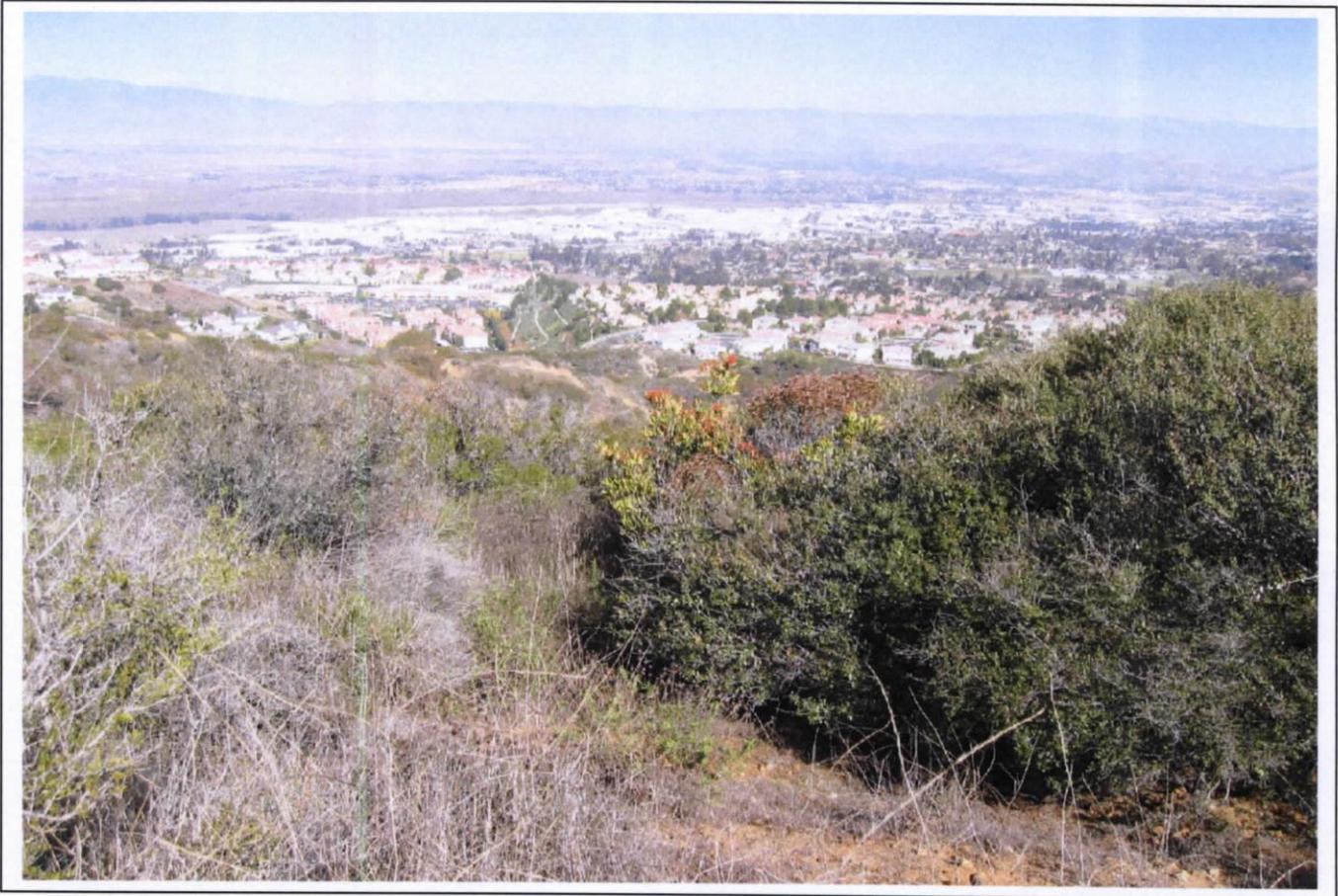


Conceptual Fire Protection Plan
The Sierra Bella Project
Tract No. 32023 (Planning Area 1)
Corona, California



August 6, 2012

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Sierra Bella Conceptual Fire Protection Plan

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SIERRA BELLA SUBDIVISION

CONCEPTUAL FIRE PROTECTION PLAN

TT No. 32023 (Planning Area 1)

Corona, California

1.0 GENERAL DESCRIPTION

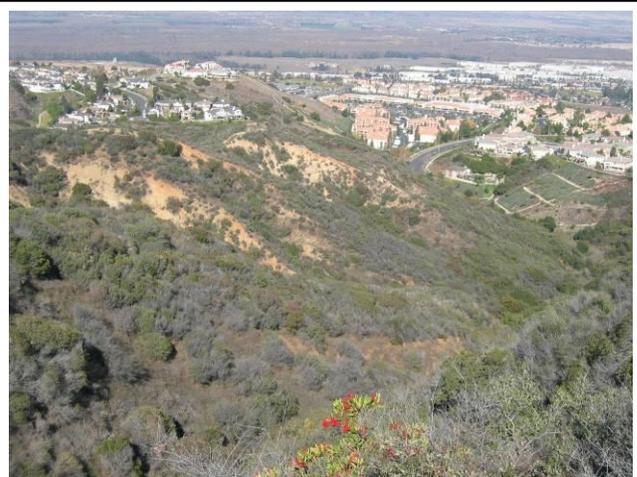
The Sierra Bella subdivision is located within a Very High Fire Hazard Area in the southwestern portion of the City of Corona and consists of the development of 236 single-family detached homes on 236 building lots plus several areas within the project which will remain open space or developed into parks. Home locations have not been determined as of the date of this report therefore this is a Conceptual Fire Protection Plan (CFPP) until such time as home locations have been finalized. Please refer to the attached Fuel Treatment Map for the illustration of property lines and related fuel treatments.

Of the entire 319 acre project area, approximately 109 acres would be residential development and the balance is to remain open space or developed parks. The project is bounded by the Cleveland National Forest on the South, a single family home and open space to the east, open space and existing homes to the north and undeveloped hillside land to the west. Phase 2 of the project will develop the 15 acres to the east currently occupied by the single family home. Phase 2 is not included in the CFPP. A concept Fuel Management Plan will be shown on the specific plan land use exhibit for Phase 2 (Planning Area 2).

Prior to any land development within this proposed project, a Fire Protection Plan (FPP) must be submitted to and approved by the City of Corona Fire Department (CFD). 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 residential development. In addition, this FPP establishes both short and long-term fuel modification actions to minimize any projected fire hazard and risk, and assigns annual maintenance responsibilities for each of the recommended fuel modification actions.

1.1 General Information

Owner: Forestar Corona, LLC
2151 Michelson, Suite 250
Irvine, CA 92612



↑Photo No. 1 - Northwest View From The Southern Side Of Project. Homes Are To Be Built On The Ridge From Where This Photo Is Taken.

Approving Departments:
Fire Authority: City of Corona Fire Department
Engineering: Corona Building Department

The purpose of this CFPP is to provide Fuel Modification Zone treatment direction for developers, architects, builders, and City of Corona Fire Department (CFD) officials to use in making all proposed structures safe from wildland fires in the future. Appendices attached to this CFPP that provide additional information shall be considered part of this CFPP. This CFPP includes:

- A wildland fire hazard rating assessment and calculations of the expected fire behavior in the event a wildland fire should occur within the off-site and on-site native vegetation.
- A long-term perimeter vegetative fuel modification treatment and maintenance plan to minimize any loss to residential structures within the planned development due to wildland fire.
- Additional construction standards will be required for specific homes where the fuel treatments cannot be established next to any high fire hazard wildland fuels.
- A fuel modification treatment plan and landscaping criteria to be deployed around all planned structures.
- Building construction and design criteria for all homes
- 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.

This CFPP is based upon requirements listed in the Wildland-Urban Interface (WUI) Development Standard Guidelines; requirements under the authority of the International Urban-Wildland Interface Code, 2009 edition; California Code of Regulations Title 24, Part 9 and Title 14, Section 1280; 2010 California Fire Code and Local Amendments including Appendices to Chapters 1 & 4 and Appendices B, F & H; the 2009 International Fire Code; 2010 Chapter 7A-California Building Code; California Government Code, sections 51175 through 51189; California Public Resources Code Sections 4201 through 4204; the National Fire Protection Association (NFPA) Standard 13-D, 2010 Edition; the City of Corona Fire Department Weed Abatement Regulations and Fuel Modification Program for Hazardous Fire Areas; City of Corona Health and Safety Code Chapter 8.24 and the Corona City Building Code, Chapter 15.12.

2.0 WILDLAND FIRE HAZARD AND RISK ASSESSMENT

The Sierra Bella project is located within an area classified by the City of Corona Fire Department as a Very High Fire Hazard Area. Wildland fire may impact the project from any direction as there will be wildland fuels between the planned homes and the existing homes to the north, within the open space that will remain to the east and west and the Cleveland National Forest to the south.

The greatest threat comes from the adjacent Cleveland National Forest brush land fuels and steep terrain immediately south of the project area. From this direction, there is potential for wildfire to enter the project on a very wide front thus exposing numerous homes to wildfire simultaneously. An area approximately 1 mile to the east burned within the last 5 years with structure losses.

The Sierra Bella property is located south of the existing developed portion of the City of Corona. Several ridges extend southwest up and into the Santa Ana Mountains of the Cleveland National Forest which is dominated on its northern aspects by intermediate and tall dense Chaparral (see Photo No. 2). The area leading up to the development is moderately sloping hillside terrain and consists of a combination of undeveloped area, previously graded and revegetated manufactured slopes and single family homes.



Photo No. 2 - South View From Near the Southern Boundary Located Along an Existing Dirt Road. The Project Site is Dominated by Steep Rugged Topography and Moderate to Heavy Fuels. The Santa Ana Mountains Area is in the Background.

2.1 Off-Site Fire Hazard and Risk Assessment

Historically, wildland fires occasionally burn into the City of Corona from the Cleveland National Forest located south of the project. These fires are often pushed by moderate west to southwest winds. While these winds and fires are not frequent, they are considered in this CFPP. This moderately strong, dry wind condition that occurs during these fires usually develops in the late afternoon or early evenings on very hot days, especially during the normal summer-time (June through September) months. These moderate winds may blow from 20-30 MPH.

The typical fuel model for the on-site and off-site vegetation is a combined National Forest Fuel Laboratory (NFFL) Fuel Model 18 – Sage/Buckwheat (60%) and Fuel Model 4 – Tall Dense Chaparral (40%). The heavier fuels are located on the northern aspects of the hillsides while the sage/buckwheat is more common in the south and west facing slopes exposed to the sun. Plant succession following a disturbance such as a wildfire would likely result in the maintenance of the existing plant community. The current vegetative cover is near its ecological climax vegetative state as wildfire has not burned a significant portion of the project area in several decades.

Ridges and canyons are significant features in the Sierra Bella project. Several small to intermediate sized watersheds originate from within the project and a few enter the project from the Cleveland National Forest. These canyons are intermittently vegetated with Mule Fat, scattered Sumac, Ceanothus, Buckwheat, Toyon shrubs and occasional Western Sycamore tree species in canyon bottoms where moisture is more available. Portions of the eastern and northern canyon walls are so steep that erosion has resulted in portions of them being non-vegetated.

With the exception of the open space lots located within and adjacent to the development envelope, almost half of the native and exotic vegetation within the project area will be either;

- 1) cleared and replanted to "firewise" landscaping,
- 2) become irrigated or non-irrigated manufactured slopes, or
- 3) be treated to reduce fuel loading and maintained to Zone 2 criteria.

The designated open space should not be a threat to any Sierra Bella home when all designated Zone 1 and 2 defensible space criteria are implemented and maintained. When fuel treatment issues remain, the Construction Standards described in Section 6.7 shall be required.

