses from north to south within the easterly end of the site. This will remain in its current condition.

The Biological Survey mapped the area with the following major specie types: Riversidean sage scrub, buckwheat, native grasses and developed land. The majority was classified as Riversidean sage scrub, and was used as the predominant fuel for modeling purposes.

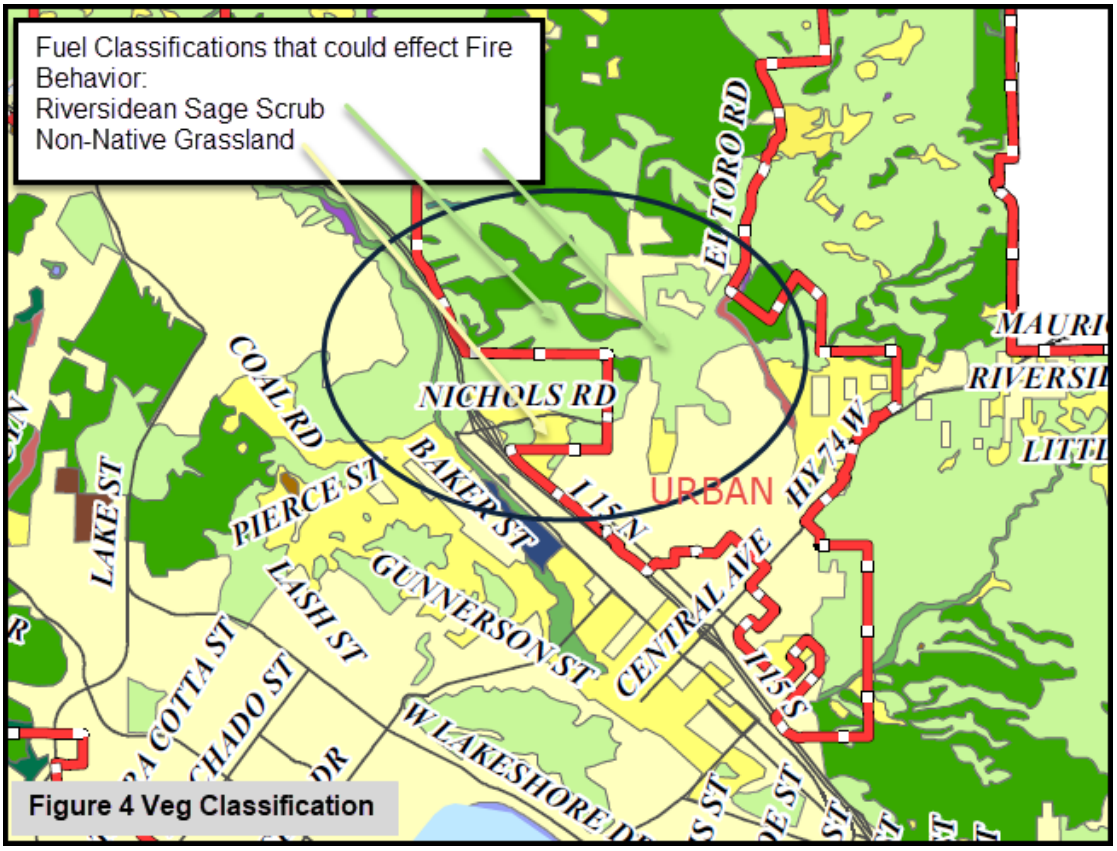


Figure 4 Veg Classification

The major wildland fire threat is from the north to northeast of the project site. This threat comes from the adjacent undeveloped land and its associated fuels, history of catastrophic fires, and severe fire weather conditions (see Photos 1 and 2).
With the exception of Stove Pipe Creek/drainage and the open space areas located to the north and northeast of the project site, all of the native vegetation within the Tract will be either; 1) cleared and replanted with "firewise" landscaping, 2) become irrigated manufactured slopes, or 3) be treated to reduce fuel loading and maintained to a Zone 3 criteria.

The following photos provide a graphic description of the site:
Photos 1 and 2 provide a descriptive view of fuel height and example of general fuel bed compactness and continuity.

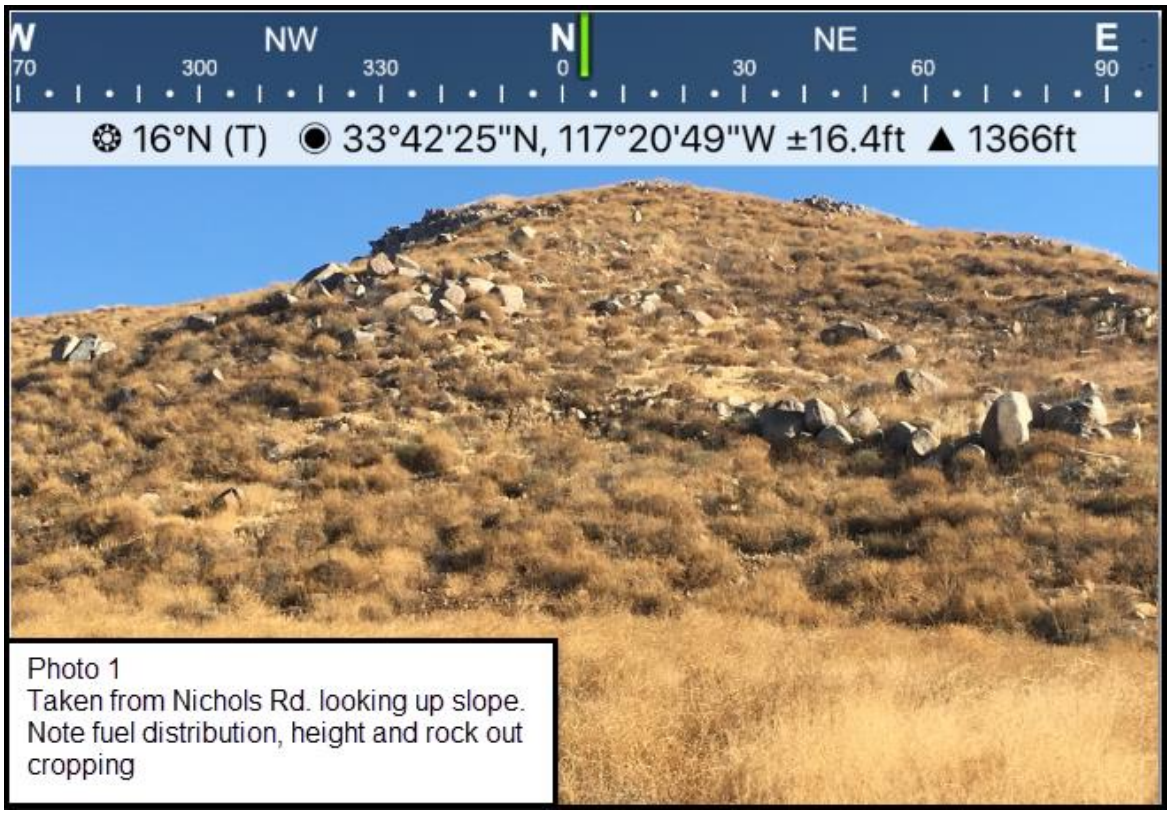


Photo 1
Taken from Nichols Rd. looking up slope. Note fuel distribution, height and rock out cropping

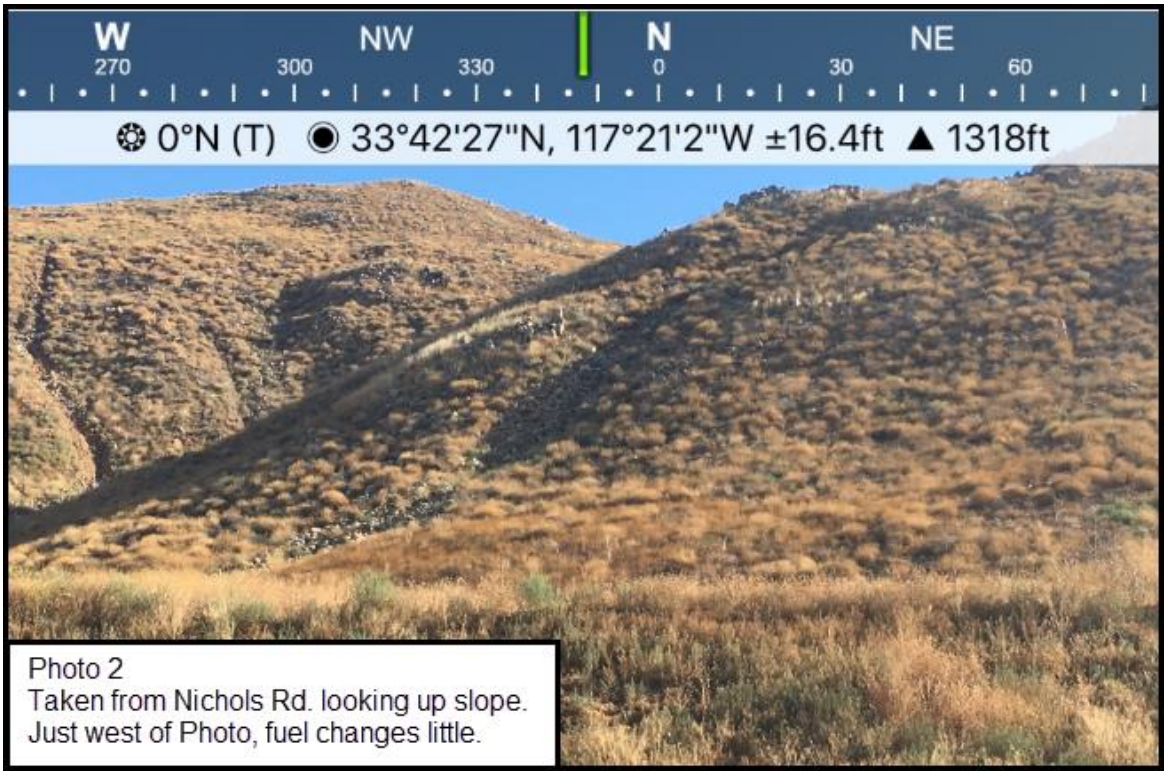


Photo 2
Taken from Nichols Rd. looking up slope. Just west of Photo, fuel changes little.

