Appendix P: Fire Protection Plan

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Fire Protection Plan
Green River Ranch Business Park
APN's 101-180-014-8, 101-180-037-9, 101-180-038-0, 101-180-015-9
Corona, California

August 5, 2020, Revised 4/7/2023

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Green River Ranch Business Park
Fire Protection Plan

Table of Contents

APPENDICES

FIRE PROTECTION PLAN
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APN's 101-180-014-8, 101-180-037-9, 101-180-038-0, 101-180-015-9
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1.0 GENERAL DESCRIPTION

The proposed Green River Ranch Business Park (GRRBP) is located on undeveloped lands within a very high fire hazard zone in the City of Corona. The project consists of the construction of five (5) commercial buildings ranging in size from 80,320 sq. ft.to 285,698 sq. ft. for a total of 746,330 sq. ft. including 1,255 parking spaces and associated roadways on approximately 37.82 acres. The plan was revised on April 7, 2023 to account for changes in the maintenance and location of the open space located west of Building 1.

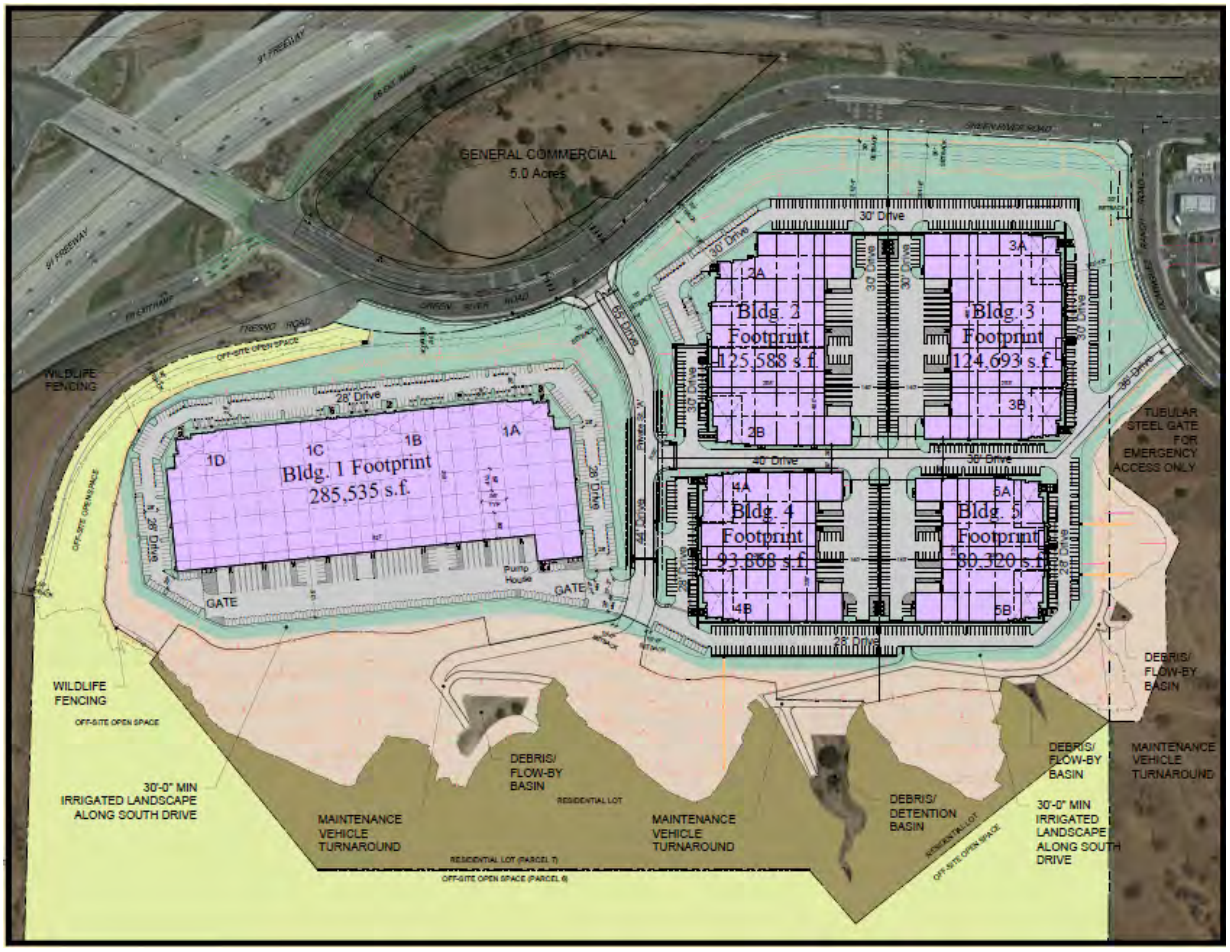

Photo #1 – Site Plan Overlaid On An Aerial View.

The project is bounded by undeveloped land on the North, partially developed land to the East, the 91 Freeway to the West, and undeveloped land to the South (see Photo #1). Further to the South, out of view, is the Cleveland National Forest. Refer to the attached Fire Protection Plan Map exhibit (Section 10.0) for the illustration of property lines and related fuel treatments. It is the intent of the developer to develop in the future a 5.5-acre parcel to the north of this project as general commercial and a larger 101.2-acre parcel to the south as estate residential properties.

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. 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 modifications 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

Developer/Applicant:
Western Realco, LLC
500 Newport Center Drive, Suite 630
Newport Beach, CA 92660

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

The purpose of this FPP 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 FPP that provide additional information shall be considered part of this FPP. This FPP 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 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 features, where required, due to high fire hazard wildland fuels.
- Landscaping criteria deployed around all planned structures.
- Building construction and design criteria.
- A review of ignition resistant building features; community protection systems (e.g. water and access); and specifications to assure these plans, features and systems adequately protect life and property.

This FPP is based upon requirements listed in the Wildland-Urban Interface (WUI) Development Standard Guidelines; California Code of Regulations Title 24, Part 9 and Title 14, Section 1280; 2019 California Fire Code and Local Amendments including Appendices to Chapters 1 & 4 and Appendices B, F & H; Chapter 7A-2019 California Building Code; 2019 California Residential

Code (CRC) R327; California Government Code, sections 51175 through 51189; California Public Resources Code Sections 4201 through 4204; the 2019 version of the National Fire Protection Association (NFPA) Standard 13; 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 GRRBP 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 as there are wildland fuels surrounding the development on all sides. The greatest threat comes from the adjacent undeveloped properties and steep terrain. There is potential for wildfire to enter the project on several fronts thus exposing numerous structures to wildfire convective and radiant heat and embers simultaneously.

2.1 Weather Review and Assessment

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. Data for all RAWS is archived in the Western Region Climate Center in Reno, Nevada The closest active RAWS to the Green River Ranch Industrial Development project is the Corona #2 RAWS located at Latitude 33° 49' 08" N and Longitude 117° 34' 25" W at an elevation of 1,968 feet and approximately 5.9 miles from the project. This is approximately 1,350 feet higher than the Green River Ranch Business Park project site. Winds will tend to be lower within the project to this weather station.