Northern Boundary Fuels.

The homes most likely to be exposed to wildfires from the north will be located next to the remaining open space along the northern project boundary. Due to the sloped topography, significant numbers of manufactured slopes will need to be graded in order to create level land for home construction. As a result, wildland fuels will abut only a portion of the northern lots. This design feature plus backyard setbacks will be more than adequate in most cases. Photo No. 4 shows a view along the northern project boundary.

The current vegetation is mature due to a lack of recent fire activity. Plant succession will likely maintain the current vegetative cover to a Combined Fuel Model [SCAL 18 - Sage/Buckwheat 50% and FM4 - Chaparral 50%]). A fire burning in this Combined Fuel Model during hot dry and windy conditions is likely to burn with very high intensity and to spread rapidly across the landscape.

It is reasonable to expect Santa Ana winds in the range of 50-60 MPH within this portion of Riverside County. The lack of wind protection makes it more reasonable to calculate fire behavior projections for a 60-MPH Santa Ana wind. The anticipated wind, topography and fuels are nearly in alignment with the proposed structures, which is of great concern. A fire burning under this wind condition and in the fuels



↑ Photo No.3 - Northwest View From Above The Homes Along Montana Ranch Road and Hidden Hills Way. The Arrow Points To An Area of Heavy Chaparral Located On Northeast Facing Slopes.



↑ Photo No. 4 - The Northern Boundary Is Located Adjacent To The Homes. The Dominate Vegetative Cover In The Foreground Is Chamise.

along the northern boundary will burn uphill and into the adjacent structures.

The backyards of the homes on Lots 78 – 85, Lots 61 – 64, and Lots 42 - 43 will be exposed to north and northeast Santa Ana winds. Of considerable concern to **FIREWISE 2000, Inc.** is the fact that these winds will most likely push flames directly upslope and toward the homes from the retained native vegetation. The wind, fuels and topography are in alignment with many of the homes. This area poses a significant fire threat to the Sierra Bella project. The Sierra Bella H.O.A. will retain ownership of the open space land and be responsible for its long-term management and maintenance.

The development of the Sierra Bella project will only enhance the fire protection of the nearby development to the north by the clearing of flammable vegetation, increasing water availability for firefighting and increasing emergency vehicle access. The development will further form a partial barrier between the existing homes located to the north and the Cleveland National Forest which is covered in wildland fuels.

The access roads into the project will be extensions of existing roads. These roads will traverse hillsides covered in highly flammable vegetation. Measures will need to be taken to protect both resident and emergency responder ingress and egress.

Eastern Boundary Fuels

The eastern boundary abuts vacant open space land and a single family home (APN No. 102-320-009) located east of Lots 31 - 43. Slopes located along the eastern boundary and interior fuels range from 45 to 80 percent. All fire behavior projections below are made for the “worst case” hillside environment. A portion of the hillside environment is located as shown in Photo No. 5. Most of the homes will be located along ridges and upslope topography which increases wildfire hazards. The fuels located immediately adjacent to each lot’s eastern lot boundary consist of Sage/Buckwheat and areas of tall heavy chaparral species. In the southeast corner of the project, off-site lands are owned by the Federal government. A Combined Fuel Model [FM - 18 Sage/Buckwheat (60%) and FM - 4 Tall Dense Chaparral (40%)] is representative of the area.



↑ Photo No 5 - Eastern Off-Site Fuels. Heavy Sage/Buckwheat and Chaparral Are Located On The Hillsides. Numerous Non-vegetated Hillsides Occur Due To Slope Steepness. Green River Road Is Visible In The Upper Left Below The Homes.

The backyards of the homes will be exposed to north and northeast Santa Ana winds. These winds would likely push flames uphill and across the slopes. Embers from a fire burning in this hillside environment will likely shower much of the Sierra Bella development. This area poses a significant threat to the Sierra Bella project.

In most cases, the eastern boundary is a significant distance from the lot boundary thereby providing adequate space for on-site fuels treatment. Manufactured slopes from the building pads will extend downward into adjacent on-site open space or into off-site lands where grading agreements have been secured.

Several dirt roads and trails are located adjacent to the eastern project boundary. Due to their narrow width, they are not expected to affect fire behavior in moderate to extremely windy conditions when relative humidity is low.

It is reasonable to expect downslope Santa Ana winds in the range of 50-60 MPH within this portion of Riverside County. The lack of wind protection makes it more reasonable to calculate fire behavior projections for a 60-MPH Santa Ana wind. The anticipated wind, fuels and topography are nearly in direct alignment with the proposed structures which is of concern. A fire burning under this wind condition, on the slopes and in the fuels described along the eastern boundary will tend to burn uphill and into the proposed structures.

Southern Boundary Fuels

The southern boundary of the Sierra Bella project abuts the Cleveland National Forest. The greatest wildland fire threat is from the southwest and these adjacent federal lands. The typical fuel model for this southern boundary is a Combined Fuel Model of FM - 18 Sage/Buckwheat (70%) and FM – 4 Tall Dense Chaparral (30%). Slopes range from 40-70 percent. In most cases, the topography is downhill into the project which is beneficial. Fire behavior in the areas where the topography is downhill to the building lots will be less than shown below.

Southwest or west winds of up to 30-MPH may occur. These “*rare event*” dry winds pose a threat to the structures built along the southern project boundary. The backyards of these homes will be exposed to the south and southwest winds. To the project’s benefit, these winds will likely push flames down the hillside into the project (see Photos No. 6 & 7).



↑ **Photo No.6 - Southern Project Boundary. Fuels Are Moderate to Heavy In This View. Homes Are To Be Built Along The Ridge To The Left. The Southern Project Boundary Is Located Between the Canyon To The Right and**



↑ **Photo No.7 - Southern Off-Site Fuels Near The Southern Edge Of The Project. A Portion Of The Canyon Will Be Filled To Provide Level Space For Construction**

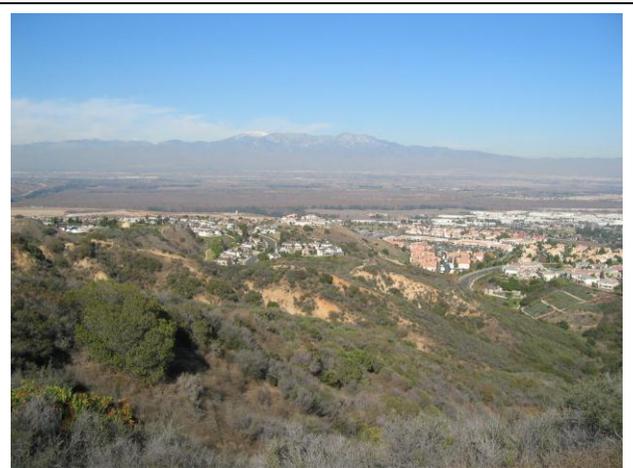
This area poses less of a wildland fire threat to the project than the northern or eastern boundaries as flame lengths and fire intensity are projected to be lower. Manufactured slopes located along the southern edge of the building pads will extend downward into a canyon for a distance of up to 300 feet. Through their establishment, the wildland fuels will be removed which is beneficial. Lots 13, 14, and 30 will be at the greatest risk and construction standards may be required if there is insufficient space for the necessary fuel treatments.

Western Boundary Fuels

The western project boundary and interior fuels are a serious wildland fire threat to the Sierra Bella project. The typical fuel model for this western boundary and interior fuels is a Combined Fuel Model [FM - 18 Sage/Buckwheat (60%) and FM - 4 Tall Dense Chaparral (40%)] in the open space. Slopes range between 30 and 80 percent.

Under present conditions, a wildland fire burning west of the project area during a “rare event” west or southwest wind could burn with high intensity into the Sierra Bella project. Fuels in the area are moderate to heavy (see Photo No. 8).

Nearly all the lots are located downhill from the expected fire behavior which is beneficial. Additionally, the slope, fuels and winds are not in alignment which also is beneficial. Appropriate fuels treatment will need to be established to mitigate for the projected fire intensities and flame lengths. Once the actions required in Section 6.0 are implemented, the wildland fire threat will be mitigated to acceptable levels.



↑ Photo No. 8 - Are Similar To This Photo Looking North From Near The Ridge And An Existing Dirt Road.

2.2 On-site Fire Hazard and Risk Assessment

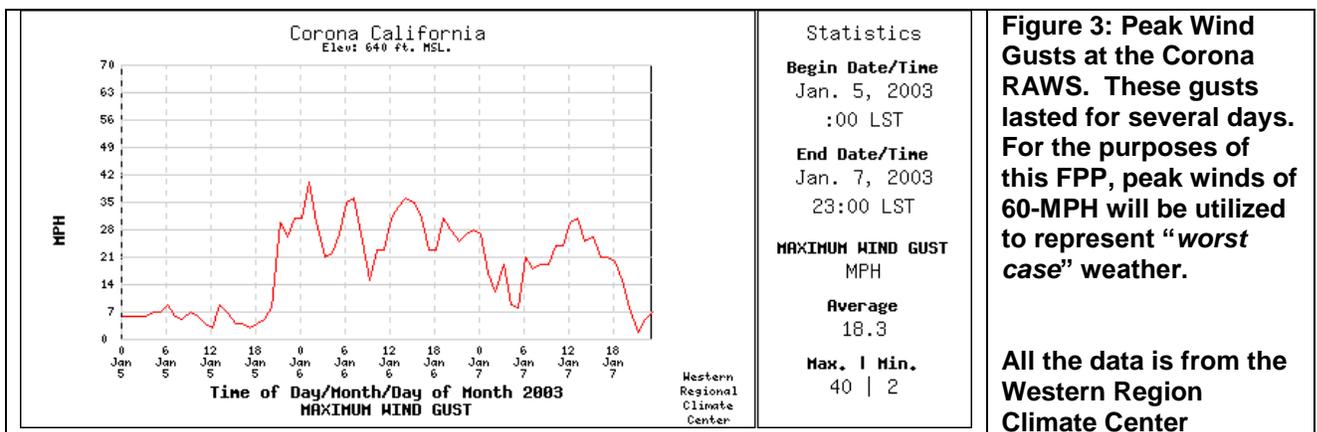
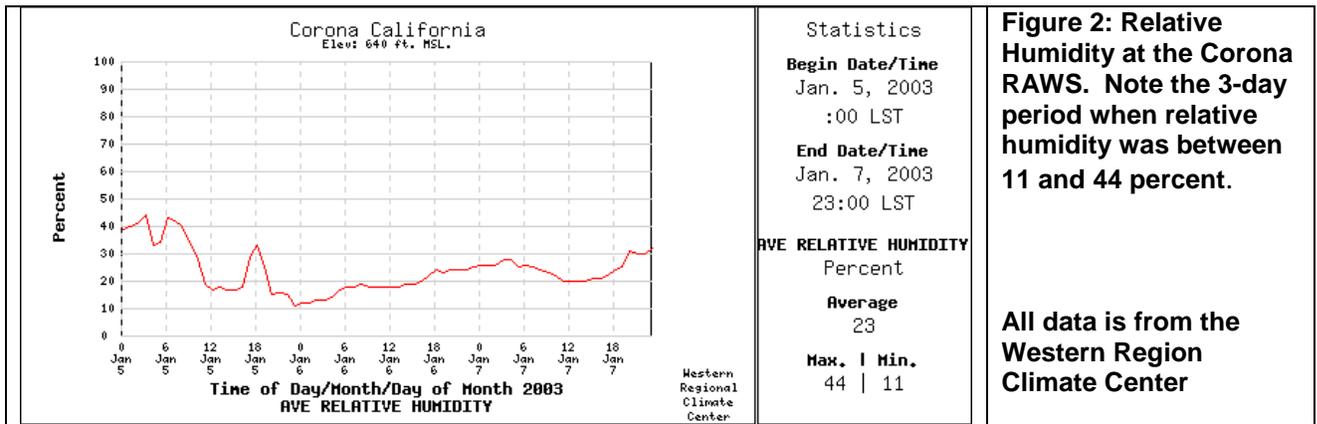
All of the interior fuels will be removed in the grading process and extensive manufactured slopes created. These slopes will be planted and irrigated. Only the open space lots described above in Section 2.1 will retain native vegetation. Several parks are also to be located inside the project further reducing hazards from interior fuels.