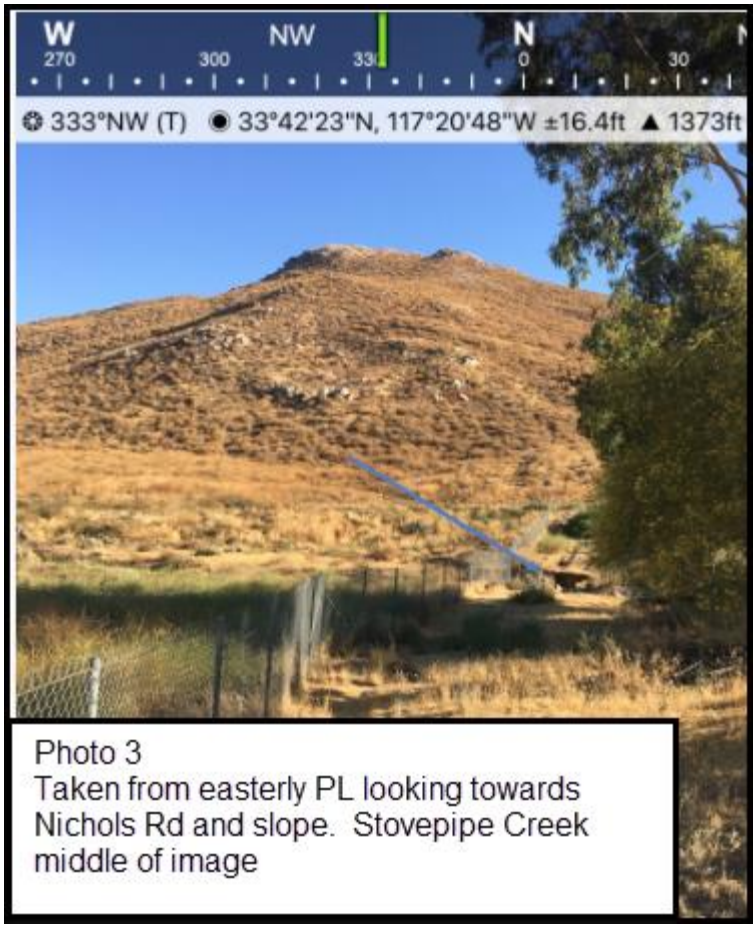


Photo 3
Taken from easterly PL looking towards Nichols Rd and slope. Stovepipe Creek middle of image

Photos 4, 5 and 6 provide a view of the general fuel in the drainage.
Photo 4 is where Stovepipe Creek enters the site, fairly shallow sides, as it continues the channel falls further below grade.

The fuel is fairly light on the slopes with heavier grouping towards the bottom.
Portions have no ground cover, both in the channel bottom and the slope sides.

Any fire in this area would tend to be pushed along the bottom, with winds shearing across the generally flat top of slope areas.

Photo 4
Typical fuel that will remain in drainage area.

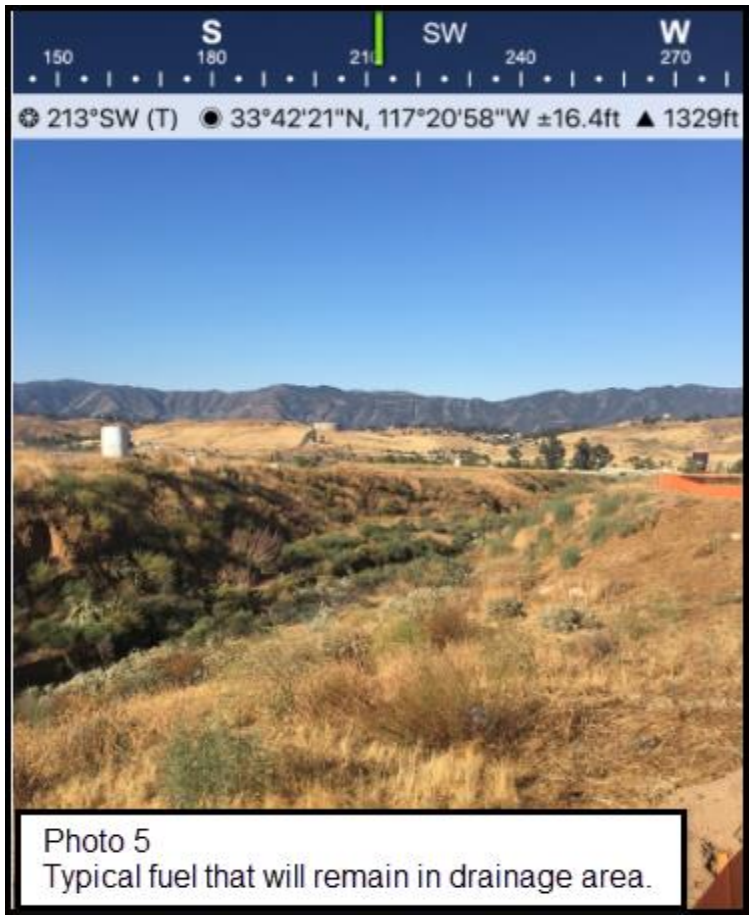


Photo 5
Typical fuel that will remain in drainage area.

Photo 6
Taken near south intersect at PL.

Photo 7
Typical fuel to south of project site around to Nichols Rd.

Any wildfire burning in the undeveloped lands north, northeast, east and south of the proposed project boundary, would create a high wildland fire hazard, putting developed properties at risk. The southern boundary, will have 100 foot of fuel modification and maintenance from the proposed commercial lots to the Creek intersect. On the north the project will be bounded by Nichols Rd. with setback and road width will have 100 feet of distance. The exception will be those lots that border on Stovepipe Creek. Mitigation measures to attain same practical effect are in Section 5.4. Section 2.4 provides details of the Fire Behavior for the Area.

2.2 Climate

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

The most critical weather pattern is a hot, dry offshore wind, typically called a Santa Ana. Such wind conditions are usually associated with strong (>70 MPH), hot, dry winds with very low (<15%) relative humidity. Santa Ana winds originate over the dry desert land and can occur anytime of the year; however, they generally occur in the late fall (September through November). This is also when non-irrigated vegetation is at its lowest moisture content.

The undeveloped land in proximity can contribute to a damaging wildland fire event. Any wind or topography driven wildfire burning under a northeastern (*Santa Ana*) wind pattern through areas to the north and east would create a wildland fire hazard to the proposed project. Wildland fires starting southwest of the proposed structure, on a typical fire day with a southwest wind will likely burn up to the fuel treatment areas and be controlled. Areas that could likely burn south of the project site would be a minimal hazard as an existing structure has adequate fuel treatment and will join the fuel treatment zones.

The typical prevailing summer time 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.

All other (northwest, south, west) 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.

All residential structures in the area are threatened through wind-blown embers. The installation of 'ignition resistant construction' will generally mitigate against a windblown ember threat (see Section 5.5 for a discussion of these features). The goal of this FPP is to prevent the loss of lives, buildings and personal property when wildfires occur. The challenge is using a 'best practices' approach to construction and vegetation management, within a fully functioning mixed chaparral habitat. This goal is accomplished by requiring the home to be built with ignition resistant materials and properly designed and maintained vegetation management treatments that safely mitigate the fire hazard to insignificant levels.

2.3 Predicting Wildland Fire Behavior

The BEHAVE 5.0.5 Fire Behavior Prediction and Fuel Modeling System developed by USDA–Forest Service research scientists Patricia L. Andrews and Collin D. Bevins at the Intermountain Forest Fire Laboratory, Missoula, Montana, is one of the best systematic methods for predicting wildland fire behavior. The BEHAVE fire behavior computer modeling system is utilized by wildland fire experts and managers nationwide. The program projects the expected spotting distance, rate-of-spread and flame lengths with a reasonable degree of certainty for use in Fire Protection Planning purposes. ***FIREWISE* 2000, Inc**. used the BEHAVE 5.0.5 Fire Behavior Prediction Model to make the fire behavior assessments discussed below.

2.4 Wildland Fire Behavior Calculations for the Off-Site Hazardous Vegetative Fuels

Wildland fire behavior calculations have been projected for the hazardous vegetative fuels on the undeveloped areas in proximity to the proposed residence. These projections are based on scenarios that are 'worst case' Riverside County fire weather assumptions in the vicinity of the project area. Historical weather data was obtained from the RAWS (Remote Automatic Weather Station) network stations closest to the project area.

The Tables below provides a base line for a fire start in the fuels surrounding the project site, no wind, rates of spread topographically driven.

Slope area north of Nichols Rd. No wind topographically driven up slope

Fuel Model	Rate of Spread ft/min	Heat per Unit Area Btu/ft2	Flame Length ft	Direction Max ROS deg
sh5	3.6	2023	4.1	350
SCAL15	2.0	1811	2.9	194

Sourthern boundary Grass/Shrub model no wind topographically driven

Surface Rate of Spread (maximum)	18.0	ft/min
Fireline Intensity	173	Btu/ft/s
Flame Length	4.8	ft
Direction of Maximum Spread (from north)	0	deg

A detailed analysis of the Stovepipe Creek area follows the overall site Fire Behavior Runs.

The worst-case scenarios are depicted below in Tables 2.4.1 thru 2.4.3. All tables display the expected Rate of Fire Spread (expressed in ft/min), Spotting Distance (expressed in miles) and Flame Length (expressed in feet) include the calculation inputs used in the BEHAVE program which were obtained from project site observations and fuel moisture levels typically observed during the local fire season.

The tables also show the change in Rate of Fire Spread, Spotting Distance, and Flame Length following the completion of the required Vegetation Management work which is characterized by a Combined Fuel Model [tl6 - Moderate Load Broadleaf Litter 50% and gr1 – Short Sparse Dry Climate Grass 50%].

Table 2.4.1 ***Fire Scenario 1 - Fire Approaching from the South or West*** ***Late Fire Season With 15 MPH South, Southwest and West Wind Conditions***	
Fire Behavior Calculation Input Data • 50 percent slope • 30 mph 20-foot wind speed • 225º wind direction southwest	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture of……...2% * 10-Hour Fuel Moisture of……..…3% * 100-Hour Fuel Moisture of.....……..…..5% * Live Herbaceous Fuel Moisture of…...50% * Live Woody Fuel Moisture of…….....60%
Expected Fire Behavior **Grass/Shrub GS2 with Fuel Bed Depth to 2 feet.**	
Flame Length - 15 feet	
Rate of Spread - 213.2 ft/min	
Fireline Intensity - 2050 btu/ft/s	
Spotting Distance - .6 miles	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model - [tl6 – Moderate Load Broadleaf Litter 50% and gr1 – Short Sparse Dry Climate Grass 50%]**	
Rate of Spread - <1 mi/hr	
Spotting Distance - 0.2 miles	
Flame Length - 5.3 feet	

Table 2.4.2 ***Fire Scenario 2 - Fire Approaching from the North or East*** ***Late Fire Season With 70 MPH North, Northeast and East Wind Conditions***	
Fire Behavior Calculation Input Data • 35 percent slope • 70 mph 20-foot wind speed • 45º wind direction from north	**Anticipated Fuel Moistures** * 1-Hour Fine Fuel Moisture of……...2% * 10-Hour Fuel Moisture of……..…3% * 100-Hour Fuel Moisture of.....……..…..5% * Live Herbaceous Fuel Moisture of…...50% * Live Woody Fuel Moisture of…….....60%
Expected Fire Behavior **SH5 modeled however fuel is not majority of site to north.** **Current fuel load more similar to SCAL15 at 27.4 ft flame lengths**	
Flame Length - 55.2 feet	
Rate of Spread - 1029.6 ft/min	
Fireline Intensity - 35151 btu/ft/s	
Spotting Distance - 3.5 miles	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model - [tl6 – Moderate Load Broadleaf Litter 50% and gr1 – Short Sparse Dry Climate Grass 50%]**	
Rate of Spread - 1 mi/hr	
Spotting Distance - 0.7 miles	
Flame Length - 10.5 feet	

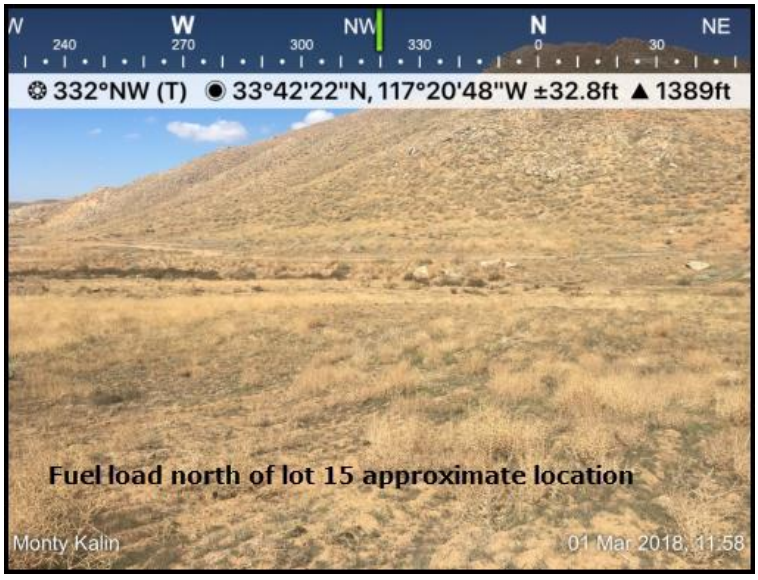
Fire Behavior for the area of Stovepipe Creek. Entire area will be below grade and pad level upon completion of final grade.