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. 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.

There are two critical weather patterns to the project area. The first is a hot, dry offshore wind, typically called a Santa Ana. Such wind conditions are usually associated with strong (>50 MPH), hot, dry winds with very low (<15%) relative humidity. Santa Ana winds originate over the dry desert land and can occur anytime of the year; however, they generally occur in the late fall (September through November). This is also when non-irrigated vegetation is at its lowest moisture content.

The second critical weather pattern is a down slope wind condition known as the “Elsinore Effect” (this phenomenon was first observed in the Lake Elsinore area). This weather pattern occurs occasionally from May through November during days of record setting high temperatures in the inland valleys. At the same time, cooler air masses often extend west over the Pacific Ocean on the coast side of the Santa Ana Mountains and these cooler air masses are literally sucked over the top of the Santa Ana Mountains. This phenomenon occurs because of the vacuum created when high temperatures and solar heating heat the valley floor and plains on the eastside of the Santa Ana

Mountain Range. As these lands heat up the warmer air rises very rapidly throughout the morning and into midafternoon creating severe instability. The cooler air on the coast side is heavier than the warm air and slides right down the eastern and northern slops to replace the rising air. Wind speeds along the ridge tops can exceed 60 mph. As this cooler air slides down the eastern and northern slopes, wind speeds will drop down to 30 to 40 mph as they reach the valley floor.

The "Elsinore Effect" occasionally occurs when there is a wildfire burning on the east or north side of the Santa Ana Mountains. The down slope winds will push wildfires down slope, usually with tragic results, causing significant property losses and loss of life. In this case, the "Elsinore Effect" will push wildfires burning south and east of the project area down the canyons and undeveloped land that borders the south and east sides of this project. Below in illustrations #1 and #2 are graphs of weather data for the Corona #2 RAWS taken from September 1 to December 30th. Note that when winds are strong, they are often associated with low relative humidity.

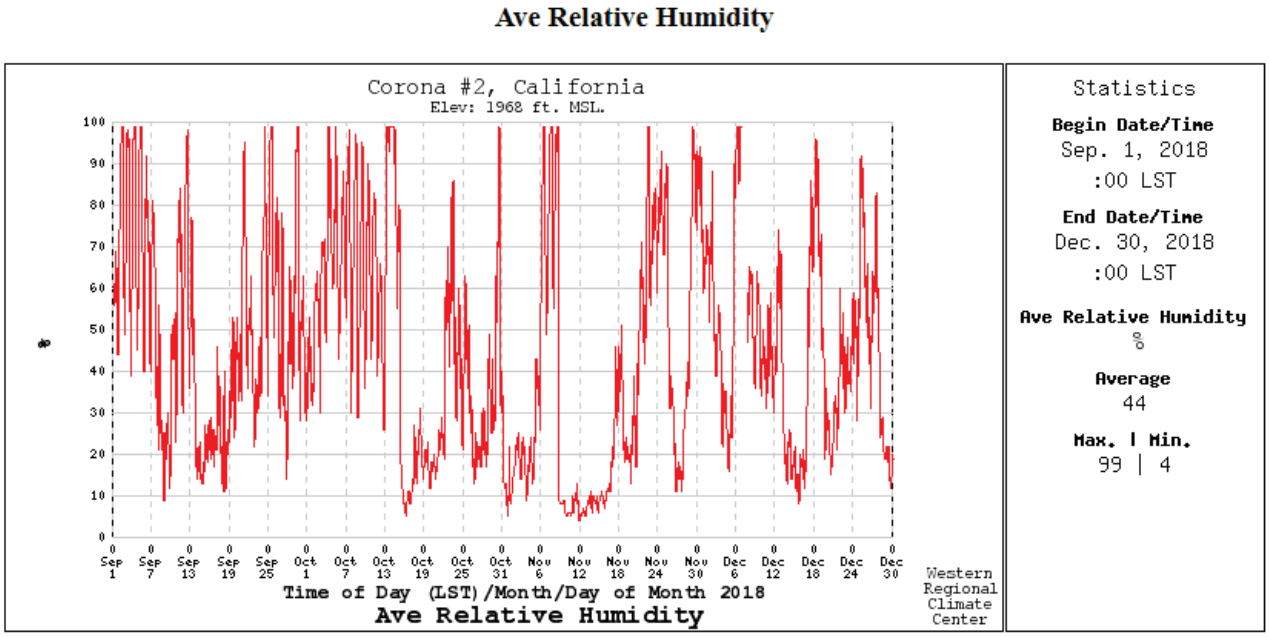

Illustration #1 – Average Relative Humidity For The Corona #2 RAWS. The Lowest Humidity Recorded Was 4 Percent.

Maximum Wind Gust

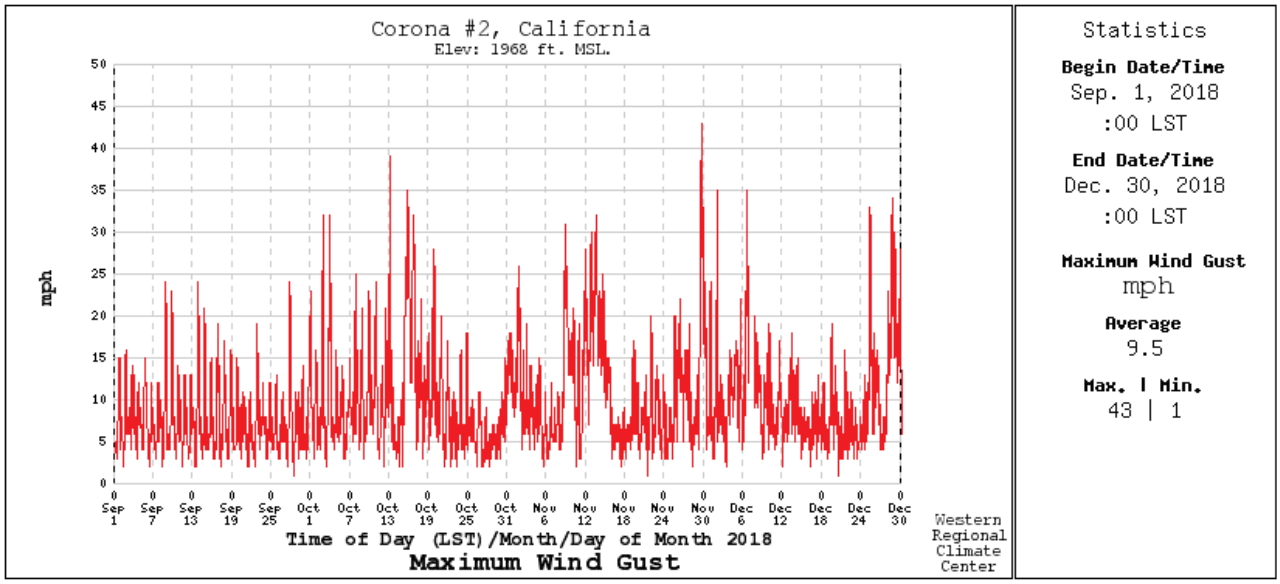

Illustration #2 – Maximum Wind Gust For the Corona #2 RAWS. The Highest Recorded Wind Gust In The Fall of 2018 Was 43 MPH.