2.3 Weather Review and Assessment

The most critical weather pattern to the project area is a hot, dry offshore wind, typically called a Santa Ana. Such wind conditions are usually associated with strong (>40 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.

Fire agencies throughout the western United States rely on a sophisticated system of Remote Automated Weather Stations (RAWS) to monitor weather conditions and aid in the forecasting of fire danger. The closest RAWS to the Sierra Bella project is the Corona RAWS located at Latitude 33° 52' 28" N and Longitude 117° 32' 57" W at an elevation of 640 feet. This is approximately 550 feet lower than the Sierra Bella project site. Winds will tend to be higher within the project than for this weather station. All other (northwest, southeast and south) wind directions may be occasionally strong and gusty; however, they are generally associated with cooler moist air and have higher relative humidity (>40%). They are considered a serious wildland fire weather condition when wind speeds reach >20-MPH.

Data for all RAWS is archived in the Western Region Climate Center in Reno, Nevada. The typical prevailing summer time wind pattern is out of the west/northwest and normally is of a much lower velocity (5-10 MPH with occasional gusts to 20 MPH) and is associated with relative humidity readings ranging between 20% and occasionally more than 70% due to the sites proximity to the ocean. As shown in January 2003, high winds and low relative humidity may occur at any time of the year. A Santa Ana wind gust of 40 MPH was reported on January 6, 2003 with relative humidity of 11 percent (see Figure 2).



3.0 Predicting Wildland Fire Behavior

The BEHAVE Plus 5.0.4 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 Plus fire behavior computer modeling system is utilized by wildland fire experts nationwide.

Wildland fire managers use the BEHAVE Plus modeling system to project the expected fire intensity, rate-of-spread and flame lengths with a reasonable degree of certainty for use in Fire Protection Planning purposes. *FIREWISE 2000, Inc.* used the BEHAVE Plus 5.0.4 Fire Behavior Prediction Model to make the fire behavior assessments for the Sierra Bella project discussed below.

3.1 Wildland Fire Behavior Calculations for the Adjacent Hazardous Vegetative Fuels

Wildland fire behavior calculations have been projected for the hazardous vegetative fuels on the undeveloped sites, adjacent to, and bordering the proposed Sierra Bella project. These projections are based on scenarios that are “worst case” Riverside County fire weather assumptions in the vicinity of the project area. Weather data was obtained from the RAWS (Remote Automatic Weather Station) network stations closest to the project area.

The scenarios are depicted below in Tables 3.1.1 through 3.1.3. All tables display the expected Rate of Fire Spread (expressed in miles/hour), Fireline Intensity (expressed in kilowatts/meter) and Flame Length (expressed in feet) and include the calculation inputs used in the BEHAVE Plus program which were obtained from project site observations and fuel moisture levels typically observed during the local fire season. The tables also show the change in Rate of Fire Spread, Fireline Intensity, and Flame Length following the completion of the required fuel treatment work in Zone 2.

Table 3.1.1 Northern Boundary Fuels <i>Fire Scenario # 1 - Fire Approaching from the North or Northeast</i> <i>(Late Fire Season With 60 MPH North, Northeast and East Wind Conditions)</i>	
Fire Behavior Calculation Input Data	Anticipated Fuel Moistures
<ul style="list-style-type: none"> • 90 percent slope • 60 mph 20-foot wind speed • 15° aspect from north • 45° wind direction from north 	<ul style="list-style-type: none"> * 1-Hour Fine Fuel Moisture of.....2% * 10-Hour Fuel Moisture of.....3% * 100-Hour Fuel Moisture of.....5% * Live Herbaceous Fuel Moisture of.....30% * Live Woody Fuel Moisture of.....50%
Expected Fire Behavior	
Combined Fuel Model [SCAL 18 - Sage/Buckwheat 50% and FM4 – Chaparral (50%)]	
Rate of Spread - 16 mi/hr	
Fireline Intensity - 492,345 kW/m	
Flame Length - 105.5 feet	
Expected Fire Behavior in Treated Fuels (Zone 2)	
Combined Fuel Model - [tl6 - Moderate Load Broadleaf Litter 50% and gr1 – Short Sparse Dy Climate Grass 50%]	
Rate of Spread - 3 mi/hr	
Fireline Intensity - 6,204 kW/m	
Flame Length - 14.1 feet	

Table 3.1.2 Eastern Boundary Fuels <i>Fire Scenario # 2 - Fire Approaching from the Northeast or East</i> <i>(Late Fire Season With 60 MPH North, Northeast and East Wind Conditions)</i>	
Fire Behavior Calculation Input Data	Anticipated Fuel Moistures
<ul style="list-style-type: none"> • 75 percent slope • 60 mph 20-foot wind speed • 25° aspect from north • 45° wind direction from north 	<ul style="list-style-type: none"> * 1-Hour Fine Fuel Moisture of.....2% * 10-Hour Fuel Moisture of.....3% * 100-Hour Fuel Moisture of.....5% * Live Herbaceous Fuel Moisture of.....30% * Live Woody Fuel Moisture of.....50%
Expected Fire Behavior	
Combined Fuel Model [SCAL 18 - Sage/Buckwheat 60% and FM4 – Chaparral (40%)]	
Rate of Spread - 16 mi/hr	
Fireline Intensity - 483,224 kW/m	
Flame Length - 104.6 feet	
Expected Fire Behavior in Treated Fuels (Zone 2)	
Combined Fuel Model - [tl6 - Moderate Load Broadleaf Litter 50% and gr1 – Short Sparse Dy Climate Grass 50%]	
Rate of Spread - 3 mi/hr	
Fireline Intensity - 6,204 kW/m	
Flame Length - 4.4 feet	

Table 3.1.3 Southern and Western Boundary Fuels <i>Fire Scenario # 3 - Fire Approaching from the South, Southwest, or West</i> <i>(Late Fire Season With 30 MPH South, Southwest and West Wind Conditions)</i>	
Fire Behavior Calculation Input Data	Anticipated Fuel Moistures
<ul style="list-style-type: none"> • 70 percent slope • 30 mph 20-foot wind speed • 245° aspect from north • 225° wind direction from north 	<ul style="list-style-type: none"> * 1-Hour Fine Fuel Moisture of.....2% * 10-Hour Fuel Moisture of.....3% * 100-Hour Fuel Moisture of.....5% * Live Herbaceous Fuel Moisture of.....30% * Live Woody Fuel Moisture of.....60%
Expected Fire Behavior	
Combined Fuel Model [SCAL 18 - Sage/Buckwheat 60% and FM4 – Chaparral (40%)]	
Rate of Spread	- 5 mi/hr
Fireline Intensity	- 171,459 kW/m
Flame Length	- 65.0 feet
Expected Fire Behavior in Treated Fuels (Zone 2)	
Combined Fuel Model [gr1 – Short Sparse Dy Climate Grass 50% and sh1 – Low Load, dry climate shrub 50%]	
Rate of Spread	- 1 mi/hr
Fireline Intensity	- 1,598 kW/m
Flame Length	- 7.6 feet

.4.0 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 Behave Plus Fire Behavior Computer Modeling Program does not address wind blown embers or firebrands from a structure ignition perspective. However, even though ignition resistant exterior building materials will be used in the construction of the Sierra Bella (see APPENDIX ‘E’ for the description of Ignition Resistant Construction), wind driven embers and radiant heat issues are addressed in this CFPP.

4.1 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 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 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 for the Sierra Bella residences, as the buildings will be constructed with ignition resistant building materials.

4.2 Radiant Heat/Direct Flame Impingement

Radiation and convection involve the transfer of heat directly from the flame to any exposed surface. 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 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 Jack Cohen of the United States Forest Service has found that a home's characteristics (its exterior materials and design in relation to the immediate area around a home within 100 feet) principally determine the home'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.

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. 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 3.1 against the required fuel modification zones outlined in Section 6.0, demonstrates substantial reductions in the expected flame length. 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 and Zone 2 fuel treatment standards and shall keep the roof and any rain gutters free of leaves, needles and other combustible debris. All firewood and other combustible materials must be properly stored away

from the structure so that burning embers falling on or near the structure have no suitable host. The Sierra Bella 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.

4.3 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 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.

5.0 Fire Department Response Times

The Sierra Bella project is within the City of Corona Fire Department’s 5-minute initial action response time. Fire apparatus at City of Corona Fire Station #3, located at 790 S. Smith Street, would likely be the first City engine to arrive at the proposed project area (5 or 7 minutes depending on traffic). Response times may decrease when Foothill Parkway is developed. The next closest engine would either be CFD Engine #5 or #6, both located approximately 6-12 minutes away. However, the most probable first wildland fire engine to arrive would be Riverside County (El Cerrito) Station #15, which is located at the intersection of Temescal and Cajalco Roads. Station #15 is located approximately six miles away from the project area. Additional agencies such as Riverside County and City of Norco would also likely respond equipment but they would likely arrive after Corona engines were on-scene.

Although City of Corona fire station #3, #5 and #6 engines may be generally 5-12 minutes away, there is no assurance that any of the Engine Companies will be in its station when a wildfire threatens the Sierra Bella development from an ignition in the adjacent wildlands. Engines may respond from other stations located further away or from other incidents. On high/extreme fire danger days there often may be multiple fire starts and engine companies may be already deployed on other incidents. This is why ***FIREWISE 2000, Inc.*** planned projects 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 and without the loss of their structure. The goal of this CFPP, therefore, is to make the Sierra Bella development and its occupants 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.

6.0 Fuel Treatment Zone Descriptions & Required Treatments

Below are the descriptions and required treatments for the Fuel Treatment Zones. All distances in this report are measured horizontally. These distances are depicted on the enclosed Fuel Treatment Map. Fuel treatment in most of the Sierra Bella project will require the standard City of Corona fuel treatments of 30-feet of Irrigated Zone 1, and 70-feet of Thinning Zone 2 from each structure.

In some cases, to mitigate against Santa Ana wind driven wildfire threats, fuel treatments will require 30 feet of Irrigated Zone 1 and up to 120 feet of Thinning Zone 2. Therefore depending on location, Zones 1 and 2 together provide 100 - 150 feet of treated area which should mitigate the radiant and convective heat effects of a wildland fire.

Northern Boundary

Lots 60 – 64 and 78 – 85 are situated in an area exposed to significant weather, containing steep slopes covered in moderate to heavy chaparral and slopes mostly uphill into the development. These lots have backyards directly exposed to native vegetation. Under the minimum City of Corona requirements it is possible that flame lengths could directly impinge upon the proposed structures. To offset this concern, an additional 50 feet of Thinning Zone 2 will be required on Lots 60 – 64 and 78 – 85 for a total of 150 feet of treated area; 30 feet of Irrigated Zone 1 and 120 feet of Thinning Zone 2.

Eastern Boundary

Lots 42 and 43 are situated in an area exposed to significant weather, containing steep slopes covered in moderate to heavy chaparral and slopes mostly uphill into the development. These lots have backyards directly exposed to native vegetation. Under the minimum City of Corona requirements it is possible that flame lengths could directly impinge upon the proposed structures.

All the required fuel treatments cannot be established on-site utilizing the existing lot boundaries. To ensure that there is adequate on-site space for fuel treatment within the project, special setback no build zones from the eastern project boundary will be required for the homes to be built on lots 42 and 42. Additional construction features shall also be required for these lots as outlined in Section 6.7, which will include a 6-foot tall non-combustible wall on the eastern property boundary.