Stovepipe Creek fire start with no wind		
Surface Rate of Spread (maximum)	2.1	ft/min
Fireline Intensity	64	Btu/ft/s
Flame Length	3.1	ft
Direction of Maximum Spread (from north)	180	deg

Stovepipe Creek ran as partially sheltered 70mph Off-Shore wind event		
Surface Rate of Spread (maximum)	151.6	ft/min
Fireline Intensity	4575	Btu/ft/s
Flame Length	21.7	ft
Direction of Maximum Spread (from north)	225	deg

Stovepipe Creek ran as partially sheltered 30mph On-Shore wind event. Low humidities and fuel moistures.		
Surface Rate of Spread (maximum)	62.5	ft/min
Fireline Intensity	1886	Btu/ft/s
Flame Length	14.5	ft
Direction of Maximum Spread (from north)	45	deg

Fuel in the location of Lot 15, no CSS, comprised of non-native grasses, native grasses and invasives.



Fire Behavior by location

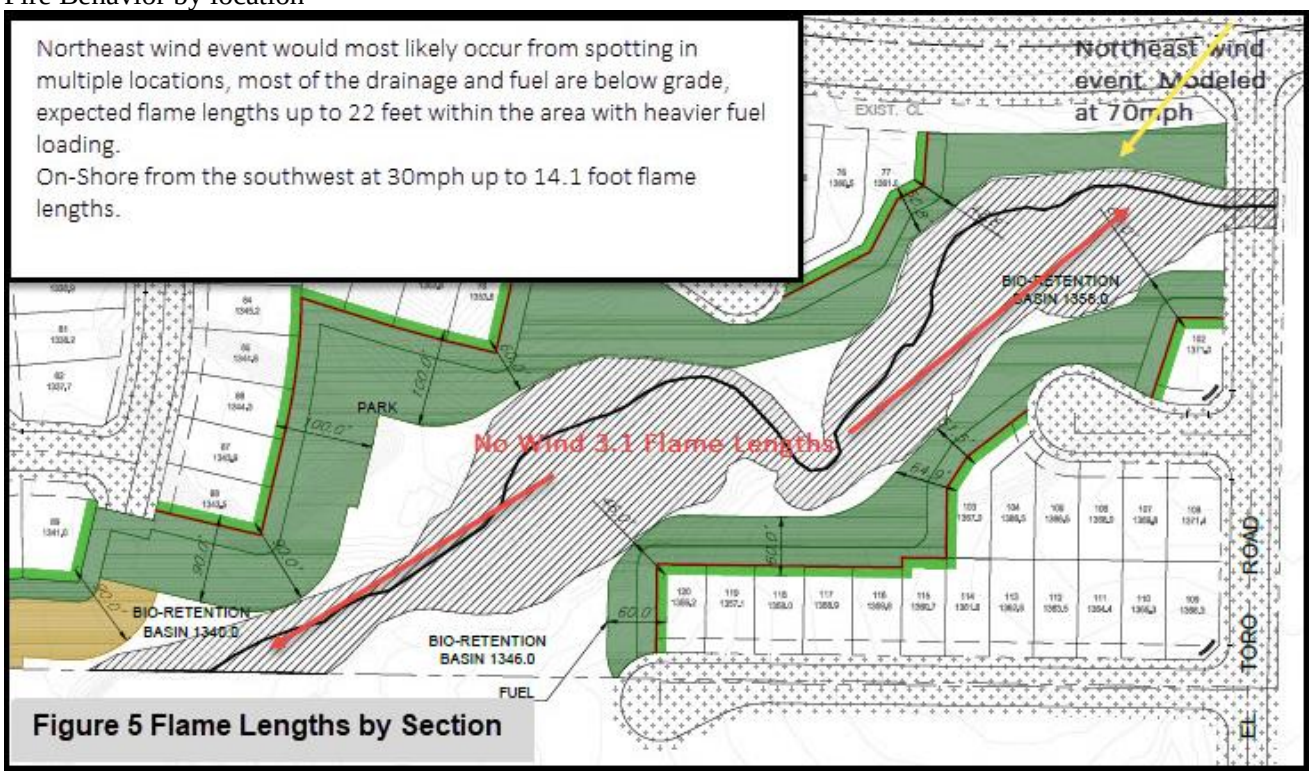


Figure 5 Flame Lengths by Section

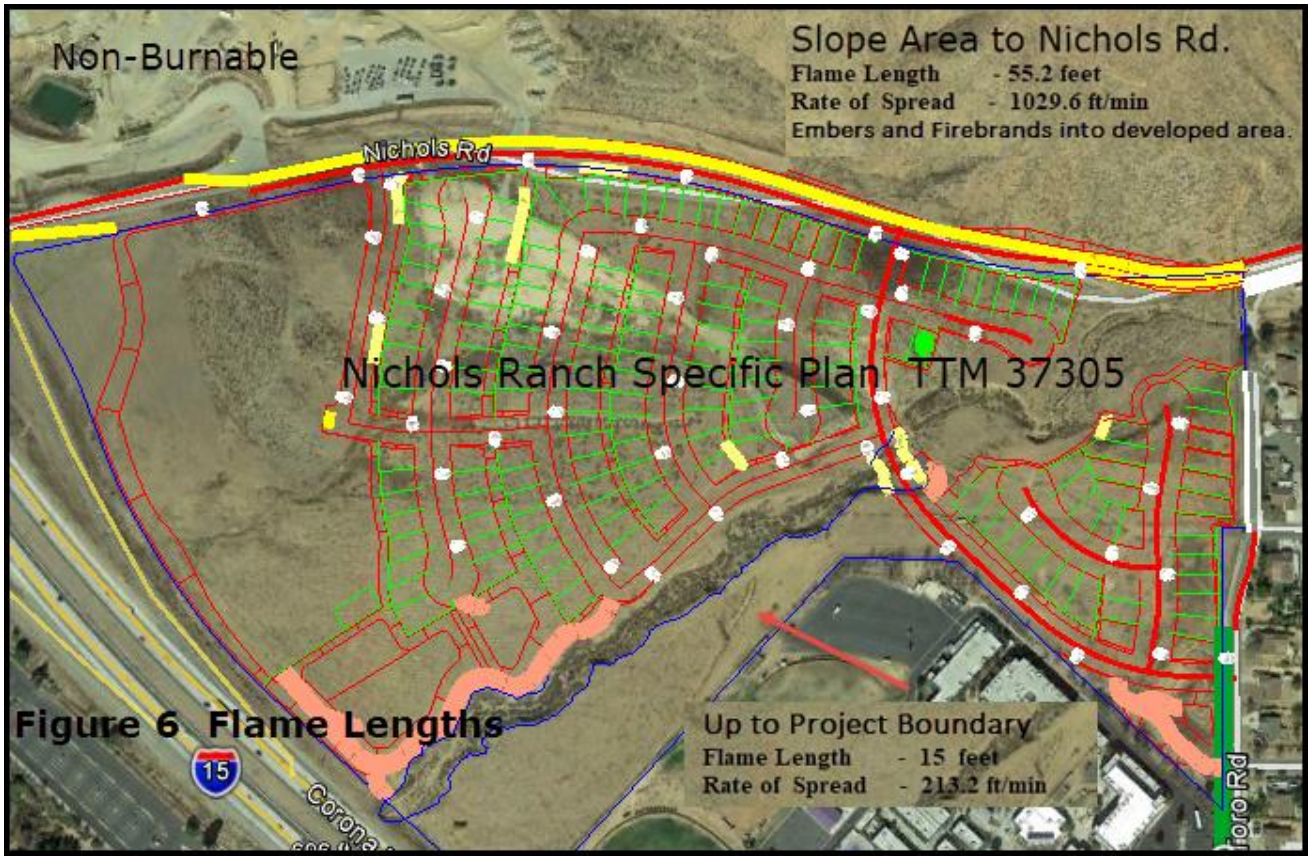
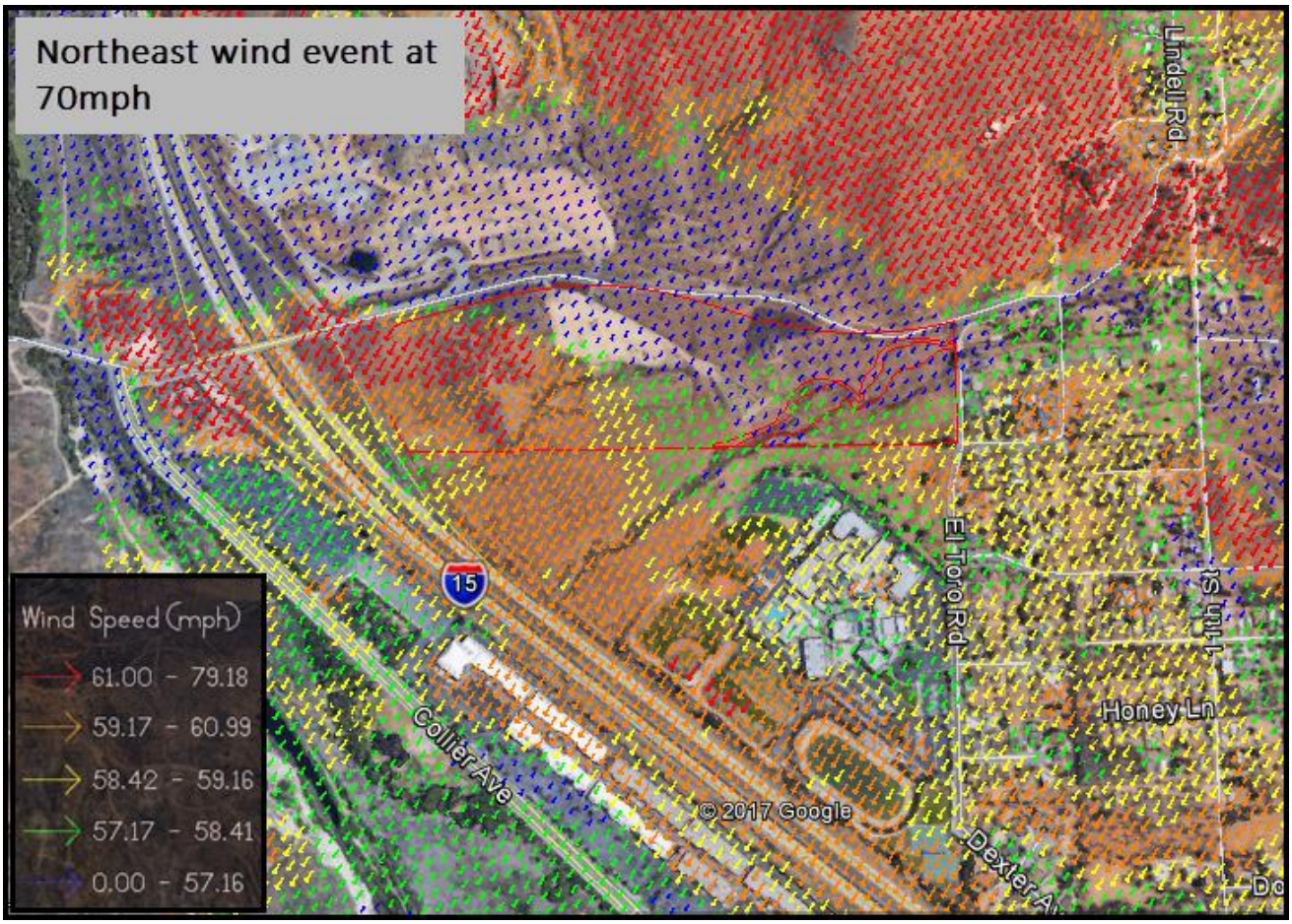
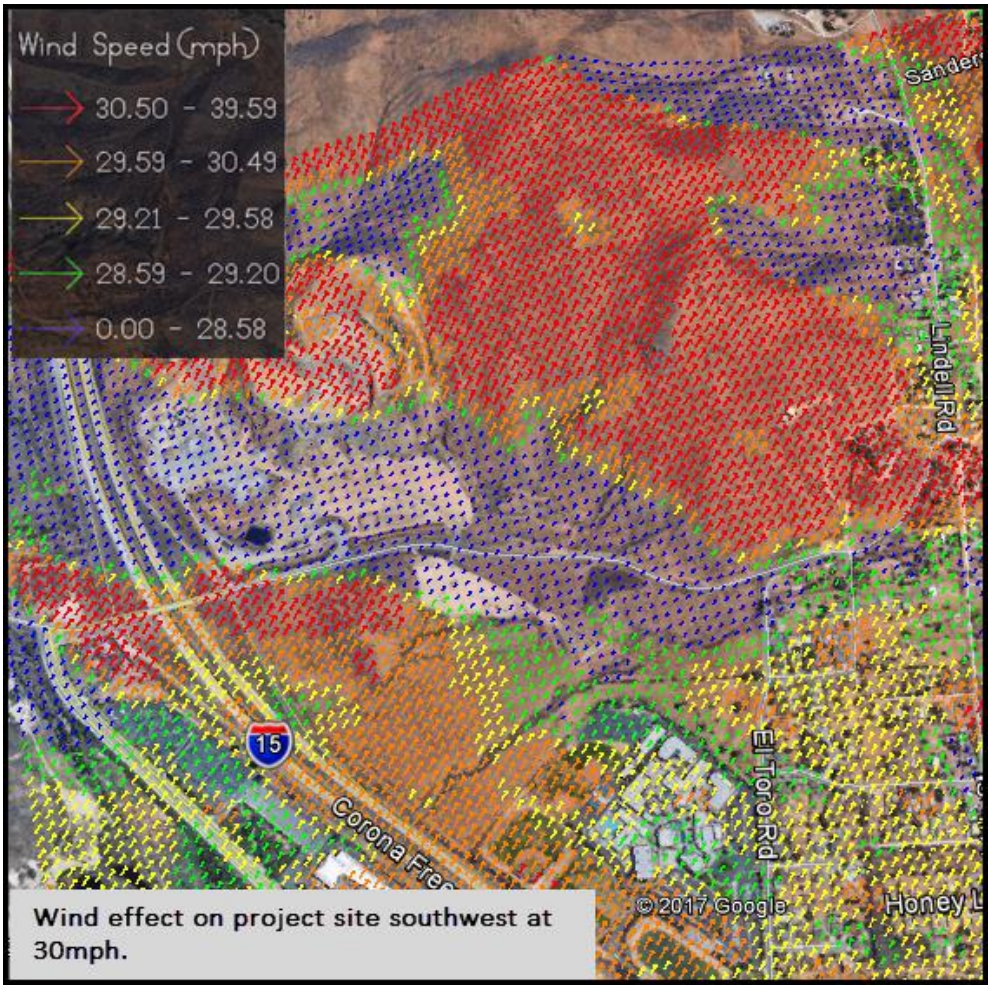