2.2 Off-Site Fire Hazard and Risk Assessment

The Green River Ranch Business Park property is located south of the 91 Freeway at the western end of the City of Corona. A few commercial properties exist at the northeast corner of the project on the east side of Dominguez Ranch Road (see Photo #1). The approximate elevation of the building pads range between 560 and 580 feet. West and southwest of the project, ridges and canyons extend up and into the Santa Ana Mountains of the Cleveland National Forest. The northern boundary abuts Green River Ranch Road. Across this road is a 5-acre lot owned by the applicant that is currently covered in brush and scattered trees (see Photo #2).

Photo #2 - Looking Northeast From Fresno Road Where It Intersects Green River Road. The Project Lies To The Rear Of This View. The Vegetated Land Across Green River Road Is Scheduled To Be Developed As Commercial Property By Developers In The Future.

Historically, wildland fires occasionally burned into the City of Corona from the Cleveland National Forest often pushed by moderate west to southwest winds. While these winds and fires are not frequent, they are considered in this FPP. 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 and early fall (June through October) months. These winds may blow from 20-30 MPH. It is also reasonable to expect Santa Ana winds in the range of 50-60 MPH within this portion of Riverside County.

Northern Boundary – To the north is Green River Road as shown in Photo #2. A fire starting along the 91 freeway during a strong Santa Ana wind condition would blow embers directly toward the Development. Note that the 5-acre parcel shown between Green River Road and the 91 freeway is scheduled to be developed by the applicant in the future. Plant succession will likely maintain the current vegetative cover to a combined Fuel Model FM – sh5, High Load Dry Climate Shrub (75%) and gr4 – Moderate load, dry climate grass (25%). A fire burning in this Fuel Model during a hot, dry Santa Ana wind condition is likely to burn with high intensity and to spread rapidly across the landscape.

It is reasonable to expect Santa Ana winds in the range of 40-60 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 fortunately are not in alignment with the proposed development which is beneficial. A fire burning under this wind condition and in the fuels along the northern boundary will burn across realatively flat land.

Required fuel treatments, irrigated landscaping, installation of ignition resistant construction, and additional construction requirements (Section 7.1) should be sufficient to mitigate any threats from radiant heat or direct flame impingement.

Photo #3 - Looking Southeast From Fresno Road. The Project Lies In this Relatively Flat Area Beginning At The Base Of The Hills.

Eastern Boundary Fuels - The eastern boundary (See Photo #3) abuts both undisturbed land and Dominguez Ranch Road as shown in northeast corner of Photo #1. The eastern boundary is scheduled to have manufactured slopes and a new emergency access roadway coming into the development from Dominguez Ranch Road. Further to the east are existing commercial properties located along Green River Road. A few scattered Oak trees exist along the eastern boundary but will add little to projected fire behavior. The current vegetative cover is a combined Fuel Model FM – sh5, High Load Dry Climate Shrub (75%) and gr4 – Moderate load, dry climate grass (25%). The required irrigated fire resistant landscape planted on the slopes combined with the installation of ignition resistant construction, parking lots, emergency access roadway and the construction requirements found in (Section 7.1) should be sufficient to mitigate any threats from wildfire and embers coming from the east.

Southern Boundary - The southern boundary of the Green River Ranch Business Park abuts undeveloped land which is planned to become Estate Residential Properties in the future as this 101.2-acre parcel is owned by the developers (See Photo #4). The typical fuel model for this southern

boundary is a combined Fuel Model FM – sh5, High Load Dry Climate Shrub (50%) and gr4 – Moderate load, dry climate grass (50%). Southwest or West winds of up to 30-MPH may occur along the southern boundary. These "*rare event*" dry winds pose a threat to the structures near the southern project boundary, mostly from embers from a wildland fire occurring to the south in the adjacent undeveloped land. However, large manufactured slopes will extend from the project boundary towards the development. All the wildland fuels will be removed within their footprint which is beneficial. These slopes will terminate in parking areas or roadways, thus creating a large irrigated and hardscape zone between the proposed buildings and wildland fuels. The required fuel treatments, installation of ignition resistant construction, and additional construction requirements (Section 7.1) should be more than sufficient to mitigate any threats from radiant heat or direct flame impingement.

Photo #4 - Looking South Toward The Southern Boundary At The Base Of The Hills. The Development Will Sit In The Foreground. Due To Previous Disturbances, Vegetative Fuels In The Foreground Are Light To Moderate. These Fuels Would All Be Removed During Grading.

Photo #5 - Looking West Toward the Western Boundary. Note the Continuous Vegetative Cover. All these Fuels Will Be Removed in the Foreground During Grading.

Western Boundary - The western project boundary is a wildland fire threat to the proposed project. A wildland fire burning west of the project during a "*rare event*" West or Southwest wind could burn with high intensity towards the development. Fuels in the area are moderate to heavy (see Photo #5). Slopes in the adjacent open space range from 25 – 40%. The heavier fuels are located on the northern aspects of the hillsides. The project biologist, Glenn Lukos Associates, Inc. reported that one of the larger plant communities is California Brittlebush Scrub. Grasslands are more common on west facing slopes exposed to the sun.

The current vegetation to the west is not mature due to the recent 2017 Canyon 1 fire. This area has been subjected to several wildfires during the past 50 years. The typical fuel model for this western boundary is a combined Fuel Model FM – sh5, High Load Dry Climate Shrub (70%) and gr4 – Moderate load, dry climate grass (30%).

Most of the proposed buildings are located downhill and are not in alignment from the expected fire behavior which is beneficial. In addition, parking areas and roadways separate the buildings from the wildland fuels. The required fuel treatments, installation of ignition resistant construction, and additional construction requirements (Section 7.1) should be sufficient to mitigate any threats from radiant heat or direct flame impingement. The greatest threat will be from embers from a wildfire occurring to the west in the undeveloped wildlands.

2.3 On-site Fire Hazard and Risk Assessment

All of the interior fuels will be removed during grading; therefore, there are no wildland fire hazards anticipated within the development.

3.0 Predicting Wildland Fire Behavior

The BEHAVE Plus 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 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 LLC***. used the BEHAVE Plus 5.0.5 Fire Behavior Prediction Model to make the fire behavior assessments for the Green River Ranch Business Park 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 in the open space, adjacent to, and bordering the proposed Green River Ranch Business Park project. These projections are based on scenarios that are "worst case" Riverside County fire weather assumptions in the vicinty of the project area. Weather data was obtained from the RAWS (Remote Automatic Weather Station) network stations closest to the project area.

Five scenarios are depicted below in Tables 3.1.1 through 3.1.5. All tables display the expected Rate of Fire Spread (expressed in feet/minute), Fireline Intensity (expressed in btu/ft/s) 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. At the bottom of each table is the Expected Fire Behavior in treated fuels (Zone 2) described in Section 6.2.