Southern Boundary

The required fuel treatments cannot be established on-site utilizing the existing lot boundaries for Lot 39, therefore special setback no build zone for this lot will be required.

Western Boundary

Fuel treatment along the western portions of the Sierra Bella Development will require standard City of Corona fuel treatments of 30-feet of Irrigated Zone 1, and 70-feet of Thinning Zone 2 fuel treatment from each structure.

6.1 Irrigated Zone 1A - Lot Owner Maintained (*Shown as No Color on the Fuel Treatment Map*)

Defined

Irrigated Zone 1 is commonly called the defensible space zone, and shall be free of all combustible construction and materials. It includes the entire lot (front, back and side yards). It is measured 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 structure. 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 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. Thick, succulent 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 and desirable plants and APPENDIX ‘B’ for the Prohibited Plant list.
- Zone 1 will be cleared of all fire prone and prohibited plant species (see APPENDIX ‘B’).
- Landscape designs using hardscape features such as driveways, swimming pools, concrete, rock, pavers, and similar non-combustible features to break up fuel continuity within Zone 1 are encouraged.
- Landscaping shall be irrigated and primarily consist of fire-resistant, maintained native or ornamental plantings.
- Plants shall be low-growing and selected from the plant list in APPENDIX ‘A’ or plants approved by the CFD. Mature height of plants shall not exceed 18 inches.
- 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.
- Trees must have a minimum of six feet of vertical separation from low growing, irrigated vegetation beneath the canopy of each tree.

Required Maintenance

- Lots shall be maintained year round by the individual property owners within their property boundary (lot lines) as required by this CFPP or the CFD.
- Remove and replace any dead or dying plant material monthly.
- Native annual and perennial grasses will be allowed to grow and produce seed during the winter and spring. As grasses begin to cure (dry out), they will be cut to four inches or less in height.
- Trees must be maintained to have a minimum of six feet of vertical separation from low growing, irrigated vegetation beneath the canopy of each tree.
- 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)).

6.2 Irrigated Zone 1B (Manufactured Slopes and Common Areas) – H.O.A. Maintained (*Shown as **Blue on the Fuel Treatment Map*)**

Defined

Common areas where the H.O.A. is to maintain the landscape to Irrigated Zone 1A criteria. Maintenance of these manufactured slopes will be the responsibility of the developer and/or builder outside the lot boundary. Once the H.O.A. is legally formed, then this responsibility will be transferred to the H.O.A.

6.3 No Build Zone (Lots 30, 42, 43 and 61) - Lot Owner Maintained (Shown as Orange on the Fuel Treatment Map.)

Defined

The No Build Zone has the same landscaping and maintenance requirements as Zone 1A and shall be free of all combustible construction and materials including the house. No combustible structures, which include the house, can be built within this zone. Combustible decks, patio covers and gazebos will be prohibited in this zone. (see written Fire Protection Plan for further information)

6.4 Thinning Zone 2 - HOA Maintained (Shown as Yellow on the Fuel Treatment Map)

Defined

Fuel Treatment Zone 2 is a transition area between the strict requirements of Irrigated Zone 1A and Zone 1B and the undisturbed native vegetation. Zone 2 is a non-irrigated thinning zone 70 - 120 feet in width beginning at the outer edge of Zones 1A or 1B. Thinning zones are utilized to reduce the fuel load of a wildland area adjacent to urban projects thereby reducing the radiant and convective heat of wildland fires. The intent is to achieve and maintain an overall 50 percent reduction of the canopy cover spacing and a 50 percent reduction of the original fuel loading by reducing the fuel in each remaining shrub or tree without substantially decreasing the canopy cover or the removal of tree holding root systems. Contour foot access trails, concrete drainage structures or roadways should be provided to aid in annual maintenance of these common areas

Required Landscaping

- Thinning the native vegetation to a point where 50% open space is created.
- Removal of all dead, woody debris, and exotic or native flammable vegetation (see APPENDIX 'B')
- Allowances for the needs of protected species and habitats will be considered in this zone.
- No combustible construction or materials are allowed in Zone 2.

Required Maintenance

- Annually maintain all tree crowns to keep a separation of six feet between the ground fuels (shrubs and ground covers) and the lower limbs. 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)).
- Annually prune vegetation (see APPENDIX 'B') to maintain a 50% thinning from the original vegetation cover.
- Native annual and perennial grasses will be allowed to grow and produce seed during the winter and spring. As grasses begin to cure (dry out), they will be cut to 4 inches or less in height.
- Annually remove all dead and dying vegetation and highly flammable exotic species (see APPENDIX 'B').

6.5 Fire Access Roads – H.O.A. Maintained (Shown as *Purple* on the Fuel Treatment Map) Defined

All publically accessible roads within the Sierra Bella development shall have roadside fuel treatment for a minimum of 20-feet from the edge of the roadway. Vegetation will be cleared or maintained to Irrigated Zone 1A criteria as discribed in Section 6.1. The purpose of this action is to minimize the cutting-off of the home owners egress due to a wildland fire occurrence and for ingress by emergency responders.

6.6 Zone Markers

All exterior boundaries of Fuel Treatment Zones 1 and 2 shall be permanently marked on the ground for the purpose of guiding annual fuel treatment maintenance and inspection operations. The most reliable markers are steel fence posts with a baked on painted finish. The upper half of the above ground portion of the fence post is then painted a bright “day glow” orange to improve visibility. These Fuel Treatment Zone markers must be spaced so that the markers on each side of an installed marker can be seen from that marker.

6.7 Construction Standards

All structures within the Sierra Bella project shall meet all wildland/interface standards to the satisfaction of the CFD and be designed and constructed with ignition resistant construction requirements. All construction and ignition resistant requirements shall meet the 2009 International Wildland-Urban Interface Code (IWUIC), including amendments; related Ordinances; the CA Fire and Building Code, 2007 Edition and Chapter 7A-California Building Code. For a description of the current construction requirements as of the date of this report see APPENDIX ‘E’. The fire protection features described herein shall be maintained to equivilent or greater ignition resistance.

All non-habitable accessory structures such as decks, balconies, patio, covers, gazebos and fences shall be built from non-combustible materials. The owner is not restricted from having concrete/brick patios, walkways or a swimming pool within the Fuel Treatment Zones in compliance with other codes. Refer to APPENDIX ‘D’ for photos and descriptions of non-combustible decks, patio covers, and railings for these non-habitable accessory structures.

Construction or building permits shall not be issued until the fire code official inspects and approves required fire apparatus access and water supply for the construction site. Prior to the delivery of combustible building construction materials to the project site the following conditions shall be completed to the satisifaction of the CFD:

- All utilities shall be installed and approved by the appropriate inspecting department or agency.
- Approved Zone 1B and Zone 2 fuel treatments shall be provided prior to combustible material arriving on the site and shall be maintained throughout the duration of construction. Zone 1A shall be cleared of all vegetation prior to construction and subsequently planted to the requirments stated in Section 6.1 after construction is completed.

6.8 Additional Construction Requirements

The following additional construction requirements will be applied to the designated residential lots and structures as described below. These lots are the most exposed to high intensity wildfire. In

some instances, there is less than 100-feet of distance between a structure and untreated fuels. These requirements are designed to mitigate this concern:

All perimeter lots facing hazardous vegetation (Lots 1-11, 13-15, 28-38, 41-43, 61-64, 67, 78-86, 154 & 155):

- 1) No skylights will be allowed on the roof assembly.
- 2) All homes located within 200-feet of native vegetation shall have their eaves or roof overhangs enclosed with 1-hour rated or non-combustible materials per the City Building Code, Chapter 15.12.150, Article 11.

Lots 42 and 43:

A 6 foot solid non-combustible wall shall be installed at the northern and eastern lot lines as shown on the Fuel Treatment Map.

Lots 30, 42, 43 and 61:

Special setback no build zones as indicated on the Fuel Treatment Map.

Automatic door closers on all exterior doors excluding the vehicle garage door.

7.0 Homeowner Education.

The Sierra Bella H.O.A. shall inform its residents that in the event of a wildland fire, they should always relocate to a safe area well beyond the path of the threatening wildland fire. If by chance relocation is not possible and egress is cut-off by the fire, the homeowners should seek shelter within their own home until the wildland fire passes through their area. These ignition resistant homes will have a “defensible space” area for firefighters to make their stand in the protection of each home and substantially increase the probability of “structure survivability” without the intervention of fire protection if firefighting forces are not readily available.

Should the homeowner not be able to relocate, they should ensure that all doors (including the garage) and windows are closed to prevent embers from entering their structure. Doors should be 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, firewood and similar combustible materials shall not be stored within 30-feet of any structure.

Each homeowner shall be aware of the herein described fire protection measures by reviewing this CFPP of the types of non-combustible construction and plant materials that are allowed within their lot boundary. A copy of this plan shall be provided to each resident during escrow procedures. Of particular importance are APPENDICES ‘A’, ‘B’, and ‘D’ of this plan which provide guidance in the types of plants that allowed to be established in landscaped areas and appropriate construction materials within fuel modification zones. Plant selection is critical as embers often travel over a mile during Santa Ana wind events.

Where this CFPP requires specific construction features, these features shall not be changed without the approval of the CFD. These features are required to maintain reasonable fire safety.

8.0 Infrastructure

8.1 Water Supply

The Sierra Bella water supply will be provided by the City of Corona Department of Water and Power. An approved permanent water supply capable of supplying the required fire flow for fire protection shall be provided by the developer to all premises upon which buildings or portions of buildings are hereafter constructed prior to the commencement of construction or moved into. The water supply system shall be a looped system served from two points.

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 1500 GPM at 20psi residual pressure for a 2-hour duration, since the buildings will be equipped with an automatic fire sprinkler systems in accordance with NFPA Standard 13D.

Hydrants installation shall conform to City of Corona Public Works Standard #412 and NFPA 14, Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems. Reflective blue dot hydrant markers shall be installed per City of Corona Public Works Standard #702. Hydrant spacing shall be 300' between hydrants, as measured by an approved emergency access route.

8.2 Access Roads/Driveways and Gates

Primary public access into the project will be via Green River Road to Sierra Bella Dr. from the north. A second means of egress is located to the west at the southern end of Calle Del Oro. This exit only public road will be gated with egress available at all times. A third emergency responder access will be available through the City's water site. This access will be gated.

Driveways and access roads within the development shall be termed "Fire Access Roads" within this document. Fire apparatus access roads shall be identified by curbs painted red on both the top and face along the entire length of the fire apparatus access road. Where no curb exists or a rolled curb is installed, a 6 inch wide red strip or approved posted signs applied the full length of the fire apparatus access road shall be installed. All fire access roads shall meet the requirements of the CFD, and shall be all weather surface capable of supporting loads of 75,000 lbs gross vehicle weight. Access to all portions of each structure must be within 150 feet of the available fire department access. The required turning radius of a fire apparatus access road shall be 25 feet inside radius and 50 feet outside radius on all turns in the fire apparatus access road, unless otherwise approved by the fire code official

Any gates to be installed shall meet CFD Standards and shall be approved by the CFD prior to fabrication and installation. A Knox override key switch or similar device 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, 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. All gates shall be equipped to allow for automatic egress from the Sierra Bella development at all times.

Roadway fuel treatments of 20-feet in width from the edge of the roadway shall be established and maintained to Irrigated Zone 1A criteria where the roadway is not adjacent to Irrigated Zone 1A or 1B or cleared of all vegetation.