Figure 6 Flame Lengths

Wind Ninja flow across landscape shows sheltering effect to Stovepipe Creek area. Major wind effect to top of slope north of Nichols Rd.



Wind flow across landscape from the southwest, velocities are not increased in the Stovepipe Creek areas.



3.0 ASSESSING STRUCTURE IGINITIONS 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 Behave Plus Fire Behavior Computer Modeling Program does not address wind blown embers or firebrands. However, even though ignition resistant exterior building materials will be used in the construction of Tract 37305 (see APPENDIX 'E' for the description of 'ignition resistive construction'), wind driven embers and radiant heat issues are addressed in this FPP.

3.1 Firebrands

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

Even with non-combustible roofing, firebrands landing on leaves, needles, and other combustibles located on a roof (due to lack of maintenance) can cause structure ignition. Any open windows, doors or other types of

unscreened openings are sources for embers to enter a structure during a wildland fire. If these maintenance issues are addressed on a regular basis, firebrands should not be a concern.

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 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 an example, a blow torch flame typically approaches 2,100 degrees Fahrenheit yet a person can easily pass his/her 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 Jack Cohen of the USDA Forest Service has found that a home's characteristics--its exterior materials and design in relation to the immediate area around a home within 100 feet--principally determine the home ignition potential. He calls the home and its immediate surroundings the home ignition zone. In a study of ignition of wood wallboard, tests by a USDA Forest Service research team described in the Proceedings, 1st International Fire and Materials Conference showed that flame impingement for sufficient length of time (approximately 1 min.) ignites a typical hardboard siding material. Since the requirement in this FPP is for a non-combustible wall or 1-hour fire resistive construction for the exterior portion of a structure, the home's exterior reaching ignition temperature is very unlikely due to either radiant or convective heat.

Fire agencies consider vegetation management as a principal approach to wildland fire hazard reduction. Whenever the flame lengths are within close proximity to the structure envelope and 1-2 minutes in duration or more, and if the setback and modified fuel is equal to or less than the separation of combustible vegetation from a combustible structure, there is a high probability of structure ignition. This is not necessarily from the radiant heat, but from a greater chance of ember intrusion into the structure.
Contact with a fire's convection heat column also may cause ignition but the temperature of the column's gases are generally not hot enough or long enough in duration to sustain the ignition of the structure.

Comparing the expected wildland fire behavior projections in each of the scenarios in Section 2.4 against the required fuel modification zones outlined in Section 5.0 demonstrates substantial reductions in the expected flame length and fireline intensity.

By 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.
- The area surrounding each structure contains an irrigated zone (defensible space) and a thinning zone (low fuel volume buffer strip) between the irrigated zone and the untreated fuels.

The eventual homeowners shall be required to maintain their properties to Zone 1 Vegetation Management standards and shall keep the roofs and rain gutters free of leaves, needles and other combustible debris. All firewood and other combustible materials must be properly stored away from the structures (minimum 30 ft.) so that burning embers falling on or near the structures have no suitable host.

3.3 Fire Resistant Plant Palette

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

year round (refer to APPENDIX 'B' for a list of prohibited plant species). Should any plant inadvertantly appear on both the Recommended and Prohibited Lists, the listing on the Prohibited List shall prevail and it shall be prohibited.

4.0 FIRE DEPARTMENT RESPONSE TIMES

Figure 7 provides the location of the Station 97 of the Riverside County Fire Department, located at 41725 Rosetta Canyon Dr. It would be the most likely resource to respond to TR37305. The second closest is Station 10 located at 410 W Graham Ave, approximately 3.9 miles away.

There is no assurance that the closest fire station, Station #97, will be in its station when a wildfire threatens tract 37305 from an ignition in the adjacent wildland area. Engines may respond from other stations located further away or from other incidents. On high/extreme fire danger days there often may be multiple fire starts and engine companies may be already deployed on other incidents. Therefore ***FIRE*WISE 2000, Inc.** planned projects use *'defensible space'*, ignition resistant building features, and key fuel treatment strategies that enable residents to

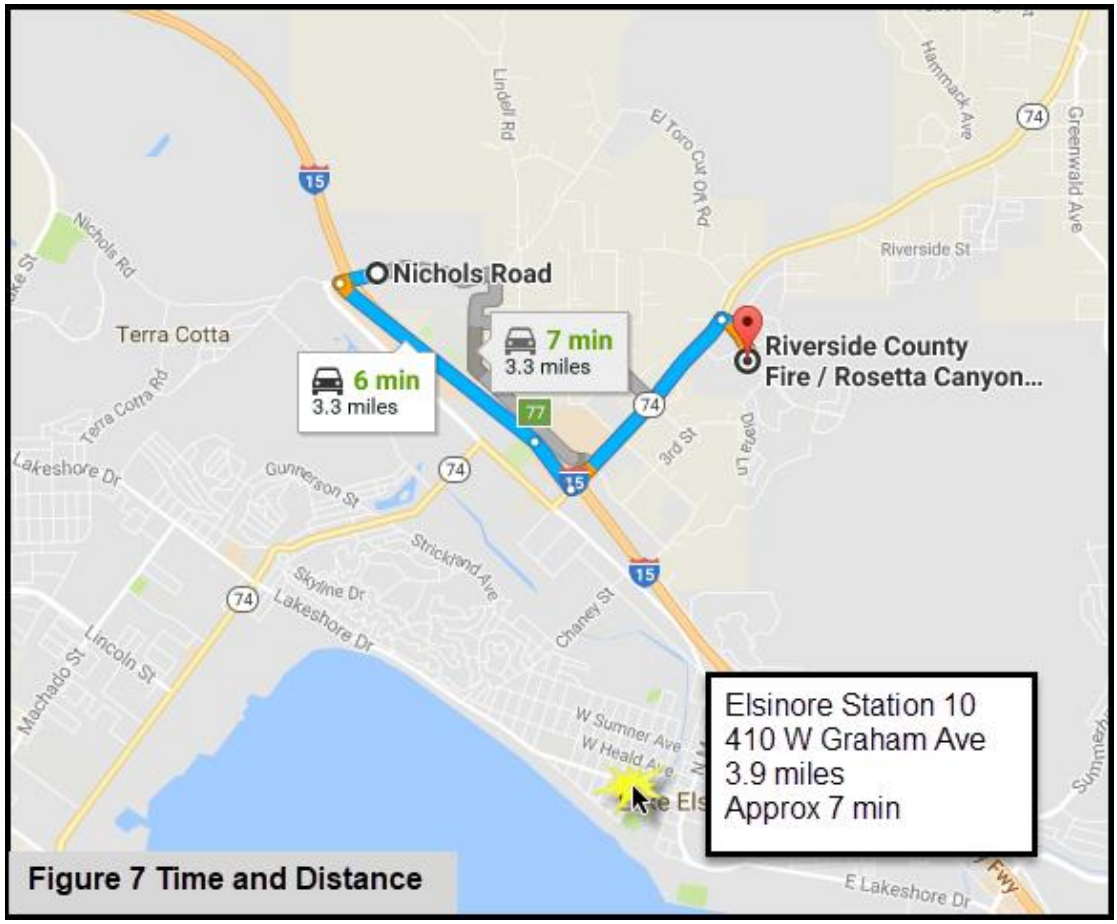


Figure 7 Time and Distance

substantially increase their ability to survive a wildfire on their own and without the loss of their structure. The goal of this FPP therefore is to make the development and its eventual homeowners as safe as possible and able to survive on their own until such time as firefighting equipment arrives and/or residents can be safely evacuated.