Table 3.1.1 *Fire Scenario #1 - Fire Approaching from the North* *(Late Fire Season With 60 MPH North, Northeast Wind Conditions)* Northern Boundary Fuels	
Fire Behavior Calculation Input Data • 10 percent slope • 60 mph 20-foot wind speed • 0° aspect from north • 45° wind direction	**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……..30% * Live Woody Fuel Moisture of…….....50%
Expected Fire Behavior – Combined Fuel Model **Sh5 – High Load, Dry Climate Shrub (75%) and Gr4 – Moderate Load, Dry Climate Grass (25%)**	
Rate of Spread - 1,263 ft/min	
Fireline Intensity - 38,437 btu/ft/s	
Flame Length - 57.8 feet	
Expected Fire Behavior in *Treated Fuels* (Zone 2) **Combined Fuel Fuel [Model Tl6 – Moderate Load Hardwood Litter (60%) and GR1 Short, Sparce, Dry Climate Grass (40%)]**	
Rate of Spread - 167.6 ft/min	
Fireline Intensity - 592.0 BTU/ft/s	
Flame Length - 8.5 feet	

Table 3.1.2 *Fire Scenario #2 - Fire Approaching from the East or Northeast* *(Late Fire Season With 60 MPH North, Northeast Wind Conditions)* Eastern Boundary Fuels	
Fire Behavior Calculation Input Data • 5 percent slope • 60 mph 20-foot wind speed • 270° aspect from north • 45 ° wind direction	**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…...30% * Live Woody Fuel Moisture of…….....50%
Expected Fire Behavior - Combined Fuel Model **Sh5 – High Load Dry Climate Shrub**	
Rate of Spread - 1,261 ft/min	
Fireline Intensity - 38,385 btu/ft/s	
Flame Length - 57.8 feet	
Expected Fire Behavior in *Treated Fuels* (Zone 2) **Combined Fuel Fuel [Model Tl6 – Moderate Load Hardwood Litter (60%) and GR1 Short, Sparce, Dry Climate Grass (40%)]**	
Rate of Spread - 146.1 ft/min	
Fireline Intensity - 591.0 BTU/ft/s	
Flame Length - 8.5 feet	

Table 3.1.3 ***Fire Scenario #3 - Fire Approaching from the South or Southwest*** ***(Late Fire Season With 30 MPH South, Southwest and West Wind Conditions)*** **Southern Boundary Fuels**	
Fire Behavior Calculation Input Data • 30 percent slope • 30 mph 20-foot wind speed • 0º aspect from north • 180 º S wind direction	**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.…...30% * Live Woody Fuel Moisture of…….....60%
Expected Fire Behavior Combined Fuel Model **Sh5 – High Load, Dry Climate Shrub (50%) and Gr4 – Moderate Load, Dry Climate Grass (50%)**	
Rate of Spread - 510.4 ft/min	
Fireline Intensity - 14,105 btu/ft/s	
Flame Length - 36.5 feet	
Expected Fire Behavior in *Treated Fuels* (Zone 2) **Combined Fuel Fuel [Model Tl6 – Moderate Load Hardwood Litter (50%) and GR1 Short, Sparce, Dry Climate Grass (50%)]**	
Rate of Spread - 54.9 ft/min	
Fireline Intensity - 200.0 BTU/ft/s	
Flame Length - 5.2 feet	

Table 3.1.4 ***Fire Scenario #4 - Fire Approaching from the South or Southwest*** ***(Late Fire Season With 40 MPH "Lake Elsinor Effect" South, Southwest and West Wind Conditions)*** **Southern Boundary Fuels**	
Fire Behavior Calculation Input Data • 60 percent slope • 30 mph 20-foot wind speed • 0º aspect from north • 225 º SW wind direction	**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.…...30% * Live Woody Fuel Moisture of…….....60%
Expected Fire Behavior - Combined Fuel Model **Sh5 – High Load Dry Climate Shrub (50%) and GR4 – Moderate Load Dry Climate Grass (50%)**	
Rate of Spread - 1,030.2 ft/min	
Fireline Intensity - 26,122 btu/ft/s	
Flame Length - 48.4 feet	
Expected Fire Behavior in *Treated Fuels* (Zone 2) **Combined Fuel Fuel [Model Tl6 – Moderate Load Hardwood Litter (60%) and GR1 Short, Sparce, Dry Climate Grass (50%)]**	
Rate of Spread - 123.2 ft/min	
Fireline Intensity - 437.0 BTU/ft/s	
Flame Length - 7.4 feet	

Table 3.1.5 ***Fire Scenario #5 - Fire Approaching from the South or Southwest*** ***(Late Fire Season With 30 MPH South, Southwest and West Wind Conditions)*** **Western Boundary Fuels**	
Fire Behavior Calculation Input Data • **65 percent slope** • **30 mph 20-foot wind speed** • **90º aspect from north** • **180 º SW wind direction**	**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.…...30%** *** Live Woody Fuel Moisture of…….....60%**
Expected Fire Behavior - Combined Fuel Model **Sh5 – High Load, Dry Climate Shrub (70%) and Gr4 – Moderate Load, Dry Climate Grass (30%)**	
Rate of Spread - 478.2 ft/min	
Fireline Intensity - 14,233 btu/ft/s	
Flame Length - 36.6 feet	
Expected Fire Behavior in *Treated Fuels*(Zone 2) **Combined Fuel Fuel [Model Tl6 – Moderate Load Hardwood Litter (50%) and GR1 Short, Sparce, Dry Climate Grass (50%)]**	
Rate of Spread - 55.9 ft/min	
Fireline Intensity - 205.0 btu/ft/s	
Flame Length - 5.2 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 Green River Ranch Business Park (see APPENDIX 'D' for the description of Ignition Resistant Construction), wind driven convective heat and radiant heat issues are addressed in this FPP.

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 a 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 Green River Ranch Business Park 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 or structures 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 for the western boundary scenario in Table 3.1.3 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 property owner/manager shall be required (see Section 6) to maintain the properties to Zone 1 and Zone 2 Fuel Modification standards and shall keep the roof and any rain gutters free of leaves, needles and other combustible debris. All combustible materials must be properly stored away from each structure so that burning embers falling on or near the structure have no suitable host. The Green River Ranch Business Park owners are responsible for maintaining their buildings and for keeping all doors and windows tightly closed whenever a wildland fire is reported in the vicinity. By requiring

the structures to be constructed of non-combustible roofing, ignition resistant building materials, and the implementation of a required fuel will be the most effective treatment for minimizing structure losses due to the projected flame lengths and associated radiant heat intensities.

4.3 Fire Resistant Plant Palette

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

5.0 Fire Department Response Times

The Green River Ranch Business Park project is within the City of Corona Fire Department's 5-minute initial action response time. The closest Fire apparatus is CFD Fire Station #5 (1.2 miles away) located at the intersection of Green River road and Canyon Crest Drive. It would be the first engine to arrive on scene to the furthest structure (3- or 4-minutes driving time depending on traffic). The second engine would be from CFD Fire Station #3 (4.7 miles away) located near the intersection of Via De Luna and S. Smith Avenue, approximately 9 minutes driving time to the project. The next closest station is Orange County Fire Authority Station #53 located at 25415 La Palma Avenue in Yorba Linda. This station is 4.7 miles away and approximately 9 minutes from the development. Additional agencies such as Riverside County and nearby cities would also likely respond equipment, but they would probably arrive after Corona engines were on-scene.