9.0 Mandated Inclusions in the Sierra Bella CC & R's

The Sierra Bella CC & R's shall include the following statements:

- 1) Each lot owner is personally responsible for all Irrigated Zone 1A landscaping and fuel treatment measures within their property as per the Sierra Bella H.O.A.
- 2) The City of Corona Fire Department will hold the H.O.A. of Sierra Bella project accountable for enforcement of all wildland fire protection issues discussed in this plan.
- 3) The H.O.A. shall not allow and has the authority for enforcing the ban on **NO TRASH DUMPING OR DISPOSAL OF GREEN WASTE IN THE OPEN SPACE AREAS OR IN THE FUEL TREATMENT ZONES.**
- 4) All landscaping plans, including additional structures, must be reviewed and approved under the guidance and approval of the City of Corona Fire Department.
- 5) The Sierra Bella H.O.A. has the responsibility and authority for enforcing Irrigated Zone 1A, 1B, and Thinning Zone 2 fuel treatment measures on any privately owned lot.
- 6) Any disputes related to the Sierra Bella H.O.A. Board approval of individual lot landscaping or fuel treatment, with respect to interpretation of the Sierra Bella Fuel Treatment Zone Plan, shall be decided by the City of Corona Fire Department or its designated representative and whose decision shall be final and binding on the lot owner.

10.0 Fuel Treatment Map

Attached is a folder containing the FUEL TREATMENT MAP depicting the location of all proposed fuel treatment locations as well as fire access roads, lot lines, and development boundaries.

APPENDIX 'A'

Recommended Plant List

APPENDIX 'A'

RIVERSIDE COUNTY PLANT LIST

RECOMMENDED PLANTS FOR HIGH FIRE HAZARD AREAS

	Code	Botanical Name	Common Name	Plant Form
	Any plant with the abbreviation Ncn in the Common Name column below means that there is No Common Name. The code is found at the bottom of the last page of this list.			
1	W	Abelia x grandiflora	Glossy Abelia	Shrub
2	N□	Acacia redolens desert carpet	Desert Carpet	Shrub
3	□	Acer macrophyllum	Big Leaf Maple	Tree
4	X	Achillea millefolium	Common Yarrow	Low shrub
5	W	Achillea tomentosa	Wooly Yarrow	Low shrub
6	X	Aeonium decorum	Aeonium	Ground cover
7	X	Aeonium simsii	Ncn	Ground cover
8	W	Agaave attenuata	Centruy Plant	Succulent
9	W	Agave shawii	Shaw's Century Plant	Succulent
10	N	Agave victoriae-reginae	Ncn	Ground cover
11	X	Ajuga reptans	Carpet Bugle	Ground cover
12	W	Alnus cordata	Italian Alder	Tree
13	□	Alnus rhombifolia	White Alder	Tree
14	N	Aloe aborescens	Tree Aloe	Shrub
15	N	Aloe aristata	Ncn	Ground cover
16	N	Aloe brevifolia	Ncn	Ground cover
17	W	Aloe vera	Medicinal Aloe	Succulent
18	W	Alyogyne huegelii	Blue Hibiscus	Shrub
19	□	Ambrosia chamissonis	Beach Bur-Sage	Perennial
20	□	Amorpha fruticosa	Western False Indigobush	Shrub
21	W	Anigozanthus flavidus	Kangaroo Paw	Perennial accent
22	□	Antirrhinum nuttalianum ssp. Nuttatianum	Ncn	Subshrub
23	X	Aptenia cordifolia x 'Red Apple'	Red Apple Aptenia	Ground cover
24	W	Arbutus unedo	Strawberry Tree	Tree
25	W	Arctostaphylos 'Pacific Mist'	Pacific Mist Manzanita	Ground cover
26	W	Arctostaphylos edmundsil	Little Sur Manzanita	Ground cover
27	□	Arctostaphylos glandulosa ssp.glandulosa	Eastwood Manzanita	Shrub

28	W	Arctostaphylos hookeri 'Monterey Carpet'	Monterey Carpet Manzanita	Low shrub
29	N	Arctostaphylos pungens	Ncn	Shrub
30	N	Arctostaphylos fefugioensis	Refugio Manzanita	Shrub
31	W	Arctostaphylos uva-ursi	Bearberry	Ground cover
32	W	Arctostaphylos x 'Greensphere'	Greensphere Manzanita	Shrub
33	N	Artemisia caucasica	Caucasian Artemisia	Ground cover
34	X	Artemisia pycnocephala	Beach Sagewort	Perennial
35	X	Atriplex canescens	Four-Wing Saltbush	Shrub
36	X	Atriplex lentiformis ssp. Breweri	Brewer Saltbush	Shrub
37	□	Baccharis emoryi	Emory Baccharis	Shrub
38	W □	Baccharis pilularis ssp. Consanguinea	Chaparral Bloom	Shrub
39	X	Baccharis pilularis var. pilularis "Twin Peaks #2"	Twin Peaks	Ground cover
40	□	Baccharis salicifolia	Mulefat	Shrub
41	N	Baileya multiradiata	Desert Marigold	Ground cover
42	W	Beaucarnea recurvata	Bottle Palm	Shrub/Small tree
43	N □	Bougainvillea spectabilis	Bougainvillea	Shrub
44	N □	Brahea armata	Mexican Blue Palm, Blue Hesper Palm	Palm
45	N □	Brahea brandegeei	San Jose Hesper Palm	Palm
46	N □	Brahea edulis	Guadalupe Palm	Palm
47	□	Brickellia acalifornica		Subshrub
48	W □	Bromus carinatus	California Brome	Grass
49	□	Camissonia cheiranthifolia	Beach Evening Primrose	Perennial subshrub
50	N	Carissa macrocarpa	Green Carpet Natal Plum	Ground cover/Shrub
51	X	Carpobrotus chilensis	Sea Fig Ice Plant	Ground cover
52	W	Ceanothus gloriosus 'Point Reyes'	Point Reyes Ceanothus	Shrub
53	W	Ceanothus griseus "Louise Edmunds'	Louis Edmunds Ceanothus	Shrub
54	W	Ceanothus griseus horizontalis	Yankee Point	Ground Cover
55	W	Ceanothus griseus var. horizontalis	Carmel Creeper Ceanothus	Shrub
56	W	Ceanothus griseus var. horizontalis "Yankee Point"	Yankee Point Ceanothus	Shrub

57	□	Ceanothus megacarpus	Big Pod Ceanothus	Shrub
58	W	Ceanothus prostratus	Squaw carpet ceanothus	Shrub
59	□	Ceanothus spinosus	Green bark ceanothus	Shrub
60	W	Ceanothus verrucosus	Wart-Stem Ceanothus	Shrub
61	W	Cerastium tomentosum	Snow-in-summer	Ground cover/shrub
62	W	Ceratonia siliqua	Carob	Tree
63	W	Cercis occidentalis	Western Redbud	Tree/shrub
64	X	Chrysanthemum leucanthemum	Oxeye Daisy	Groundcover
65	W	Cistus hybridus	White Rockrose	Shrub
66	W	Cistus incanus	Ncn	Shrub
67	W	Cistus incanus	Ncn	Shrub
68	W	Cistus incanus ssp. Corsicus	Ncn	Shrub
69	W	Cistus salviifolius	Sageleaf Rockrose	Shrub
70	W	Cistus x purpureus	Orchid Rockrose	Shrub
71	W	Citrus species	Citrus	Tree
72	□	Clarkia botatae	Showy Fairwell to Spring	Annual
73	□	Cneoridium dumosum	Bushrue	Shrub
74	□	Collinsia heterophylla	Chinese Houses	Annual
75	W□	Comarostaphylis diversifolia	Summer Holly	Shrub
76	N	Convolvulus cneorum	Bush Morning Glory	Shrub
77	W	Coprosma kirkii	Creeping Coprosma	Ground cover/Shrub
78	W	Coprosma pumila	Prostrate Coprosma	Low Shrub
79	□	Coreopsis californica	California Coreopsis	Annual
80	W	Coreopsis lanceolata	Coreopsis	Ground cover
81	N	Correa pulchella	Australian Fuchsia	Ground cover
82	W	Cotoneaster buxifolius	Ncn	Shrub
83	W	Cotoneaster congestus 'Likiang'	Likiang Cotoneaster	Ground cover/Vine
84	W	Cotoneaster parneyi	Ncn	Shrub
85	X	Crassula lactea	Ncn	Ground cover
86	X	Crassula multicava	Ncn	Ground cover
87	X	Crassula ovata	Jade Tree	Shrub
88	X	Crassula tetragona	Ncn	Ground cover
89	W□	Croton californicus	California Croton	Ground cover
90	X	Delosperma 'alba'	White Trailing Ice Plant	Ground cover
91	□	Dendromecon rigida	Bush Poppy	Shrub
92	□	Dichelostemma capitatum	Blue Dicks	Herb

93	N	<i>Distictis buccinatoria</i>	Blood-Red Trumpet Vine	Vine/Climing vine
94	N	<i>Dodonaea viscosa</i>	Hopseed Bush	Shrub
95	X	<i>Drosanthemum floribundum</i>	Rosea Ice Plant	Ground cover
96	X	<i>Drosanthemum hispidum</i>	Ncn	Ground cover
97	X	<i>Drosanthemum speciosum</i>	Dewflower	Ground cover
98	<input type="checkbox"/>	<i>Dudleya lanceolata</i>	Lance-leaved Dudleya	Succulent
99	<input type="checkbox"/>	<i>Dudleya pulverulenta</i>	Chalk Dudleya	Succulent
100	W	<i>Elaeagnus pungens</i>	Silberberry	Shrub
101	<input type="checkbox"/>	<i>Encelia californica</i>	California Encelia	Small shrub
102	<input type="checkbox"/> •	<i>Epilobium canum</i> [<i>Zauschneria californica</i>]	Hoary California Fuchsia	Shrub
103	<input type="checkbox"/>	<i>Eriastrum sapphirinum</i>	Mojave Woolly Star	Annual
104	N	<i>Eriobotrya japonica</i>	Loquat	Tree
105	<input type="checkbox"/>	<i>Eriodictyon crassifolium</i>	Thick-Leaf Yerba Santa	Shrub
106	<input type="checkbox"/>	<i>Eriodictyon trichocalyx</i>	Yerba Santa	Shrub
107	w <input type="checkbox"/>	<i>Eriophyllum confertiflorum</i>	Ncn	Shrub
108	W	<i>Erythrina species</i>	Coral Tree	Tree
109	N	<i>Escallonia species</i>	Several varieties	Shrub
110	w <input type="checkbox"/>	<i>Eschscholzia californica</i>	California Poppy	Flower
111	X	<i>Eschscholzia mexicana</i>	Mexican Poppy	Herb
112	N	<i>Euonymus fortunei</i>	Winter Creeper Euonymus	Ground cover
113	N	<i>Feijoa sellowiana</i>	Pineapple Guava	Shrub/Tree
114	N	<i>Fragaria chiloensis</i>	Wild Strawberry/ Sand Strawberry	Ground cover
115	<input type="checkbox"/>	<i>Frankenia salina</i>	Alkali Heath	Ground cover
116	W	<i>Fremontodendron californicum</i>	California Flannelbush	Shrub
117	X	<i>Gaillardia x grandiflora</i>	Blanketflower	Ground cover
118	W	<i>Galvezia speciosa</i>	Bush Snapdragon	Shrub
119	W	<i>Garrya ellipta</i>	Silktassel	Shrub
120	X	<i>Gazania hybrids</i>	South African Daisy	Ground cover
121	X	<i>Ggazania rigens leucolaena</i>	Trailing Gazania	Ground cover
122	<input type="checkbox"/>	<i>Gilia capitata</i>	Globe Gilia	Perennial
123	W	<i>Gilia lephantha</i>	Showy Gilia	Perennial
124	W	<i>Gilia tricolor</i>	Bird's Eyes	Perennial
125	W	<i>Ginkgo biloba</i>	Maidenhair Tree	Tree
126	<input type="checkbox"/>	<i>Gnaphalium californicum</i>	California Everlasting	Annual
127	W	<i>Grewia occidentalis</i>	Starflower	Shrub
128	<input type="checkbox"/>	<i>Grindelia stricta</i>	Gum Plant	Ground cover