5.0 VEGETATION MANAGEMENT ZONE DESCRIPTIONS & REQUIRED TREATMENTS

Below are the descriptions and required treatments for the Vegetation Management Zones. All distances in this report are measured horizontally. These distances are depicted on the attached Fire Protection Plan Exhibit. Zones 1, 2 and 3 together with adjacent roadways, will be sufficient to mitigate for direct flame impingement and the radiant heat effects of a worst-case wildland fire with 40 foot flame lengths.
Section 5.4 provides details of lots that are the exception and are required to have mitigation measures.

5.1 Vegetation Management Zone 1 – *HOMEOWNER MAINTAINED*
(Shown as Light Green on the Fire Protection Plan Exhibit Setback Area)

Defined

Zone 1 Homeowner maintained is commonly called the defensible space zone and shall be free of all combustible construction and materials. It is an irrigated zone surrounding the structure. It is measured from the exterior walls of the structure or from the most distal point of a combustible projection. It provides the best protection against the high radiant heat produced by a wildfire. 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.

Required Landscaping

- Plants in this zone shall 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. Thick or leathery leaf species with high moisture content are the most 'fire resistant'. For proper plant selection refer to APPENDIX 'A' for a list of acceptable or desirable plants and APPENDIX 'B' for the Prohibited Plant list.
- Zone 1 will be cleared of all fire prone and undesirable plant species (see APPENDIX 'B').
- Xeriscape™ designs, where compatible and hardscape such as concrete, rock, pavers, and similar non-combustible features are encouraged to break up fuel continuity within Zone 1.
- Focus should be on approved ground covers and lawns that shall be maintained at a height that does not exceed 4 inches.
- Vegetation and combustible ground covers (mulch, bark, wood chips, etc.) are not permitted within 12 inches of structures.
- Shrubs should be low-growing and well-irrigated and should be selected from the plant list in APPENDIX 'A' or plants approved by the RVCFD. Shrubs shall be single specimens or a grouping not exceeding three plants. Mature height of plants shall not exceed 48 inches. At mature growth, single plants or groupings of plants shall be separated from each other by at least 5 feet. Plants shall not be located under vents or windows or within five feet to either side of a window. Single specimens of plants or a grouping not exceeding three plants are allowed under mature trees.
- Trees shall be single specimens or groupings of not more than three trees selected from the approved plant list. Trees are to be planted such that the mature canopies will be at least 10 feet from the exterior walls of the structure or from the most distal point of a combustible projection, an attached accessory structure, or an accessory structure within 10 feet of a habitable building.
- An automatic irrigation system is required. Areas inside the drip line of native oak trees shall not be irrigated.

Required Maintenance

- The lot shall be maintained year round by the individual property owner within their property boundary (lot lines) as required by this FPP or the RVCFD.
- Sprinkler systems shall be checked weekly to insure proper working order.
- Any dead or dying plant material shall be remove and replaced. Shrubs and trees are to be bi-annually maintained free of dead material.
- Trees shall be maintained such that the branches and limbs closest to the ground are pruned to a height from the ground that is equal to 1/3 the overall height of the tree or six feet from the ground, whichever is higher.

- All trees must be maintained to the current ANSI A300 standards [*Tree, Shrub, and Other Woody Plant Maintenance —Standard Practices (Pruning)]* (see (www.treecareindustry.org/public/gov_standards_a300.htm).

5.2 Vegetation Management Zone 2 – HOA MAINTAINED - *(Shown as Dark Green on the Fire Protection Plan Exhibit)*

Defined

Zone 2 HOA maintained, are areas outside the homeowner parcels. It is an irrigated zone measured outward from the parcel fencing. Dimensions vary, throughout the development. These areas include manufacture slopes and detention basins. These areas as designated on the Fuel Treatment Exhibit shall be irrigated in perpetuity.

Required Landscaping

- Plants in this zone shall 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. Thick or leathery leaf species with high moisture content are the most 'fire resistant'. For proper plant selection refer to APPENDIX 'A' for a list of acceptable or desirable plants and/or APPENDIX 'B' for the Prohibited Plant list. Plants that may appear on both lists will be prohibited.
- Zone 2 will be cleared of all fire prone and undesirable plant species as contained in APPENDIX 'B'.
- Focus should be on approved ground covers and lawns that shall be maintained at a height that does not exceed 18 inches.
- Shrubs should be low-growing and well-irrigated and should be selected from the plant list in APPENDIX 'A' or plants approved by the RVCFD. Shrubs shall be single specimens or a grouping not exceeding three plants. Mature height of plants shall not exceed 48 inches. At mature growth, single plants or groupings of plants shall be separated from each other by at least 5 feet. Single specimens of plants or a grouping not exceeding three plants are allowed near mature trees.
- Trees shall be single specimens or groupings of not more than three trees selected from the approved plant list. Tree canopies shall be separated by 20 feet at maturity. An automatic irrigation system is required. Areas inside the drip line of native oak trees shall not be irrigated. Tree and Shrub Spacing Chart provides guidance for best practice spacing.

Tree & Shrub Spacing Chart		
Trees[a, b]	***Minimum horizontal space From edge of one tree canopy spread (max. 40-ft x 40-ft) to the edge of the next***	
	Slope	*Spacing*
	0% to 50% (2:1)	*10 feet*
	Greater than 50% (2:1)	*30 feet*
Shrubs	***Minimum horizontal space between edges of shrub***	
	Slope	*Spacing*
	0% to 50% (2:1)	*3 times the height of the shrub mass*
	Greater than 50% (2:1)	*6 times the height of the shrub mass*
Vertical Space	***Minimum vertical space between top of shrub and bottom of lower tree branches:*** *3 times the height of the shrub mass or 6 feet, whichever is greater*	

Required Maintenance

- Landscaping shall be maintained year round by the HOA as required by this FPP or the RVCFD.
- Sprinkler systems shall be checked weekly to insure proper working order.
- Any dead or dying plant material shall be removed and replaced. Shrubs and trees are to be bi-annually maintained free of dead material.
- Trees shall be maintained such that the branches and limbs closest to the ground are pruned to a height from the ground that is equal to 1/3 the overall height of the tree or six feet from the ground, whichever is higher.

- All trees must be maintained to the current ANSI A300 standards [*Tree, Shrub, and Other Woody Plant Maintenance —Standard Practices (Pruning)]* (see (www.treecareindustry.org/public/gov_standards_a300.htm).

5.3 Vegetation Management Zone 3 Thinning - HOA MAINTAINED -*(Shown as brown on the Fire Protection Plan Exhibit)*

Defined

Zone 3 is a non-irrigated area south and west of lots 99, 100, 111, 112, and 113.
This area is proposed as WQMP Basins. Proposed plantings will conform to APPENDIX 'A' Acceptable Plant Species.
Yearly maintenance will be required prior to fire season, and shall be kept clear of dead, dying and invasive material. Refer to APPENDIX 'B' Prohibited Plant List for prohibited plants for these areas.
The following image is provided as a conceptual example.

5.4 Special Mitigation Measures

Lots 14, 15, 16, 23, 24, and 35 have the greatest exposure to impacts from a fire in the Stove Pipe Creek area, fuel treatment measures are less than the required 100 feet.
Lot 15 has the least at 35 feet, however there is very lite fuel in the area north and east of the lot.

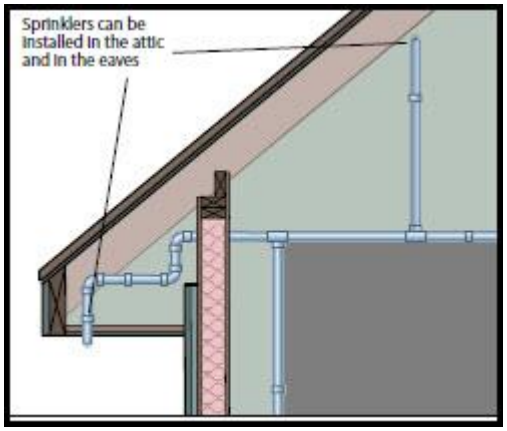
- Lots 168, 113, 35, 14, 15, 16, 23, and 24 have less than 100 feet and shall have installed a 6ft CMU or CMU and glass wall. Location as shown on the Fuel Treatment Exhibit.
- A 6ft solid CMU radiant heat wall will be installed along Nichols Rd to minimize blowing embers into the Stove Pipe Creek area. Location as shown on the Fuel Treatment Exhibit.

Sec 2.4 provides an image of this area.

As mitigation for less than 100 feet of overall fuel treatment the following building enhancements will be required. Refer to Section 2.4 for detailed specific flame lengths for these areas.

- Exterior walls facing the open space shall be one (1) hour fire resistance rated tested in accordance with ASTM E119 or UL263 with one layer of 5/8-inch Type X gypsum sheathing on interior and exterior surfaces to prevent exposure from both sides and shall have no underfloor or attic vent openings. Stucco shall be applied over the gypsum wall assembly.
- Appendages and projections attached to exterior fire-resistive walls, shall be constructed to maintain the same fire-resistant standards as the exterior walls of the structure.
- If the roof profile allows a space between the roof covering and roof decking, the roof area will have one layer of minimum 72-pound (32.4 kg) mineral-surfaced, non-perforated cap sheet complying with ASTM D 3909 installed over the combustible decking.

- Fire sprinklers shall be installed throughout the attics and installed in accordance with manufacturer's instructions, the referenced standard should be followed as a minimum. Fire sprinklers will require a four (4) head calculation for the sprinkler design. The four-head calculation must have a minimum .05 density design, QR and intermediate temperature heads; the heads may be of a small orifice type such as 3/8 or 7/16. Listed domestic demand shutoff valves may be used to try to minimize upgrading meter sizes where possible.
- Lots 14, 15, 16, 23 and 24 within five (5) feet of the structure envelope no combustible landscaping will be allowed, no trees will be allowed on the parcel. The exception will be the front of the structure facing the access.
- Lot 14, 15, 16, 23 and 24 have the greatest exposure to an off-shore wind driven fire and shall have fire sprinklers extended to the under-eave areas installed in accordance with manufacturer's instructions and acceptable to Riverside County/Lake Elsinore Fire Department standards.. The heads should be installed at equal distance on eave areas facing open space. This will protect the structure envelope in future years against burning combustible material near and around structure envelope.