Although CFD Fire Station #5 and #3 engines may be generally 3-9 minutes away, there is no assurance that any of the engine companies will be in their stations when a wildfire threatens the Green River Ranch Business Park 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*** planned projects use *"defensible space"*, 'Ignition Resistant' building features, and key fuel treatment strategies that enable owners/workers to substantially increase their ability to survive a wildfire on their own and without the loss of any structure. The goal of this FPP, therefore, is to make the Green River Ranch Business Park and its owners/employees as safe as possible and able to survive on their own until firefighting equipment arrives and/or the occupants can be safely evacuated.

6.0 Fuel Modification Zone Descriptions & Required Treatments

Below are the descriptions and required treatments for the Fuel Modification Zones. All distances in this report are measured horizontally. These distances are depicted on the enclosed Fire Protection Plan Map. Fuel treatment in the Green River Ranch Business Park project will require the minimum City of Corona fuel treatments of 50-feet of Irrigated Zone 1 including all manufactured slopes located within the project and 30 feet of fuel treatment on either side of each Roadway. Zone 2 is not required as the

combination of roadside fuel treatment and Zone 1 landscaping results in 107 feet or more of fuel treatment around each structure.

The owner/manager of each structure will be responsible for maintaining their fuel modification Zones 1 and 2 within their lot boundary. In the event a structure is repossessed, the person/unit/agency holding title to the lot will be responsible for the maintenance. All highly flammable plant species identified in Appendix A shall be permanently removed from the thinning zone due to their susceptibility to wildland fire.

6.1 Irrigated Zone 1 - Owner/Manager Maintained  *(Shown as on the Fire Protection Plan 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 area around the structure(s) (front, back and side yards) and that is located within 50 feet of a structure and all manufactured slopes and common areas located within the project. It is measured from the exterior wall 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 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, primarily used for parking.

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, succulent or leathery leaf species with high moisture content are the most 'fire resistant'. Refer to APPENDIX 'A' for the Prohibited Plant list.
- Zone 1 shall be cleared of all fire prone and prohibited plant species (see APPENDIX 'A').
- Landscape designs using hardscape features such as driveways, swimming pools, concrete, rock, pavers, and similar non-combustible features to break up fuel continuity within Zone 1A are encouraged.
- Landscaping shall be irrigated and primarily consist of fire-resistant, maintained native or ornamental plantings.
- Plants shall be low-growing and 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

- Maintenance shall be year round by the owner as required by this FPP 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 shall be cut to four inches or less in height.

- Trees shall be maintained to 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 (http://tcia.org/business/ansi-a300-standards).

6.2 Thinning Zone 2 – Owner/Manager Maintained (*Shown as*  *on the Fuel Modificatio Plan Map).*

Zone 2 is the area 50-to-100 feet away from any structure. Fuel treatment shall include the removal of 50 percent of the above ground vegetation including the designated fire prone species found later in this APPENDIX A. Root systems are to be retained to protect the hillsides from erosion. This zone includes single or small clusters of trimmed fire resistant native and ornamental plants, up to 48 inches in height, and trimmed native or ornamental trees limbed up 6 feet from the ground.

Mulches, chips, and other small multi-cuttings (cut to less than 2 inches in diameter and 4 inches in length) should be evenly spread over the area to prevent grass and weed encroachment within the treated areas. This mulching concept helps to maintain the soil moisture for the designated plants and minimizes soil erosion. All native grasses or weeds are to be mowed or weed-whipped to a 4-inch stubble height.

6.3 Roadside Fuel Treatment – Owner/Manager Maintained *(Shown as*  *on the Fuel Modification Plan Map*).

All publicly accessible roads within the Green River Ranch Business Park Project shall be cleared of all combustible vegetation for a minimum of 30-feet of each roadway and landscaped per the criteria outlined in Irrigation Zone 1. Sidewalks and related non-combustible improvements may be placed in this fuel treatment zone to further increase the level of protection. The purpose of this action is to minimize the cutting-off of workers, owners and guests from safely evacuating the area due to a wildland fire occurrence and for safe ingress by emergency responders.

6.4 Manufactured Slopes Common Areas - (Owner/Manager Maintained). *(Shown as*  *on the Fuel Modification Plan Map*).

Temporarily irrigated, irrigated and maintained slopes shall be planted with fire resistant vegetation. Maintenance of these manufactured slopes will be the responsibility of the Owner and/or Manger. Long-term maintenance will meet Fuel Modification Zone 2 criteria described in Section 6.2. An example of an irrigated manufactured slope can be seen in Photo No. 6.

Photo #6 - An Example of a Manufactured Slope That is Irrigated or Temporarily Irrigated Until Plant Establishment.

6.5 Right-of-Way - City of Corona Maintained. (*Shown as* ■ *on the Fuel Modification Plan Map).*
An area on land that is owned by the City of Corona and maintained to Roadside Fuel Treatment criteria (See Section 6.3).

6.6 Open Space – Riverside County Conservation Authority Maintained. (*Shown as* ■ *on the Fuel Modification Plan Map).*
An area of land that is maintained by the Riverside County Conservation Authority that will remain wildland fuels. The distance from Building 1 to the Open Space is 87 feet as shown on the Fire Protection Plan Map (Section 10.0). The area between Building 1 and the open space consists of paved parking area, roadway, or irrigated Zone 1 landscaping (Section 6.1). This separation and fuels treatments will be more than sufficient to protect the structure from 48.4-foot flame lengths.

6.7 Zone Markers – Owner/Manager Maintained *(Shown as* ● *on the Fire Protection Plan Map)*
All exterior boundaries on the east side of the project with Zone 2 abutting wildland fuels shall be permanently marked on the ground where it transitions to 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 shall be painted a bright "day glow" orange to improve visibility. These Fuel Modification Zone markers must be spaced so that the markers on each side of an installed marker can be seen from that marker. (See APPENDIX 'E' for an example).

7.0 Construction Standards

All structures within the Green River Ranch Business Park 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 2018 versuib of the International Wildland-Urban Interface Code (IWUIC), including amendments; related Ordinances; the 2019 CA Fire and Building Code and Chapter 7A-California Building Code. For a description of the current construction requirements as of the date of this report see APPENDIX 'D'. 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/manager is not restricted from having concrete/brick patios, or walkways within the Fuel Modification 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:

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

7.1 Additional Construction Requirements

In the event of a wildfire in the adjacent wildlands, the structures will be showered with embers. To mitigate this hazard the following additional construction requirements shall be implemented.