129	N <input type="checkbox"/>	<i>Hakea suaveolens</i>	Sweet Hakea	Shrub
130	W	<i>Harde bergia comptoniana</i>	Lilac Vine	Shrub
131	N	<i>Helianthemum mutabile</i>	Sunrose	Ground cover/Shrub
132	<input type="checkbox"/>	<i>Helianthemum scoparium</i>	Rush Rose	Shrub
133	<input type="checkbox"/>	<i>Heliotropium curassavicum</i>	Salt Heliptrope	Ground cover
134	X	<i>Helix canariensis</i>	English Ivy	Ground cover
135	W	<i>Hesperaloe parviflora</i>	Red Yucca	Perennial
136	<input type="checkbox"/> <input type="checkbox"/>	<i>Heteromeles arbutifolia</i>	Toyon	Shrub
137	X	<i>Hypericum calycinum</i>	Aaron's-Beard	Shrub
138	N	<i>Iberis sempervirens</i>	Edging Caandytuft	Ground cover
139	N	<i>Iberis umbellatum</i>	Globe Candytuft	Ground cover
140	<input type="checkbox"/>	<i>Isocoma menziesii</i>	Coastal Goldenbush	Small shrub
141	<input type="checkbox"/>	<i>Isomeris arborea</i>	Bladderpod	Shrub
142	W	<i>Iva hayesiana</i>	Poverty Weed	Ground cover
143	N	<i>Jublans californica</i>	California Black Walnut	Tree
144	<input type="checkbox"/>	<i>Juncus acutus</i>	Spiny Rush	Perennial
145	<input type="checkbox"/>	<i>Keckiella antirrhinoides</i>	Yellow Bush Penstemon	Subshrub
146	<input type="checkbox"/>	<i>Keckiella cordifolia</i>	Heart Leaved Penstemon	Subshrub
147	<input type="checkbox"/>	<i>Keckiella ternata</i>	Blue Stemmed Bush Penstemon	Subshrub
148	W	<i>Kniphofia uvaria</i>	Red Hot Poker	Perennial
149	W	<i>Lagerstroemia indica</i>	Crape Myrtel	Tree
150	W	<i>Lagunaria patersonii</i>	Primrose Tree	Tree
151	X	<i>Lampranthus aurantiacus</i>	Bush Ice Plant	Ground cover
152	X	<i>Lampranthus filicaulis</i>	Redondo Creeper	Ground cover
153	X	<i>Lampranthus spectabilis</i>	Trailing Ice Plant	Ground cover
154	W	<i>Lantana camara cultivars</i>	Yellow Sage	Shrub
155	W	<i>Lantana montevidensis</i>	Trailing Lantana	Shrub
156	<input type="checkbox"/>	<i>Lasthenia californica</i>	Dwarf Goldfields	Annual
157	W	<i>Lavandula dentataq</i>	French Lavendar	Shrub
158	W	<i>Leptospermum laevigatum</i>	Australian Tea Tree	Shrub
159	W	<i>Leucophyllum frutescens</i>	Texas Ranger	Shrub
160	<input type="checkbox"/>	<i>Leymus condensatus</i>	Giant Wild Rye	Large grass
161	N	<i>Ligustrum japonicum</i>	Texas Privet	Shrub
162	X	<i>Limonium pectinatum</i>	Ncn	Ground cover
163	X	<i>Limonium perezii</i>	Sea Lavender	Shrub
164	w <input type="checkbox"/>	<i>Liquidambar styraciflua</i>	American Sweet Gum	Tree
165	W	<i>Liriodendron tulipifera</i>	Tulip Tree	Tree

166	X	Lonicera japonica 'Halliana'	Hall's Japanese Honeysuckle	Vining shrub
167	□	Lonicera subspicata	Wild Honeysuckle	Vining shrub
168	X	Lotus corniculatus	Bird's Foot Trefoil	Ground cover
169	□	Lotus heermannii	Northern Woolly Lotus	Perennial
170	□	Lotus scoparius	Deerweed	Shrub
171	W	Lupinus arizonicus	Desert Lupine	Annual
172	W	Lupinus benthamii	Spider Lupine	Annual
173	□	Lupinus bicolor	Sky Lupine	Flowering annual
174	□	Lupinus sparsiflorus	Loosely Flowered Annual Lupini/Coulter's Lupine	Annual
175	W	Lyonothamnus floribundus ssp. Asplenifolius	Fernleaf Ironwood	Tree
176	W	Macadamia Integrifolia	Macadamia Nut	Tree
177	W	Mahonia aquifolium 'Golden Abundance'	Golden Abundance Oregon Grape	Shrub
178	W	Mahonia nevinii	Nevin Mahonia	Shrub
179	□	Malacothamnus fasciculatus	Chaparral Mallow	Shrub
180	X	Malephora luteola	Trailing Ice Plant	Ground cover
181	W	Maytenus boaria	Mayten Tree	Tree
182	W	Melaleuca nesophila	Pink Melaleuca	Shrub
183	N	Metrosideros excelsus	New Zealand Christmas Tree	Tree
184	□•	Mimulus species	Monkeyflower	Flower
185	□	Mirabilis californica	Wishbone Bush	Perennial
186	N	Myoporum debile	Ncn	Shrub
187	N	Myoporum insulare	Boobyalla	Shrub
188	W	Myoporum parvifolium	Ncn	Ground cover
189	W	Myoporum 'Pacificum'	Ncn	Shrub
190	□	Nassella [stipa] lepida	Foothill needlegrass	Ground cover
191	□	Nassella [stipa] pulchra	Purple needlegrass	Ground cover
192	□	Nemophila menziesii	Baby Blue Eyes	Annual
193	X	Nerium oleander	Oleander	Shrub
194	□	Oenothera hookeri	California Evening Primrose	Flower
195	W	Oenothera speciosa	Showy Evening Primrose	Perennial
196	X	Ophiopogon japonicus	Mondo Grass	Ground cover
197	□•	Opuntia littoralis	Prickly Pear	Cactus
198	□•	Opuntia oricola	Oracle Cactus	Cactus
199	□•	Opuntia prolifera	Coast Cholla	Cactus

200	W	<i>Osmanthus fragrans</i>	Sweet6 Olive	Shrub
201	X	<i>Osteospermum fruticosum</i>	Trailing African Daisy	Ground cover
202	X	<i>Parkinsonia aculeata</i>	Mexican Palo Verde	Tree
203	W	<i>Pelargonium peltatum</i>	Ivy Geranium	Ground cover
204	X	<i>Penstemon species</i>	Beard Tongue	Shrub
205	W	<i>Photinia fraseri</i>	Ncn	Shrub
206	W	<i>Pistacia chinensis</i>	Chinese Pistache	Tree
207	X	<i>Pittosporum undulatum</i>	Victorian Box	Tree
208	□	<i>Plantago erecta</i>	California Plantain	Annual
209	••	<i>Plantago insularis</i>	Woolly Plantain	Annual
210	X	<i>Plantago sempervirens</i>	Evaergreen Plaintain	Ground cover
211	W	<i>Platanus racemosa</i>	California Sycamore	Tree
212	W	<i>Plumbago auriculata</i>	Plumbago Cape	Shrub
213	□	<i>Populus fremontii</i>	Western Cottonwood	Tree
214	X	<i>Portulacaria afra</i>	Elephant's Food	Shrub
215	□	<i>Potentilla glandulosa</i>	Sticky Cinquefoil	Subshrub
216	X	<i>Potentilla tabernaemontanii</i>	Spring Cinquefoil	Ground cover
217	X	<i>Prunus caroliniana</i>	Carolina Cherry Laurel	Shrub/Tree
218	□	<i>Prusus ilicifolia ssp. Ilicifolia</i>	Holly Leaved Cherry	Shrub
219	X	<i>Prunus lyonii</i>	Catalina Cherry	Shrub/Tree
220	N	<i>Punica granatum</i>	Pomegranate	Shrub/Tree
221	W	<i>Puya species</i>	Puya	Succulent/shrub
222	W	<i>Pyraacantha species</i>	Firethorn	Shrub
223	□	<i>Quercus agrifolia</i>	Coast Live Oak	Shrub
224	□□•	<i>Quercus berberdifolia</i>	California Scrub Oak	Shrub
225	□□•	<i>Quercus dumosa</i>	Coastal Scrub Oak	Shrub
226	X	<i>Quercus engelmannii</i>	Engelmann Oak	Tree
227	X	<i>Quercus suber</i>	Cork Oak	Tree
228	X	<i>Rhamnus alaternus</i>	Italian Buckthorn	Shrub
229	□	<i>Rhamnus californica</i>	California Coffee Berry	Shrub
230	□	<i>Rhamnus crocea</i>	Redberry	Shrub
231	□	<i>Rhamnus crocea ssp. Ilicifolia</i>	Hollyleaf Redberry	Shrub
232	N	<i>Rhaphiolepis species</i>	Indian Hawthorn	Shrub
233	□	<i>Rhus integrifolia</i>	Lemonade Berry	Shrub
234	N	<i>Rhus lancea</i>	African Sumac	Tree
235	□□	<i>Rhus ovataa</i>	Sugarbush	Shrub
236	□	<i>Ribes aureum</i>	Golden Currant	Shrub
237	□	<i>Ribes indecorum</i>	White Flowering Currant	Shrub

238	□	<i>Ribes speciosum</i>	Fuchsia Flowering Gooseberry	Shrub
239	W	<i>Ribes viburnifolium</i>	Evergreen Currant	Shrub
240	□•	<i>Romneya coulteri</i>	Matilija Poppy	Shrub
241	X	<i>Romneya coulteri</i> 'White Cloud'	White Cloud Matilija Poppy	Shrub
242	W□	<i>Rosmarinus officinalis</i>	Rosemary	Shrub
243	W□	<i>Salvia greggii</i>	Autumn Sage	Shrub
244	W□	<i>Salvia sonomensis</i>	Creeping Sage	Ground cover
245	□	<i>Sambucus mexicana</i>	Mexican Elderberry	Tree
246	W	<i>Santolina chamaecyparissus</i>	Lavender Cotton	Ground cover
247	W	<i>Santolina virens</i>	Green Lavender Cotton	Shrub
248	□	<i>Satureja chandleri</i>	San Miguel Savory	Perennial
249	□	<i>Scirpus acutus</i>	Hard-Stem Bulrush	Perennial
250	□	<i>Scirpus californicus</i>	California Bulrush	Perennial
251	X	<i>Sedum acre</i>	Goldmoss Sedum	Ground cover
252	X	<i>Sedum album</i>	Green Stonecrop	Ground cover
253	X	<i>Sedum confusum</i>	Ncn	Ground cover
254	X	<i>Sedum lineare</i>	Ncn	Ground cover
255	X	<i>Sedum x rubrotinctum</i>	Pork and Beans	Ground cover
256	X	<i>Senecio serpens</i>	Ncn	Ground cover
257	□	<i>Sisyrinchium bellum</i>	Blue-Eyed Grass	Ground cover
258	□	<i>Solanum douglasii</i>	Douglas Nightshade	Shrub
259	□	<i>Solanum xanthii</i>	Purple Nightshade	Perennial
260	W	<i>Stenocarpus sinuatus</i>	Firewheel Tree	Tree
261	W	<i>Strelitzia nicolai</i>	Giant Bird of Paradise	Perennial
262	W	<i>Strelitzia reginae</i>	Bird of Paradise	Perennial
263	□	<i>Symphoricarpos mollis</i>	Creeping Snowberry	Shrub
264	W	<i>Tecoma stans</i> [<i>Stenolobium</i> <i>stans</i>]	Yellow Bells	Shrub/Small tree
265	X	<i>Tecomaria capensis</i>	Cape Honeysuckle	Ground cover
266	N	<i>Teucrium chamaedrys</i>	Germander	Ground cover
267	N	<i>Thymus serpyllum</i>	Lemon Thyme	Ground cover
268	N	<i>Trachelospermum jasminoides</i>	Star Jasmine	Shrub
269	□	<i>Trichostema lanatum</i>	Woolly Blue-Curls	Shrub
270	X	<i>Trifolium hirtum</i> 'Hyron'	Hyron Rose Clover	Ground cover
271	X	<i>Trifolium fragiferum</i> 'O'Connor's'	O'Connor's Legume	Ground cover
272	□	<i>Umbellularia californica</i>	California Laurel	Tree