5.5 Construction Standards

All structures within the development site shall meet all wildland/interface standards to the satisfaction of the RVCFD. Design and construction shall meet the requirements listed in the 2016 Edition of the Fire and Building Codes, with special adherence to Chapter 7A, and the 2016 Edition of the California Residential Code section R337, with other local amendments/ordnances adopted by RVCFD. Other applicable codes include the 2013 International Wildland-Urban Interface Code (IWUIC). For a description of the current construction requirements as of the date of this report (see APPENDIX 'E').

All accessory structures such as decks, balconies, patios, covers, gazebos and fences shall be built from non-combustible or ignition resistant materials. The homeowner(s) are not restricted from having concrete patios, concrete walkways or swimming pools within the Vegetation Management Zones in compliance with other codes. Refer to APPENDIX 'D' for photos and descriptions of non-combustible decks, patio covers, and railings for these accessory structures. Construction or building permits shall not be issued until the fire code official inspects and approves required vegetation clearance, fire apparatus access and water supply for the construction site. The issuance of building permits with regard to these requirements shall be in accordance with RVCFD. Prior to the delivery of combustible building construction materials to the project site the following conditions shall be completed to the satisfaction of the RVCFD:

- All wet and dry utilities shall be installed and approved by the appropriate inspecting department or agency.
- Clearance of Zone 1, 2 and 3 vegetation management shall be provided prior to combustible material arriving on the site and shall be maintained throughout the duration of construction. Fire code officials may require additional vegetation management and/or defensible space when warranted.
- Additional requirements as listed in the development will be adhere to:

a. Mobile stationary or portable powered operated equipment in the HFA shall not be used without the RVCFD written approval. Specific fire protection measures that may be required to mitigate the hazard include, but are not limited to:
    1. A standby water tender, equipped with a pump, fire hose and nozzle.
    2. Pre-wetting of the site to avoid the production of sparks between blades, tracks and rocks.
    3. Conducting a fire watch for a minimum of one-hour following the cessation of operations each day
    4. For welding cutting or grinding work, clear away all combustible material from the area around such operations for a minimum distance of 10 feet. A hot-work permit may be required prior to commencing work.
    5. Maintain a serviceable round point shovel with an overall length of not less than forty-six (46) inches and a five (5) gallon backpack water pump-type fire extinguisher fully equipped and ready for use at the immediate area during the operation.

6.0 INFRASTRUCTURE

6.1 Water Supply

The Developments water supply will be provided by the Elsinore Valley Municipal Water District (EVMWD). Fire flow requirements shall be provided by Riverside County Fire Department. All homes will require NFPA 13D Residential Sprinklers, engineered to the satisfaction of RVCFD. Those lot listed in Section 5, requiring special mitigation measures shall have under eave sprinklers on the exterior of the structure.

6.2 Access Roads/Driveways and Gates

Fire access roads shall meet the requirements of the RVCFD, and shall be a paved surface capable of supporting loads of 80,000 lbs gross vehicle weight. Access to all portions of the building must be within 150 feet of the available fire deparment access. Fire access roads shall be maintained for clear access of emergency vehicles. The proposed development requires primary and secondary access at the time of construction.

Any gates crossing fire access into the development must be installed to Riverside County/Lake Elsinore Fire Department standards and shall be approved prior to fabrication and installation.
Gates crossing access into the development must have a "Knox" override key switch installed outside the gate in an approved, readily visible, and unobstructed location to provide emergency access, in addition gates shall be equipped with an infrared gate opening device in accordance with Riverside County/Lake Elsinore standards

7.0 Homeowners Association Information

This plan and the related Fuel Treatment Exhibit shall be referenced in any HOA CC&R documents that are prepared.

7.1 Homeowners Education

The homeowner, by reviewing this Fire Protection Plan, shall be aware of the herein described fire protection measures; the types of non-combustible construction; and the plant materials that are allowed within their lot boundary. Of importance are APPENDICES 'A', 'B', and 'D' of this plan, which provide guidance in the types of plants that are allowed to be established in landscaped areas and appropriate construction within Vegetation Management Zones. Plant selection is critical as embers often travel over a mile during Santa Ana wind events. Should a wildland fire occur within the geographical area, the homeowner should have an understanding of the 'Ready, Set, Go' procedures recommended by the Riverside County Fire Department.

7.2 APPENDIX 'E' provides details of enhanced construction features for homes constructed in a Very High Fire Severity Zone.

8.0 FIRE PROTECTION PLAN EXHIBIT

The FIRE PROTECTION PLAN EXHIBIT, APPENDIX 'F' depicts the location of all proposed vegetation management treatment locations as well as fire access roads, property lines, proposed hydrant locations and other pertinent information.

APPENDICES

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APPENDIX ‘A’

Approved Plant List for the High Fire Hazard Areas

Plant List for APPENDIX ‘A-1’

Plant Material ***Botanical Name***	***Common Name***	***Sunset Zone***
TREES		
Aesculus californica	California Buckeye	3-10, 14-24
Agonis flexuosa	Peppermint Tree	15-17, 20-24
Albizia julibrissin	Silk Tree	4-23
Arbutus x. ‘Marina’	Marina Strawberry Tree	
Brachychiton populneus	Kurrajong	
Callistemon citrinus	Lemon Bottlebrush	8, 9, 12-24
Cassia surattensis	Yellow Cassia	19-24
Chamaerops humilis	Mediterranean Fan Palm	4-24
Chilopsis linearis	Desert Willow	3b, 7-14, 18-23
Chitalpa linearis	Chitalpa	
Chitalpa tashkentensis	Chitalpa	3-24
Fraxinus greggii	Little Leaf Ash	10-13
Fraxinus o. 'Raywood'	Raywood Ash	2b-9, 12-24
Fraxinus velutina	Arizona Ash	3b-24
Geijera parviflora	Australian Willow	8, 9, 12-24
Ginkgo biloba	Saratoga	
Gleditsia triacanthos or similar species	Honey Locust	1-16, 18-20
Jacaranda mimosifolia	Jacaranda	12, 13, 15-24
Koelreuteria bipinatta	Chinese Flame Tree	8-24
Koelreuteria paniculata	Golden Rain Tree	A2, 2-24
Lagerstroemia indica or ‘Muskogee’	Crape Myrtle	7-10, 12-14, 18-21
Magnolia grandiflora	Russet	
Olea europaea 'Swan Hill'	Fruitless Olive	8, 9, 11-24
Parkinsonia floridum (Cercicium floridum)	Blue Palo Verde	8-14, 18-20
Parkinsonia microphyllum (C. microphyllum)	Little Leaf Palo Verde	8-14, 18-20
Parkinsonia praecox (Cercidum praecox)	Sonoran Palo Verde	12, 13, 18-20
Phoenix dactylifera	Date Palm	8, 9, 11-24
Phoenix roebelenii	Pigmy Date Palm	
Pittosporum phyloraeoides	Willow Pittosporum	8, 9, 12-24
Platanus acerifolia 'columbia'	London Plane Tree	

Platanus racemosa	California Sycamore	
Platanus x. acerifolia 'Bloodgood'	London Plane Tree	
Platanus wrightii	Arizona Sycamore	8-12
Podocarpus gracilior (Afrocarpus gracilior)	Fern Pine	8, 9, 13-24
Podocarpus macrophyllus	Yew Pine	4-9, 12-24
Prosopis alba	Argentine Mesquite	10-13, 18-24
Prosopis chilensis	Chilean Mesquite	10-13
Prununs cerasifera 'Atropurpurea'	Purple Leaf Plum	
Quercus agrifolia	Coast Live Oak	
Quercus chrysolepis	Canyon Live Oak	3-11, 14-24
Quercus suber	Cork Oak	
Quercus ilex	Holly Oak	4-24
Quercux kelloggii	California Black Oak	6-7, 9, 14-21
Quercus virginiana	Southern Live Oak	4-24
Quercus wislizeni	Interior Live Oak	7-9, 14-16, 18-21
Rhus lancea	African Sumac	
Salix gooddingii	Black Willow, Goodding's Willow	1-10, 16-24, 26***
Salix laevigata	Red Willow	1-10, 16-24, 26***
Salix lasiolepis	Arroyo Willow	1-10, 16-24, 26***
Schinus molle	California Pepper Tree	
Tristania conferta	Brisbane Box	
Ulmus parvifolia	Chinese Elm	3-24
SHRUBS		
Acacia redolens 'Lowboy'	Prostrate Acacia	
Arctostaphylos densiflora	Sonoma Manzanita	7-9, 14-21
Agapanthus africanus 'Peter Pan'	Lily of the Nile	
Abelia x. grandiflora	Glossy Abelia	
Buxus microphylla japonica	Japanese Boxwood	3b-24
Caesalpinia gilliesii	Desert Bird of Paradise	8-16, 18-24
Caesalpinia mexicana	Mexican Poinciana	12-16, 18-24
Calliandra californica	Baja Fairy Duster	10-24
Calliandra eriophylla	Fairy Duster	10-24
Calliandra inaequilatera	Red/Pink Powder Puff	

Callistemon viminalis 'Little John'	Weeping Bottlebrush	6-9, 12-24
Cistus x pulverulentus 'Sunset' or similiar	Magenta Rockrose	6-9, 14-24
Convolvulus mauritanicus (C. sasbatius)	Ground Morning Glory	4-9, 12-24
Cotoneaster adpressus praecox	Creeping Cotoneaster	2-24
Dendromecon harfordii	Island Bush Poppy	7-9, 14-24
Dietes x. Nola Alba	African Iris	
Diosma pulchrum	Breath of Heaven	7-9,14-24
Echium fastuosum	Pride of Madeira	14-24
Elaeagnus pungens	Fruitland Silverberry	
Encelia farinosa	Brittlebush	8-16, 18-24
Eschscholzia minutiflora	Pigmy Poppy	
Euryops pectinatus	Shrub Daisy	8, 9, 12-24
Grevellia 'Noellii'	Noel's Grevellia	8, 9, 12-24
Hakea laurina	Sea Urchin Tree	9, 12-17, 19-24
Hebe 'Veronica Lake'	Veronica Lake Hebe	14-24
Hesperoyucca whipplei	Chaparral Yucca	
Heteromeles arbutifolia	Tyon Native Shrub	
Hemerocallis x.	Day Lilly	
Heuchera sanguinea	Coral Bells	A1-A3, 1-11, 14-24
Ilex cornuta 'Burfordii'	Burford Holly	3-24
Ilex vomitoria	Yaupon	3-9, 11-24
Justicia californica	Chuparosa	10-14, 18-24
Justicia spicigera	Mexican Honeysuckle	12-24
Lavatera assurgentiflora	Tree Mallow	14-24
Lavatera bicolor (L. maritima)	Calironia Tree Mallow	6-9, 12-24
Leptospermum scoparium spp.	New Zealand Tea Tree	14-24
Lobelia laxiflora	Mexican Bush Lobelia	7-9, 12-24
Lonicera nitida	Box Honeysuckle	4-9, 14-24
Malosma laurina	Laurel Sumac	
Myrica californica	Pacific Wax Myrtle	4-9, 14-24
Myrsine africana	African Boxwood	8, 9, 14-24
Myrtus communis	Common Myrtle	8-24
Nandina domestica species	Heavenly Bamboo	4-24
Phlomis fruticosa	Jerusalem Sage	3b-24
Photinia serratifolia (P. serrulata)	Chinese Photinia	4-16, 18-22