1. Interior fire sprinklers shall be installed in the attics over offices and similar spaces. Copper piping is required in the attics; Attic spaces sprinkler heads will only be permitted in the attic if listed heads are used in accordance with their listing.
2. All vents in the structures shall be "Brandguard", "O'Hagin Fire & Ice® Line – Flame and Ember Resistant" or equivalent type vents.
3. All operable windows shall be provided with metal mesh bug screens over the operable opening to replace traditional vinyl bug screens to prevent embers from entering the structure during high wind conditions when windows may be inadvertently left open.
4. All swinging exterior doors shall be self closing (e.g., pneumatic or spring loaded hinges) and self-latching.

8.0 Owner and Employee Education

A copy of this FPP shall be available in Green River Ranch Business Park Manager office for review by any potential renter/buyer. **The Office shall provide a copy of this Fire Protection Plan to each new owner at the close of escrow. Subsequent sellers shall include copies of this FPP in all escrow papers.**

The Green River Ranch Business Park Owners shall inform its employees 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 relocation is not possible and egress is cut-off by the fire, the employees should seek shelter within the structure they are working until the wildland fire passes through their area. The ignition resistant buildings will have a 'defensible space' area around each structure for firefighters to make their stand in the protection of each structure. In the event firefighting forces are not readily available, the defensible space will substantially increase the probability of 'structure survivability'.

Should employees not be able to relocate, they should ensure that all doors 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 structure is present when smoke or darkness may otherwise obscure visibility. In addition, combustible materials shall not be stored within 30 feet of any structure.

Each owner/renter shall be aware of the herein described fire protection measures by reviewing this FPP of the types of non-combustible construction and plant materials that are allowed within the the designated fuel treatment zones. **A copy of this plan shall be provided to a future owner 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 and Lake Elsinore wind events.

Where this FPP 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.

9.0 Infrastructure

Below is a review and discussion of water supply and access roads/driveways and gates that are to be utilized in the development of Green River Ranch Business Park.

9.1 Water Supply

The Green River Ranch Business Park 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 each fire protection system 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. 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 the 2019 California Fire Code as amended by the City of Corona. The minimum fire flow shall be 3,500 GPM at 20 psi

residual pressure for a 4-hour duration for all industrial buildings and 3000 GPM for 3 hours for the commercial buildings in accordance with NFPA Standard 13.

Hydrant installation shall conform to City of Corona Public Works Standard #412 and the 2019 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 #531. Hydrant spacing shall be 250' between hydrants, as measured from an approved emergency access route. Fire hydrants shall be tested, accepted and placed in service prior to the delivery of any combustible materials to the project site per CFC 3312.1.

9.2 Access Roads/Driveways and Gates

Primary public access into the project is via Green River Road from the north and Fresno Road from the west. Dominguez Ranch Road from the east shall be a gated emergency access only roadway.

Driveways and access roads within the development shall be termed 'Fire Access Roads' within this document. All fire access roads shall meet the requirements of the CFD, and shall be all weather surface capable of supporting loads of 70,000 lbs gross vehicle weight per CFC 3310.1. Access to all exterior 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. The maximum grade shall be 8 percent per City of Corona Standard Plan Number 100. Fire access roads shall be inspected and approved by the fire marshal prior to the delivery of combustible materials, per CFC3310.1.

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 major roadways 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 always be equipped to allow for automatic egress from the Green River Ranch Business Park.

10.0 Fire Protection Plan Map

Attached in a separate file is the Fire Protection Plan Map depicting the location of all proposed fuel treatment locations as well as fire access roads, and development boundaries.

APPENDIX ‘A’

Prohibited Plant List

APPENDIX 'A'

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 vulgare	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

- Except:
  Acacia redolens desert carpet (Desert Carpet ground cover)

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

APPENDIX ‘B’

Defensible Space Landscaping

Defensible Space Landscaping – Plant Pallet for Fuel Modification in Riverside, Orange and San Diego Counties

	Code	Botanical Name	Common Name	Plant Form
1.	W	Abelia x grandiflora	Glossy Abelia	Shrub
2.	_	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	Wolly Yarrow	Low shrub
6.	X	Aeonium decorum	Aeonium	Ground cover
7.	X	Aeonium simsii	Aeonium	Ground cover
8.	W	Agaave attenuata	Century Plant	Succulent
9.	W	Agave shawii	Shaw's Century Plant	Succulent
10.	N	Agave victoriae-reginae	Agave	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	Torch Aloe	Shrub
15.	N	Aloe aristata	Dwarf Aloe	Ground cover
16.	N	Aloe brevifolia	Aloe	Ground cover
17.	W	Aloe Vera	Medicinal Aloe	Succulent
18.	W	Alyogyne huegelii	Blue Hibiscus	Shrub
19.	_	Ambrosia chamissonis	Beach Bur-Sage	Perennial
20.	_	Amoroha fruticosa	Western False Indigobush	Shrub
21.	W	Anigozanthus flavidus	Kangaroo Paw	Perennial Accent
22.	_	Antirrhinum nuttalianum ssp. Nuttatianum	Beard Tongue	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	Arctostaphyis edmundsil	Little Sur Manzanita	Ground cover
27.	_	Arctostaphylos glandulosa	Eastwood Manzanita	Shrub
28.	W	Arctostaphylos hookeri 'Monterey Carpet'	Monterey Carpet Manzanita	Low shrub
29.	N	Arctostaphylos pungens	Heather	Shrub
30.	N	Arctostaphylos refugioensis	Refugio Manzanita	Shrub
31.	W	Arctostaphylos uva-ursi	Bearberry	Ground cover
32.	W	Arctostaphylos x 'Greensphere'	Greensphere Manzanita	Shrub
33.	N	Atemisia caucasia	Caucasian Artemisia	Ground cover
34.	N	Artemisia pycnocephaia	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

X = Plant Species prohibited in wet and dry fuel modification zones adjacent to native open space lands. Acceptable in all other fuel modification zones and locations.

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 zones and locations.

_ = Plant species native to Riverside, Orange and San Diego Counties. 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 zones and locations.

* = If seed collected from local seed source.

** = Not native plant species but can be used in all fuel modification zones.

Defensible Space Landscaping – Plant Pallet for Fuel Modification in Riverside, Orange and San Diego Counties