273	<input type="checkbox"/>	Verbena lasiostachys	Western Vervain	Perennial
274	N	Verbena peruviana	Ncn	Ground cover
275	X	Verbena species	Verbena	Ground cover
276	X	Vinca minor	Dwarf Periwinkle	Ground cover
277	<input type="checkbox"/>	Vitis girdiana	Desert Wild Grape	Vine
278	X	Vulpia myuros 'Zorro'	Zorro Annual Fescue	Grass
279	W	Westringia fruticosa		Shrub
280	W	Xanthorrhoea species	Grass Tree	Perennial accent/ Shrub
281	W	Xylosma congestum	Shiny Xylosma	Shrub
282	X	Yucca species	Yucca	Shrub
283	<input type="checkbox"/>	Yucca whipplei	Yucca	Shrub

CODE

- X = Plant species prohibited in wet and dry fuel modification zones adjacent to native open space lands.
Acceptable on all other fuel modification locations and zones.
- W = Plant species appropriate for use in wet fuel modification zones adjacent to native open space lands.
Acceptable in all other wet and irrigated dry (manufactured slopes) fuel modification locations and zones.
- = Plant species native to San Diego County. Acceptable in all fuel modification (wet or dry zones) in all locations.
- N = Plant species acceptable on a limited basis (maximum 30% of the area at time of planting) in wet fuel modification zones adjacent to native open space reserve lands. Acceptable in all other fuel modification locations and zones. Refer to qualification requirements starting on page 13.
- If seed collected from local seed source.
 - Not native plant species but can be used in all fuel modification zones.

APPENDIX 'B'

Prohibited Plant List

APPENDIX 'B'

Prohibited (& Fire Prone) Plant Species List For Fuel Modification Zones in 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.	Eriogonum fasciculatum	Common Buckwheat	Shrub
15.	Eucalyptus species	Eucalyptus	Shrub/Tree
16.	Heterotheca grandiflora	Telegraph plant	Weed/shrub
17.	Juniperus species	Junipers	Succulent
18.	Lactuca serriola	Prickly lettuce	Weed
19.	Nicotiana bigelevil	Indian tobacco	Shrub
20.	Nicotiana glauca	Tree tobacco	Shrub
21.	Pennisetum species	Fountain Grass	Ground cover
22.	Pinus species	Pines	Tree
23.	Rosmarinus species	Rosemary	Shrub
24.	Salvia species • •	Sage	Shrub
25.	Silybum marianum	Milk thistle	Weed
26.	Urtica urens	Burning nettle	Weed
<ul style="list-style-type: none"> • Except: Acacia redolens desert carpet (Desert Carpet ground cover) • • Except: Salvia columbariae (chia) Salvia sonomensis (Creeping Sage) 			

APPENDIX 'C'

Literature References

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-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 4.0 User's Guide*, General Technical Report RMRS-GTR-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.
4. California Code of Regulations Title 24 and Title 14, section 1280
5. California Public Resources Code Sections 4201 through 4204
6. California Government Code, sections 51175 through 51189; the 2007 Fire Code portion of the CBSC, including appendices to Chapters 1 & 4 and appendices B, F & H
7. 2006 International Fire Code (IFC)
8. 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, 2010 Editions
9. National Fire Protection Association - NFPA 1142 Standard on Water Supplies for Suburban and Rural Fire Fighting, 2007 Edition.
10. National Fire Protection Association - NFPA 1144 *Standard for Reducing Structure Ignition Hazards from Wildfire* (2008).
11. National Fire Protection Association - NFPA 1142, 2008 Edition. Table C.11 (b) Time-Distance Table Using an Average Speed of 35 mph
12. International Urban-Wildland Interface Code, 2009 edition
13. *The 2007 California Fire Code-revised January, 2008 and Local Amendments*
14. *Chapter 7A-California Building Code*
15. *The California State and Local Responsibility Area Fire Hazard Severity Zone Map – Fire and Resource Assessment Program of CAL FIRE*
16. Corona City Building Code, Chapter 15.12
17. Corona City Health and Safety Code, Chapter 8.24
18. City of Corona Fire Department Weed Abatement Regulations and Fuel Modification Program for Hazardous Fire Areas
19. Western Region Climate Center. *Historic Climate Data from Remote Automated Weather Stations*. RAWS USA Climate Archive. Reno, NV.

APPENDIX 'D'

Non-combustible & Fire Resistant Building Materials

APPENDIX 'D'

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

Examples of non-combustible & fire resistant building materials for balconies, carports decks, patio covers and floors are as follow:

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



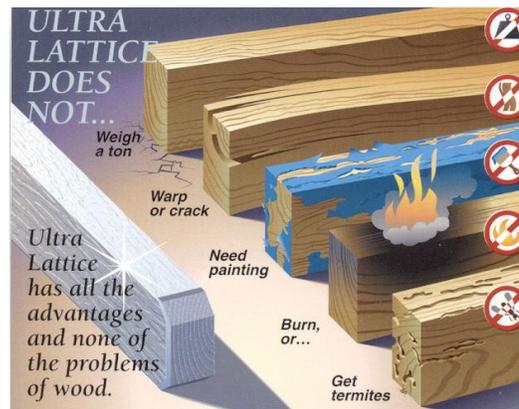
Ultra-Lattice Stand Alone Patio Cover



Ultra-Lattice Attached Patio Cover



Ultra-Lattice Solid Patio Cover



Ultra-Lattice Vs. Wood

II. FRX Exterior Fire-Retardant Treated Wood

Exterior Fire Retardant Treated (FRT) Wood

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

Typical Exterior Uses

- Balconies
- Decks



Homeowners
and
Residential
Architects:
See this [2-
minute video](#)
and the
diagram
below.



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

Decking (SFM Standard 12-7A-4)

III. TREX COMPANY, INC –“Trex Accents®: Fire Defense™” wood and polyethylene composite deck board, nominal 5/4” thick x 5-1/2” width, nominal density of 0.036 lb/in³.

Trex Accents®: Fire Defense™

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 [WILDLAND URBAN INTERFACE \(WUI\) PRODUCTS Report](#). (PDF)

IV. SOLID “WOOD” DECKING

◇Company Name: Various Manufacturers

Product Description: Solid “Wood” decking: “Redwood”, “Western Red Cedar”, “Incense Cedar”, “Port Orford Cedar”, and “Alaska Yellow Cedar”.

Sizes: Minimum nominal 2” thickness (American Softwood Lumber Standard PS 20).

Lumber grades: Construction Common and better grades for Redwood, 3 Common and better grades for Cedars, and commercial decking or better grades for both Redwood and Cedars.

Special Instructions: solid wood decking shall be installed over solid wood joists spacing 24” or less on center.

APPENDIX 'E'

Ignition Resistive Construction

APPENDIX 'E'

As of the date of this FPP, the following are the requirements for ignition resistant construction including requirements under Chapter 7A of the California Building Code (CBC) . In addition, exterior building construction including roofs, eaves, exterior walls, doors, windows, decks, and other attachments must meet the CBC Chapter 7A ignition resistance requirements at the time of building permit application.

1. All structures will be built with a Class A Roof Assembly, including a Class A roof covering, and attic or foundation ventilation louvers or ventilation openings in vertical walls shall not exceed 144 square inches per opening and shall be covered with 1/8-inch mesh corrosion-resistant metal screening or other approved material that offers equivalent protection. Attic ventilation shall also comply with the requirements of the Uniform Building Code (U.B.C.). Ventilation louvers and openings may be incorporated as part of access assemblies.
2. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be fire stopped with approved materials or have one layer of No. 72 ASTM cap sheet installed over the combustible decking.
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. Paper-faced insulation shall be prohibited in attics or ventilated spaces.
5. 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 1/2-inch perforations for arresting burning carbon or sparks. It shall be installed to be visible for the purposes of inspection and maintenance.
6. All residential structures will have automatic interior fire sprinklers installed according to the National Fire Protection Association (NFPA) 13D 2002 edition - Standard for the Installation of Sprinkler Systems in One and Two-family Homes and Manufactured Homes .
7. 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.

8. The exterior walls surface materials shall be non-combustible or ignition resistant. In all construction, exterior walls are required to be protected with 2-inch nominal solid blocking between rafters at all roof overhangs.
9. All eaves, fascias and soffits will be enclosed (boxed) with non-combustible materials. This shall apply to the entire perimeter of each structure.
10. All rain gutters, down spouts and gutter hardware shall be constructed from metal or other noncombustible material to prevent wildfire ignition along eave assemblies .
11. Gutters shall be provided with the means to prevent the accumulation of leaf litter and debris that contribute to roof edge ignition.
12. All fences and gate assemblies (fences, gate and gate posts) shall be of non-combustible material.
13. No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.
14. All projections (exterior balconies, decks, patio covers, unenclosed roofs and floors, and similar architectural appendages and projections) or structures less than five feet from a building shall be of non-combustible material, one-hour fire resistive construction on the underside, heavy timber construction or pressure-treated exterior fire-retardant wood. When such appendages and projections are attached to exterior fire-resistive walls, they shall be constructed to maintain same fire-resistant standards as the exterior walls of the structure.
15. Exterior doors shall be approved non-combustible construction, solid core wood and shall conform to the performance requirements of standard SFM 12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 1³/₈ inches thick with interior field panel thickness no less than 1¹/₄ inches thick, or shall have a fire-resistance rating of not less than 20 minutes when tested according to ASTM E2074.
16. Accessory structures attached to buildings with habitable spaces and projections shall be in accordance with the Building Code. When the attached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all underfloor areas and exterior wall construction in accordance with Chapter 7A of the Building Code.
17. 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/NWDA 101/LS2-97 for Structural Requirements

18. All windows shall be provided with mesh metal or similar non-combustible screens to prevent embers from entering the structure during high wind conditions
19. Roof vents, dormer vents, gable vents, foundation ventilation openings, ventilation openings in vertical walls, or other similar ventilation openings shall be louvered and covered with 1/8-inch, noncombustible, corrosion-resistant metal mesh or other approved material that offers equivalent protection. Turbine attic vents shall be equipped to allow, one-way direction rotation only; they shall not free spin in both directions.
20. Combustible eaves, fascias and soffits shall be enclosed. 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.
21. Attic or foundation ventilation louvers or ventilation openings in vertical walls shall not exceed 144 square inches per opening and shall be covered with 1/8" inch mesh corrosion-resistant metal screen or other approved material that offers equivalent protection.
22. Detached accessory structures located less than 50 feet from a building containing habitable space shall be constructed in accordance with Chapter 7A of the 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.

Additional Construction Requirements

All perimeter lots facing hazardous vegetation (Lots 1-11, 13-15, 28-38, 41-43,61-64,67, 78-86, 154 & 155):

:

- 1) No skylights will be allowed on the roof assembly.
- 2) All homes located within 200-feet of native vegetation shall have their eaves or roof overhangs enclosed with 1-hour rated or non-combustible materials per the City Building Code, Chapter 15.12.150, Article 11.