Pittosporum tobira and hybrids	Tobira / Japanese Mock Orange	8-24
Potentilla gracilis (P. fruticosa)	Cinquefoil	A1-A3, 1-11, 14-21
Punica granatum 'Nana'	Dwarf Pomegranate	5-24, H1
Rhaphiolepis indica ‘Springtime’ ‘Ballerina’	Pink Lady	
Rosa banksiae	Lady Bank's Rose	4-24
Rosa floribunda ‘Iceberg’	Korbin	
Rosmarinus officianalis	Prostrate Rosemary	
Ruellia californica	Sonoran Desert Ruellia	12, 13
Russelia equisetiformis	Coral Fountain	14, 19-24
Salvia microphylla	Blackcurrant sage	
Santolina rosmarinifolia (S. virens)	NCN	3-9, 14-24
Senna spp.	Cassia/Senna	8, 9, 12-16, 18-23
Solanum rantonnetii (Lycianthus rant.)	Blue Potato Bush	12, 13, 15-24
Sollya heterophylla	Austrailian Bluebell Creeper	8, 9, 14-24
Sophora arizonica	Arizona Sophora	10-13
Sophora secundiflora	Texas Mountain Laurel	8-16, 18-24
Sphaeralacea ambigua	Desert Mallow	3, 7-24
Tagetes lemmonii	Mountain Marigold	8-10, 12-24
Viburnum spp	Viburnum	5-10, 12, 14-24
Xylosma congestum	Compact Shiny Xylosma	
Westringia longifolia	Coast Rosemary	8, 9, 14-24

ACCENT SHRUBS and GRASSES		
Bouteloua gracilis	Blue Grama Grass	1-3, 7-11, 14, 18-21
Carex pansa	Sand Dune Sedge	varies per species
Carex tumulicola	Berkeley Sedge	
Cephalocerus spp.	Old Man Cactus	13, 21-24
Chamaerops humilis	Mediterranean Fan Palm	4-24
Chondropetalum tectorum	Cape Rush	8, 9, 14-24
Cistus x pulverulentus 'Sunset'	Magenta Rockrose	6-9, 14-24
Dasylirion species	Desert Spoon	10-24
Deschampsia caespitosa	Tufted Hair Grass	2-24
Dietes bicolor	Fortnight Lily	8, 9, 12-24

Echium fastuosum	Pride of Madeira	14-24
Elymus glaucus	Blue Wildrye	
Esposta lantana	Peruvian Old Man Cactus	12-24
Ferocactus spp.	Barrel Cactus	8-24
Festuca (ovina) glauca	Blue Fescue	1-24
Festuca californica	California Fescue	
Festuca idahoensis	Fescue	1-10, 14-24
Festuca mairei	Atlas Fescue	
Festuca rubra	Red Fescue	
Fouquieria splendens	Ocotillo	10-13, 18-20
Helictotrichon sempervirens	Blue Oat Grass	1-12, 14-24
Hemerocallis hybrids	Day Lily	1-24, H1, H2
Hesperaloe funifera	Coahuilan Hesperaloe	12, 13
Iris douglasiana	Douglas Iris	4-9, 14-24
Juncus patens	California Gray Rush	4-9, 14-24
Justicia californica	Chuparosa	10-14, 18-24
Leymus triticoides	Creeping Wild Rye	7-12, 14-24
Liriope spp.	Lilyturf	2B-10, 14-24
Miscanthus sinensis	Japanese Silver Grass	2-24
Miscanthus transmorrisonensis	Evergreen Miscanthus	2-24
Muhlenbergia spp.	Pink Muhly (Hairy awn muhly)	4-24
Nolina species	Grass Tree, Nolina	varies per species
Pachycereus marginatus	Organ Pipe Cactus	varies per species
Scirpus cernuus	Fiber Optics Plant	7-24
Scirpus maritimus	Bulrush	7-24
Senecio cineraria	Dusty Miller	4-24, H1
Sisyrinchium californicum	Yellow-eyed Grass	4-9, 14-24
Spartina pectinata	Praire Cord Grass	1-9, 14-24
Typha spp.	Cattail	
GROUNDCOVER		
Acacia redolens ‘Lowboy’	Prostrate Acacia	
Aptenia cordifolia	Red Apple	

Arctostaphylos 'Emerald Carpet'	Emerald Carpet Manzanita	6-9, 14-24
Arctostaphylos 'Pacific Mist'	Pacific Mist Manzanita	7-9, 14-24
Baccharis 'Centennial'	Centennial Baccharis	7-24
Calystegia macrocarpa	Morning Glory	7-9, 14-24
Cephalophyllum 'Red Spike'	Red Spike Ice Plant	8, 9, 11-24
Convolvulus sabatius	Ground Morning Glory	7-9, 14-24
Dalea capitata 'Sierra Gold'	Sierra Gold Dalea	10-13
Dalea greggii	Trailing Indigo Bush	10-13
Erigeron glaucus	Beach Aster	4-6, 15-17, 22-24
Isotoma fluviatillis	Blue Star Creeper	
Mahonia repens	Creeping Mahonia	2b-9, 14-24
Muehlenbeckia axillaris	Creeping Wire Vine	
Plumbago capensis	Royal Cape Plumbago	
Oenothera caespitosa	White Evening Primrose	1-3, 7-14, 18-21
Oenothera stubbei	Baja Evening Primrose	10-14, 18-24
Rosmarinus officnalis	‘Prostratus’	
Thymus praecox	Creeping Tyme	
Trachelospermum jasminoides	Star Jasmine	
Veronica pectinata rubra	Wooly Speedwell	

VINES		
Campsis radicans	Common Trumpet Creeper	1-21
Cissus spp.	Grape Ivy	16-24
Clematis armandii	Evergreen Clematis	4-9, 12-24
Clematis texensis	Scarlet Clematis	2b-11, 14-24
Ficus pumila	Creeping Fig	8-24
Gelsemium sempervirens	Cariolina Jasmine	4-24
Lonicera hildebrandiana	Giant Burmese Honeysuckle	9, 14-17, 19-24
Lonicera sempervirens	Trumpet Honeysuckle	2-24
Macfadyena unguis-cati	Cat's Claw Vine	8-24
Pandorea jasminoides	Bower Vine	16-24
Parthenocissus tricuspidata	Boston Ivy	1-24
Rosa banksiae	Lady Bank's Rose	4-24
Vitis californica	California Wild Grape	4-24

Wisteria spp.	Wisteria	2-24

TURF		
Acorus aurea	Sweet Flag	1-3,10,11
Agrostis pallens	Bent Grass	
Bouteloua gracilis	Blue Grama	
Buchloe dactyloides	UC Verde' Buffalograss	1-3,10,11
Bermuda	Hybrid Lawn	
Carex praegracilis	Meadow sedge	4-24
Carex velebit humilis	Velebit Sedge Grass	4-24
Festuca arundinacea 'Marathon'	Tall Fescue	
Paspalum vaginatum	Seashore Paspalum	17, 24, H2

APPENDIX ‘B’
PROHIBITED PLANT SPECIES

APPENDIX 'B'

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

The following species are highly flammable and should be avoided when planting within the first 50 feet adjacent to a structure. The plants listed below are more susceptible to burning, due to rough or peeling bark, production of large amounts of litter, vegetation that contains oils, resin, wax, or pitch, large amounts of dead material in the plant, or plantings with a high dead to live fuel ratio.

BOTANICAL NAME	COMMON NAME
Abies species	Fir Trees
Acacia species	Acacia (trees, shrubs, groundcovers)
Adenostoma sparsifolium	Red Shanks
fasciculatum	Chamise
	Juniper Myrtle
*Anthemis cotula***	Mayweed, Stinking Chamolile
Araucaria species	Monkey Puzzle, Norfolk Island Pine
Arctostaphylos species	Manzanita
Artemesia californica	California Sagebrush
donax	Giant Cane
Bambusa species	Bamboo
Brassica species	Mustard
Callistemon species	Bottlebrush
	Incense Cedar
Cardaria draba	Hoary Cress, Perennial Peppergrass
Ceanothus species	Ceanothus
Cedrus species	Cedar
	False Cypress
species	Camphor Tree
	Wild Artichoke
*Canadensis****	Horseweed
	Prostrate Coprosma
selloana	Pampas Grass
lacteus	Cotoneaster
Cryptomeria japonica	Japanese Cryptomeria
Cupressocyparis leylandii	Leylandii Cypress
forbesii	Tecate Cypress
glabra	Arizona Cypress
macrocarpa	Monterey Cypress
sempervirens	Italian Cypress
*cardunculus****	Artichoke Thistle
Cytisus species	Scotch Broom, French Broom,etc.

Dodonea viscosa	Hopseed Bush
Elaeagnus angustifolia	Russian Olive *Elaeagnus*
pungens	Silverberry *Eriogonum*
fasciculatum	Common Buckwheat *Eucalyptus*
species	Eucalyptus
*Gensita species****	Broom
Heterotheca grandiflora	Telegraph Plant *Jubaea*
chilensis	Chilean Wine Palm *Juniperus*
species	Junipers
*Lactuca serriola****	Prickly Lettuce
Larix species	Larch
Lonicera japonica	Japanese Honeysuckle *Miscanthus*
species	Eulalia Grass *Muehlenbergia*
species	Deer Grass
Nicotiana species	Tree Tobacco
Palmae species	Palms
Pennisetum setaceum	Fountain Grass
Picea species	Spruce Trees *Pickeringia*
Montana	Chaparral Pea
Pinus species	Pines *Podocarpus species*
	Fern Pine *Pseudotsuga*
menziesii	Douglas Fir *Ricinus*
communis	Castor Bean *Rosmarinus*
species	Rosemary
*Salsola australis****	Russian Thistle, Tumbleweed
Salvia species	Sage
Schinus molle	California Pepper
Schinus terebinthifolius	Brazilian Pepper *Silybum*
*marianum****	Milk Thistle *Spartium*
junceum	Spanish Broom *Tamarix*
species	Tamarisk *Taxodium species*
	Cypress
Taxus species	Yew
Thuja species	Arborvitae *Trachycarpus fortunei*
	Windmill Palm *Tsuga species*
_____	Hemlock
Ulex europea	Gorse
*Urtica urens****	Burning Nettle
Washingtonia species	California/Mexican Fan Palm

*** Highly Invasive

Others - Other plants may be considered to be undesirable because of their ability to naturalize and become a pest. These types of plants should be avoided, especially in sensitive riparian or coastal areas where they could become established and compete with native vegetation.
Plants should fit the location and situation.
Care should be taken to avoid erosion problems created or exacerbated by total vegetation removal. In areas where target species comprise the total vegetation, partial removal is recommended, with replacement planting using desirable species as the long range goal.