	Code	Botanical Name	Common Name	Plant Form
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 californica	Hoary Nettle	Subshrub
48.	W	Bromus carinatus	California Brome	Grass
49.		Camissionia cheiranthifolia	Beach Evening Primrose	Perennial subshrub
50.	N	Carissa macracarpa	Green Carpet Natal Plum	Ground cover/shrub
51.	X	Carpibrotus chilensis	Sea Fig Ice Plant	Ground cover
52.	W	Ceanothus gloriosus 'Point Reyes'	Point Reyes Ceanothus	Shrub
53.	W	Ceanothus griseus 'Louse 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.		Ceanothus megacarpus	Big Pod Ceanothus	Shrub
57.	W	Ceanothus prostrastus	Squaw Carpet Ceanothus	Shrub
58.		Ceanothus spinosus	Green Bark Ceanothus	Shrub
59.	W	Ceanothus verrucosus	Wart-Stem Ceanothus	Shrub
60.	W	Cerastium tomentosum	Snow-in-summer	Ground cover/shrub
61.	W	Ceratonia siliqua	Carob	Tree
62.	W	Cercis occidentalis	Western redbud	Tree/Shrub
63.	X	Chrysanthemum leucanthemum	Oxeye Daisy	Groundcover
64.	W	Cistus hybridus	White Rockrose	Shrub
65.	W	Cistus incanus	Mauve Rockrose	Shrub
66.	W	Cistus incanus salviafolius	Sageleaf Rockkrose	Shrub
67.	W	Cistus purpureus	Orchid Rockrose	Shrub
68.	W	Citrus species	Citrus	Tree
69.		Clarkia bottae	Showy Fairwell to Spring	Annual
70.		Cneoridium dumosum	Bushrue, Pt. Reyes Ceanothus	Shrub
71.		Collinsia heterophylla	Chinese Houses	Annual
72.	W	Comarostaphylis diversifolia	Summer Holly	Shrub
73.	N	Convolvulus cneorum	Bush Morning Glory	Shrub
74.	W	Coprosma kirkii	Creeping Coprosma	Ground cover/Shrub
75.	W	Coprosma pumila	Prostrate Coprosma	Low Shrub
76.		Coreopsis californica	California coreopsis	Annual
77.	W	Coreopsis lanceolata	Coreopsis	Ground cover

X = Plant Species prohibited in wet and dry fuel modification zones adjacent to native open space lands. Acceptable in all other fuel modification zones and locations.

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Defensible Space Landscaping – Plant Pallet for Fuel Modification in Riverside, Orange and San Diego Counties

	Code	Botanical Name	Common Name	Plant Form
78.	N	Correa pulchella	Australian Fushia	Ground cover
79.	W	Cotoneaster buxifolius	Grayleaf Cotoneaster	Shrub
80.	W	Cotoneaster congestus Likiang	Likiang Cotoneaster	Ground cover/Vine
81.	X	Crassula lactea	Taylor's Parches	Ground cover
82.	X	Crassula ovata	Jade Tree	Shrub
83.	X	Crassula tetragona	Jade Plant	Shrub
84.	W	Croton californicus	California Croton	Ground cover
85.	X	Delosperma 'alba'	White Trailing Ice Plant	Ground cover
86.		Dendromecon rigida	Bush Poppy	Shrub
87.		Dichelostemma capitatum	Blue Dicks	Herb
88.	N	Distictis buccinatoria	Blood-Red Trumpet Vine	Vine/Climbing vine
89.	N	Dodonaea viscosa	Hopseed Bush	Shrub
90.	X	Drosanthemum floribundum	Rosea Ice Plant	Ground cover
91.	X	Drosanthemum hispidum	Ice Plant, Showy Dewflower	Ground cover
92.		Dudleya lanceolat	Lance Leaved Dudleya	Succulent
93.		Dudleya pulverulenta	Chalk Dudleya	Succulent
94.	W	Elaeagnus pungens	Silverberry	Shrub
95.		Encelia californica	California Encelia	Small shrub
96.		Epilobium canum (Zauschneria californica)	Hoary California Fushia	Shrub
97.		Eriastrum sapphirinum	Mojave Wolly Star	Annual
98.	N	Eriobotrya japonica	Loquat	Tree
99.		Eriodictycon crassifolium	Thick-Leaf Yerba Santa	Shrub
100.		Eriodictycon trichocalyx	Mojave Wooly Star	Annual
101.	W	Eriophyllum confertiflorum	Golden Yarrow	Shrub
102.	W	Erythrina species	Coral Tree	Tree
103.	W	Eschscholzia californica	California Poppy	Flower
104.	X	Eschscholzia mexicana	Mexican Poppy	Herb
105.	N	Euonymus fortunei	Winter Creeper Euonymus	Ground cover
106.	N	Fiejoa sellowiana	Pineapple Guava	Shrub/Tree
107.	N	Fragaria chiloensis	Wild Strawberry/ Sand Strawberry	Ground cover
108.		Frankenia salina	Alkali Heath	Ground cover
109.	W	Fremontodendron californicum	California Flannelbush	Shrub
110.	X	Gaillardiaa x grandiflora	Blanketflower	Ground cover
111.	W	Galvezia speciosa	Bush Snapdragon	Shrub
112.	W	Garrya ellipta	Silktassel	Shrub
113.	X	Gazania hybrids	South African Daisy	Ground cover
114.	X	Gazania rigens leucolaena	Trailing Gazania	Ground cover
115.		Gilia capitata	Globe Gilia	Perennial
116.	W	Gilia lepthantha	Showy Gilia	Perennial

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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 zones and locations.

_ = Plant species native to Riverside, Orange and San Diego Counties. 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 zones and locations.

* = If seed collected from local seed source.

** = Not native plant species but can be used in all fuel modification zones.

Defensible Space Landscaping – Plant Pallet for Fuel Modification in Riverside, Orange and San Diego Counties

	Code	Botanical Name	Common Name	Plant Form
117.	W	Gilia tricolor	Bird's Eyes	Perennial
118.	W	Ginko biloba	Maidenhair Tree	Tree
119.	_	Gnaphalium californicum	California Everlasting	Annual
120.	W	Grewia occidentalis	Starflower	Shrub
121.	_	Grindelia stricta	Gum Plant	Ground cover
122.	N	Hakea suaveolens	Sweet Hakea	Shrub
123.	W	Harde bergia comptoniana	Lilac Vine	Shrub
124.	N	Helianthemum mutabile	Sunrose	Ground cover/Shrub
125.	_	Helianthemum scoparium	Rush Rose	Shrub
126.	_	Heliotropium curassavicum	Salt Heliotrope	Ground cover
127.	X	Helix canariensis	English Ivy	Ground cover
128.	W	Hesperaloe parviflora	Red Yucca	Perennial
129.	_	Heteromeles arbutifolia	Toyon	Shrub
130.	X	Hypericum calcycinum	Aaron's Beard	Shrub
131.	N	Iberis sempervirens	Edging Candytuft	Ground cover
132.	N	Iberis umbellatum	Globe Candytuft	Ground cover
133.	_	Isocoma menziesii	Coastal Goldenbush	Small shrub
134.	_	Isomeris arborea	Bladderpod	Shrub
135.	W	Iva hayesiana	Poverty Weed	Ground cover
136.	N	Jublans californica	California Black Walnut	Tree
137.	_	Juncus acutus	Spury Rush	Perennial
138.	_	Keckiella antirrhinoides	Yellow Bush Penstemon	Subshrub
139.	_	Keckiella cordifolia	Heart Leaved Penstemon	Subshrub
140.	_	Keckiella ternata	Blue Stemmed Bush Penstemon	Subshrub
141.	W	Kniphofia uvaria	Red Hot Poker	Perennial
142.	W	Lagerstroemia patersonii	Crape Myrtle	Tree
143.	X	Lampranthus aurantiacus	Bush Ice Plant	Ground cover
144.	X	Lampranthus filicaulis	Redondo Creeper	Ground cover
145.	X	Lampranthus spectabilis	Trailing Ice Plant	Ground cover
146.	W	Lantana camara cultivars	Yellow Sage	Shrub
147.	W	Lantana montevidensis	Trailing Lantana	Shrub
148.	_	Lasthenia californica	Dwark Goldfields	Annual
149.	W	Lavandula dentataq	French Lavendar	Shrub
150.	W	Leptospermum laevigatum	Australian Tea Tree	Shrub
151.	W	Leucophyllum frutescens	Texas Ranger	Shrub
152.	_	Leymus condensatus	Giant Wild Rye	Large grass
153.	N	Ligustrum japonicum	Texas Privet	Shrub
154.	X	Limonium perezii	Sea Lavender	Shrub
155.	W	Liquidambar styraciflua	American Sweet Gum	Tree
156.	W	Liriodendron tulipifera	Tulip Tree	Tree