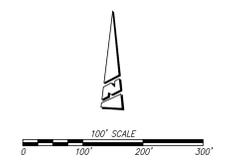
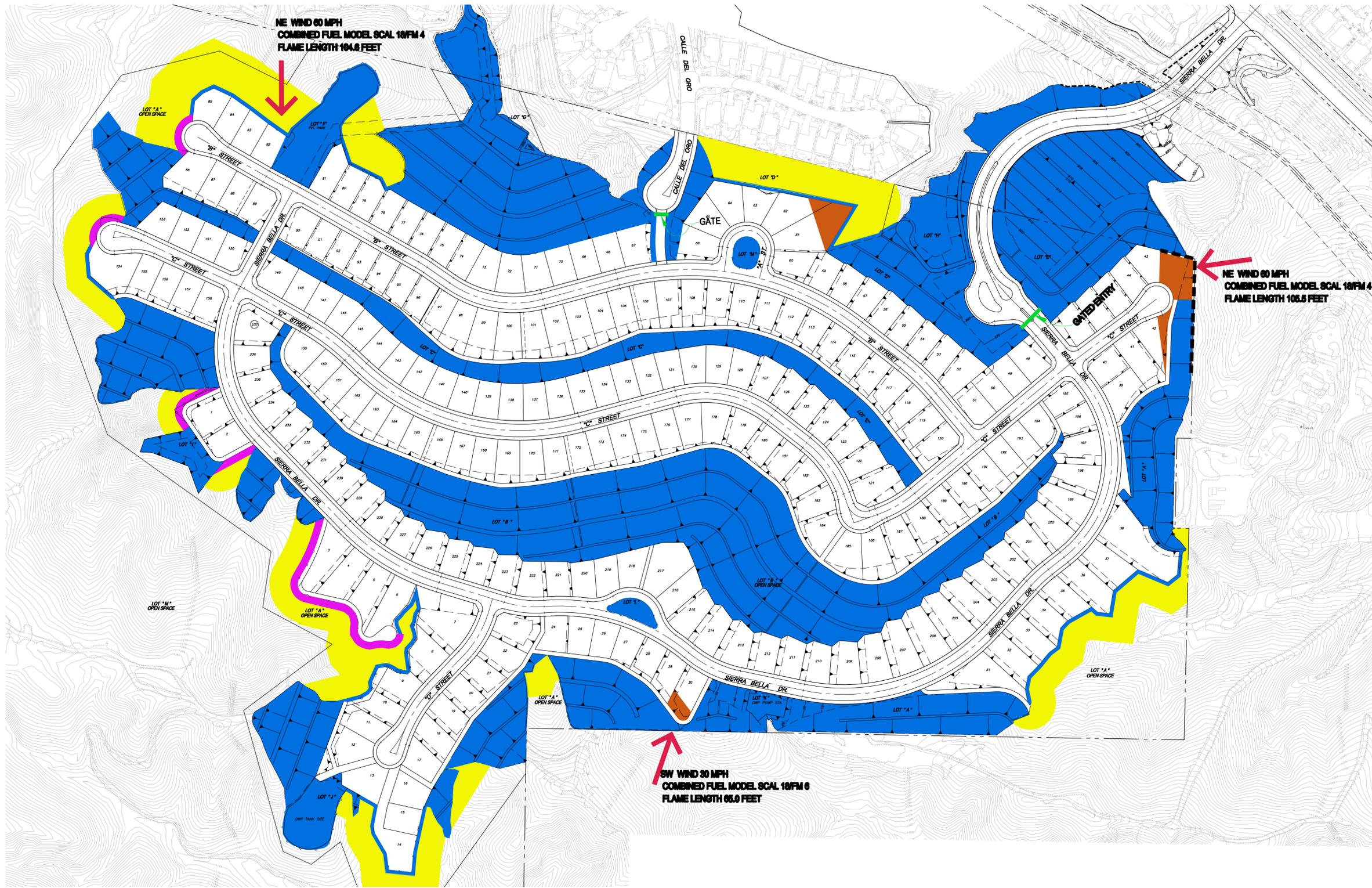
Lots 42 and 43:

A solid non-combustible walls shall be installed at the northern and eastern lot line as shown on the Fuel Treatment Map.

Lots 30, 42, 43 and 61:

Special setback no build zones as indicated on the Fuel Treatment Map.

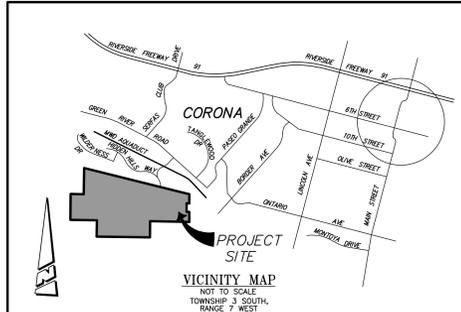
Automatic door closers on all exterior doors excluding the vehicle garage door.



LEGEND

- IRRIGATED ZONE 1A (LOT OWNER MAINTAINED)
- IRRIGATED ZONE 1B (HOA MAINTAINED)
- NO BUILD ZONE (LOT OWNER MAINTAINED)
- FUEL TREATMENT ZONE 2 (HOA MAINTAINED)
- FIRE ACCESS ROADS (HOA MAINTAINED)
- WIND DIRECTION ARROW
- 6' NO COMBUSTIBLE WALL

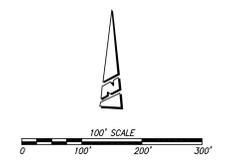
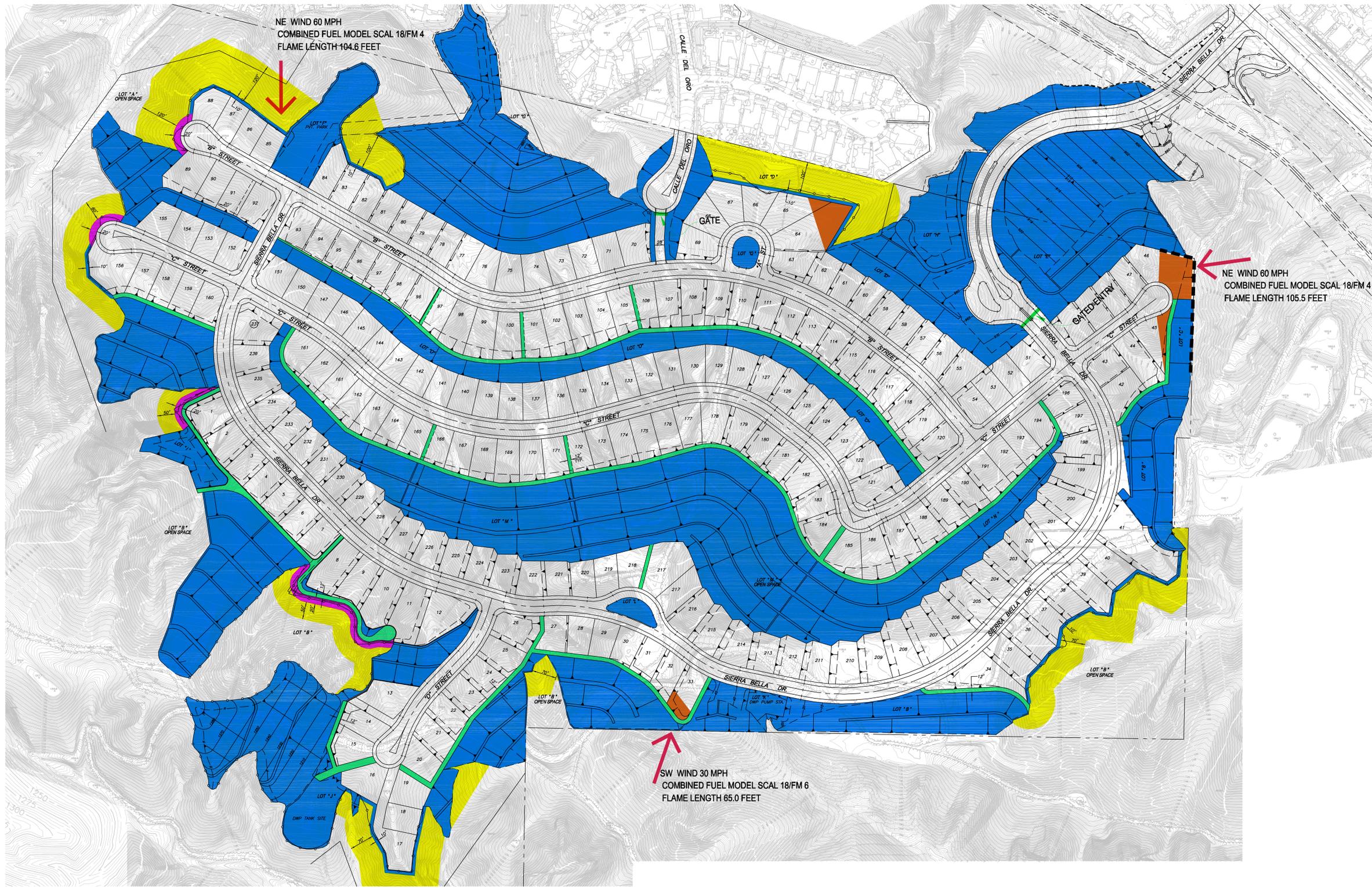
NOTE:
SEE FIRE PROTECTION PLAN FOR
DETAILED DESCRIPTION OF LEGEND



CERTIFIED BY:
David C. Bacon AUG. 8, 2012
DAVID C. BACON, PRESIDENT DATE
FIREWISE 2000, INC.
26337 SKY DRIVE
ESCONDIDO, CA 92026
TELEPHONE: 760-745-3947

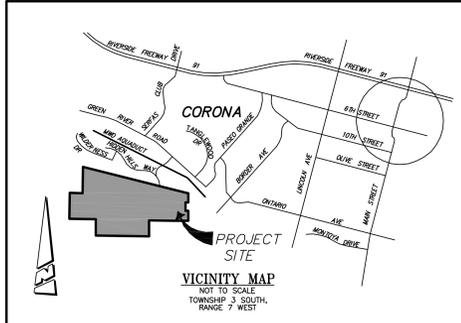
PROACTIVE
ENGINEERING CONSULTANTS
WWW.PROACTIVEENGINEERING.NET
25109 JEFFERSON AVE., SUITE 200
MURRIETA, CA 92562
951-200-6640

TENTATIVE TRACT NO. 32023
SIERRA BELLA
FIREWISE EXHIBIT



- LEGEND**
- IRRIGATED ZONE 1A (LOT OWNER MAINTAINED)
 - IRRIGATED ZONE 1B (HOA MAINTAINED)
 - NO BUILD ZONE (LOT OWNER MAINTAINED)
 - FUEL TREATMENT ZONE 2 (HOA MAINTAINED)
 - FIRE ACCESS ROADS (HOA MAINTAINED)
 - HOA MAINT. ACCESS ROADS
 - WIND DIRECTION ARROW
 - 6' NO COMBUSTIBLE WALL

NOTE:
SEE FIRE PROTECTION PLAN FOR
DETAILED DESCRIPTION OF LEGEND



CERTIFIED BY:
David C. Tolson SEPT. 27, 2012
DATE

DAVID C. BACON, PRESIDENT
FIREWISE 2000, INC.
26337 SKY DRIVE
ESCONDIDO, CA 92028
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TENTATIVE TRACT NO. 32023
SIERRA BELLA
FIRE PROTECTION PLAN MAP

Drawing Name: 2108121000 Sierra Bella (Design) (Initial) Final and Landmark