APPENDIX 'C'
REFERENCE MATERIAL

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

3. *BEHAVEPlus Fire Modeling System, Version 5.0.0* General Technical Report RMRS-GRT-106WWW Revised. June 2008. Patricia L. Andrews, Collin D. Bevins and Robert C. Seli. United States Department of Agriculture - Forest Service, Rocky Mountain Research Station, Missoula, Montana.

4. *BEHAVEPlus Fire Modeling System, Version 5.0 User's Guide.* General Technical Report RMRS-GRT-106WWW Revised. July, 2009. Patricia L. Andrews, Collin D. Bevins, Robert C. Seli. United States Department of Agriculture - Forest Service, Rocky Mountain Research Station, Missoula, Montana.

5. California Code of Regulations, Title 14, section 1280; California Public Resources Codes sections 4201 through 4204

6. California Government Code, sections 51175 through 51189

7. 2016 Fire Code portion of the CBSC, including appendices to Chapters 1 & 4 and appendices B, F & H

8. The 2016 California Fire Code with and adopted Local Amendments.

9. The 2016 California Residential Code, Section R337.

10. Chapter 7A-California of the 2016 Building Code

11. National Fire Protection Association - NFPA 13 Standard for the Installation of Sprinkler Systems in One – and Two-Family Dwellings and Manufactured Homes, 13-R &13-D, 2013 Editions

12. National Fire Protection Association - NFPA 1144 *Standard for Reducing Structure Ignition Hazards from Wildfire (*2013).

13. National Fire Protection Association - NFPA 1142, 2012 Edition. Table C.11 (b) Time-Distance Table Using an Average Speed of 35 mph

14. *The California State and Local Responsibility Area Fire Hazard Severity Zone Map – Fire and Resource Assessment Program of CAL FIRE*

15. Riverside County Ordnance 787.

16. Riverside County Ordnance 460.

18. 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 ‘D’
NON-COMBUSTIBLE AND FIRE RESISTIVE BUILDING MATERIALS

APPENDIX 'D'

Prior to selection of a non-combustible approve material for your specific design or purpose it is suggested that you first search the Office of the State Fire Marshal web site http://osfm.fire.ca.gov/licensinglistings/licenselisting_bml_searchcotest.php. Navigate to DECKING FOR WILDLAND URBAN INTERFACE (W.U.I) or search by specific Company. If your material is approved, then check with your local jurisdiction to see if they also have it on an approved list.

The following examples of non-combustible and fire resistant building materials may be used for balconies, carports decks, patio covers and floors.

I. NON-COMBUSTIBLE HEAVY GAGE ALUMINUM MATERIALS –

Metals USA Building Products Group - Ultra-Lattice

Ultra-Lattice Attached Patio Cover

Ultra-Lattice Attached Patio Cover

Ultra-Lattice Stand Alone Shade Cover

Ultra-Lattice Vs. Wood

II. FRX Exterior Fire-Retardant Treated (FRT) Wood

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

COMMON APPLICATIONS

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

TYPICAL EXTERIOR USES

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

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

Trex Accents Fire Defense Decking

The perfect blend of beauty and brawn.

Trex's #1 selling platform, Trex Accents®, exceeds the strict fire regulations set by the State of California and San Diego County.

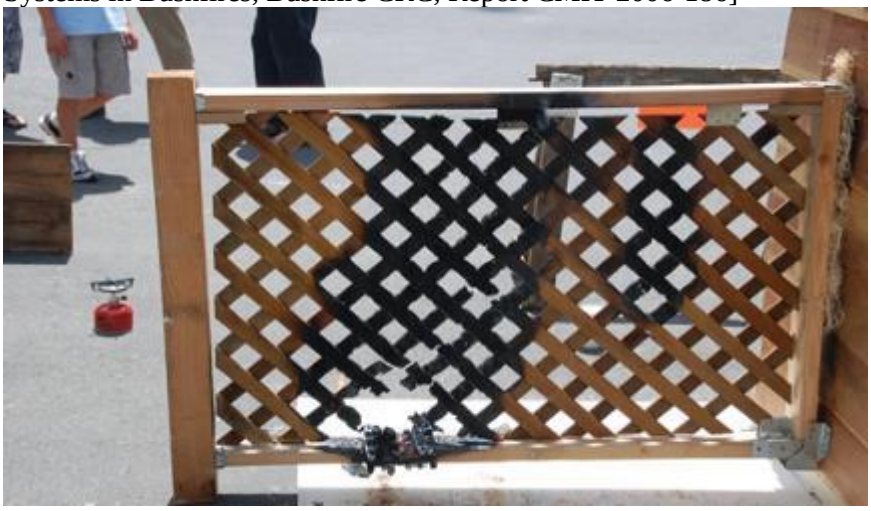
- Offers superior safety performance:
  - Exceeds ASTM E84 Class B Flame Spread.
  - Exceeds 12-7A-4 Part A (underflame) and Part B (Burning Brand).
- Self-extinguishing even under extreme fire exposure.
- Approved for use by the California State Fire Marshal's Office and San Diego County. Read the California Department of Forestry and Fire Protection, Office of the State Fire Marshal

III. TREX COMPANY, INC.

IV. SOLID "WOOD" DECKING (refer to SFM website or request additional information from local jurisdiction)

V. VINYL FENCE (not included in Chapter 7A) should the project use Vinyl Fencing the following reference is provided.
Source: http://firecenterbeta.berkeley.edu/bwmg/attachments-1.html

Depending on material and location, fencing can increase or decrease the vulnerability of a building to wildfire. A solid perimeter fence made of noncombustible materials (such as steel or concrete) has been shown to be an effective barrier against a radiant energy exposure from the fire front. Even a wood plank fence, if a high density species is selected and the boards are closely spaced, can provide some protection to the building from a purely radiant exposure. Depending on the pre-fire exposure, however, vegetative debris at the base of a combustible fence could result in ignition, as would direct flame contact.
[Leonard, J. et al. 2006. Research and Investigation into the Performance of Residential Boundary Fencing Systems in Bushfires, Bushfire CRC, Report CMIT 2006-186]



In this fire demonstration, a vinyl lattice fence, connected to a wood clad wall, was ignited with at burning standard 'A' brand. As is shown in the following photograph, fire did not spread to the wall, even though fine combustible debris was stuffed into areas in the lattice fence.

The vinyl lattice fence deformed, but did not sustain combustion after the 'A' brand burned out, and did not spread fire to the combustible wood wall.

APPENDIX ‘E’
IGNITION RESISTANT CONSTRUCTION REQUIREMENTS

APPENDIX 'E'

Applicable standards for constuction in a Very High Fire Severity Zone as defined in Chapter 7A of the 2016 California Building Code (CBC) and the 2016 Edition of the California Residential Code (CRC) section R337 and those amendments by the City of Lake Elsinore.

This Fire Protection Plan and its requirements are based on current state and local code adoptions, actual construction requirements shall be based on the most current code requirements, with local amendments, at the time of plan check submittal for proposed construction.

1. All structures will be built with a non-combustible Class A Roof Assembly, including a Class A roof covering. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.

2. Where the roof profile allows a space between the roof covering and roof decking, the roof area will have one layer of minimum 72 pound (32.4 kg) mineral-surfaced, non-perforated cap sheet complying with ASTM D 3909 installed over the combustible decking. Openings on barrel tiles or similar roof coverings shall be constructed to prevent the intrusion of flames and embers, and be fire stopped with approved materials to prevent the accumulation of debris, bird nests, etc. between the tiles and decking material.

3. When provided, exposed valley flashings shall be not less than 0.019-inch (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley.

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

5. Gutters shall be provided with the means to prevent the accumulation of leaf litter and debris that contribute to roof edge ignition.

6. All chimney, flue or stovepipe openings will have an approved spark arrester. An approved spark arrester is defined as a device constructed of nonflammable materials, 12 gauge minimum thicknesses or other material found satisfactory by the Fire Protection District, having ½-inch perforations for arresting burning carbon or sparks. It shall be installed to be visible for the purposes of inspection and maintenance.

7. The exterior walls surface materials shall be non-combustible or ignition resistant. In all construction, 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. Architectural foam may be applied only after the exterior wall surface meets the requirements of CBC Chapter 7A/CRC section R337. A finish and color coat may than be applied.

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

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

10. Automatic interior fire sprinklers shall be installed according to the National Fire Protection Association (NFPA) 13D 2013 edition - Standard for the Installation of Sprinkler Systems in One and Two-family Homes and Manufactured Homes.

11. 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:
    - Must comply with ASTM E2886
    - Must have passed an Ember Intrusion Test
    - Vent mesh material must be non-combustible and be a minimum of 1/16th inch and not exceeding $1/8^{th}$ inch
    - All venting on the underside of eaves and cornices must have passed the Ember and Flame Intrusion Test
    - Turbine attic vents shall not be allowed.

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

13. All fences and gate assemblies (fences, gate and gate posts) shall be of non-combustible material.

14. All projections (exterior balconies, decks, patio covers, unenclosed roofs and floors, and similar architectural appendages and projections) or structures shall be of non-combustible material, or one-hour fire resistive construction, in accordance with CBC Chapter 7A and CRC section R337.All building material shall be ignition resistant, and may be heavy timber, or approved pressure-treated exterior fire-retardant wood. If such appendages and projections are attached to exterior fire-resistive walls, they shall be constructed to maintain the same fire-resistant standards as the exterior walls of the structure.

15. Attached and detached accessory structures shall be in built accordance with the CBC Chapter 7A and CRC section R337.

16. CBC Chapter 7A and CRC Section R337 Exterior doors. Exterior doors shall comply with one of the following, and must be self-closing, self-latching
    1. The exterior surface or cladding shall be of noncombustible or ignition-resistant material.
    2. Shall be constructed of solid core wood that comply with the following requirements:
        - Stiles and rails shall not be less than 1-3/8 inches thick
        - Raised panels shall not be less than 1-1/4 inches thick, except for the exterior perimeter of the raised panel that may taper to a tongue not less than 3/8 inch thick.
    3. Shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252.
    4. Shall be tested to meet the performance requirements of SFM Standard 12-7A-1.

17. Exterior glazed door assemblies shall comply with the following:
    1. Be constructed of multi-pane glazing with a minimum of one tempered pane meeting the requirements of Section 2406 Safety Glazing.
    2. Have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 257.
    3. Be tested to meet the performance requirements of SFM 12-7A-2.

18. All glass or other transparent, translucent or opaque glazing materials including skylights shall be constructed multi-layered glazed panels one layer of which must be tempered glass.

19. Garage doors shall be fitted with a sweep seal and/or weather stripping on all sides suitable for preventing the intrusion of embers, if fitted with windows they shall meet the requirements listed above in 18. Additionally, it is recommended that garage doors be of the type that have a self-closing security feature.

20. Vinyl window assemblies are deemed acceptable if the windows have the following characteristics:
    - Frame and sash are comprised of vinyl material with welded corners
    - Metal reinforcements in the interlock area
    - Glazed with insulating glass, annealed or tempered (one layer of which must be tempered glass).
    - Frame and sash profiles are certified in AAMA Lineal Certification Program
    - Certified and labeled to ANSI/AAMA/NWWDA 101/LS2-97 for Structural Requirements

APPENDIX 'F'
FIRE PROTECTION PLAN EXHIBIT

SITE PLAN