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Defensible Space Landscaping – Plant Pallet for Fuel Modification in Riverside, Orange and San Diego Counties

	Code	Botanical Name	Common Name	Plant Form
157.	X	Lonicera japonica 'Halliana'	Hall's Japanese Honeysuckle	Vining Shrub
158.		Lonicera subspicata	Wild Honeysuckle	Vining Shrub
159.	X	Lotus corniculatus	Bird's Foot Trefoil	Ground Cover
160.	_	Lotus Heermanii	Woolly Lotus	Perennial
161.		Lotus Scoparius	Deerweed	Shrub
162.	W	Lupinus arizonicus	Desert Lupine	Annual
163.	W	Lupinus benthamil	Spider Lupine	Annual
164.	_	Lupinus bicolor	Sky Lupine	Flowering annual
165.		Lupinus sparsiflorus	Coulter's Lupine	Annual
166.	W	Lyonothamnus floribundus ssp. Asplenfolius	Fernleaf Ironwood	Tree
167.	W	Macademia Integrifolia	Macadamia Nut	Tree
168.	W	Mahonia aquifolium 'Golden Abundance'	Golden Abundance, Oregon Grape	Shrub
169.	W	Mahonia nevinii	Nevin Mahonia	Shrub
170.		Malacothamnus fasciculatus	Chaparral Marrow	Shrub
171.	X	Makephora luteola	Trailing Ice Plant	Ground cover
172.	W	Maytenus boaria	Mayten Tree	Tree
173.	W	Melaleuca nesophila	Pink Melaleuca	Shrub
174.	N	Metrosideros excelsus	New Zealand Christmas Tree	Tree
175.	*	Mimulus species	Monkeyflower	Flower
176.		Mirabilis californica	Wishbone Bush	Perennial
177.	N	Myoporum debile	Trailing Myoporum	Shrub
178.	N	Myoporum insulare	Boobialla	Shrub
179.	W	Myoporum parvifolium	Creeping Boobialla	Ground cover
180.	W	Myoporum 'Pacificum'	Trailing Myoporum	Shrub
181.		Nassella [stipa] lepida	Foothill Needlegrass	Ground cover
182.	_	Nassella stipa] pulchra	Purple Needlegrass	Ground cover
183.		Nemophila menziesii	Baby Blue Eyes	Annual
184.	X	Nerium oleander	Oleander	Shrub
185.		Oenothera hookeri	California Evening Primrose	Flower
186.	W	Oenothera speciosa	Showy Evening Primrose	Perennial
187.	X	Ophiopogon japonicus	Mondo Grass	Ground cover
188.	*	Opuntia littoralis	Prickly Pear	Cactus
189.	*	Opuntia oricola	Oracle Cactus	Cactus
190.	*	Opuntia prolifera	Coast Cholla	Cactus
191.	W	Osmanthus fragrans	Sweet Olive	Shrub
192.	X	Osteospermum fruticosum	Trailing African Daisy	Ground cover
193.	X	Parkinsonia aculeata	Mexican Palo Verde	Tree
194.	W	Pelargonium peltatum	Ivy Geranium	Ground cover
195.	X	Penstemon species	Beard Tongue	Shrub

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	Code	Botanical Name	Common Name	Plant Form
196.	W	Photinia Fraseri	Red Robin	Shrub
197.	W	Pistacia chinensis	Chinese pistache	Tree
198.	X	Pittosporum undulatum	Victorian Box	Tree
199.	_	Plantage erecta	California Plantain	Annual
200.	**	Plantago insularis	Woolly Plantain	Annual
201.	X	Plantago sempervirens	Evergreen Plantain	Ground cover
202.	W	Platanus racemosa	California Sycamore	Tree
203.	W	Plumbago auriculate	Plumbago Cape	Shrub
204.	_	Populus fremontii	Western Cottonwood	Tree
205.	X	Portulacaria afra	Elephant's Foot	Shrub
206.	_	Potentilla glandulosa	Sticky Cinquefoil	Subshrub
207.	X	Potentilla tabernaemontanii	Spring Cinquefoil	Ground cover
208.	X	Prunus caroliniana	Carolina Cherry Laurel	Shrub/Tree
209.	_	Prunus ilicifolia ssp. Ilicifolia	Holly Leaved Cherry	Shrub
210.	X	Prunus lyonii	Catalina Cherry	Shrub/Tree
211.	N	Punica granatum	Pomegranate	Shrub/Tree
212.	W	Puya species	Puya	Succulent/shrub
213.	W	Pyracantha species	Firethorn	Shrub
214.	_	Quercus agrifolia	Coast Live Oak	Shrub
215.	_*	Quercus berberdifolia	California Scrub Oak	Shrub
216.	_*	Quercus dumosa	Coastal Scrub Oak	Shrub
217.	X	Quercus engelmannii	Engelmann Oak	Tree
218.	X	Quercus suber	Cork Oak	Tree
219.	X	Rhamnus alaternus	Italian Buckthorn	Shrub
220.	_	Rhamnus californica	California Coffee Berry	Shrub
221.	_	Rhamnus crocea	Redberry	Shrub
222.	_	Rhamnus crocea ssp. Ilicifolia	Hollyleaf Redberry	Shrub
223.	N	Rhaphiolepis species	Indian Hawthorn	Shrub
224.	_	Rhus integrifolia	Lemonade Berry	Shrub
225.	N	Rhus lancea	African Sumac	Tree
226.	_	Rhus ovataa	Sugarbush	Shrub
227.	_	Ribes aureum	Golden Currant	Shrub
228.	_	Ribes indecorum	White Flowering Currant	Shrub
229.	_	Ribes speciosum	Fuschia Flowering Gooseberry	Shrub
230.	W	Ribes viburnifolium	Evergreen Currant	Shrub
231.	*	Romneya coulteri	Matilija Poppy	Shrub
232.	X	Romneya coulteri 'White Cloud'	White Cloud Matilija Poppy	Shrub
233.	W	Rosmarinus officinalis	Rosemary	Shrub
234.	W	Salvia greggii	Autumn Sage	Shrub

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	Code	Botanical Name	Common Name	Plant Form
235.	W	Salvia sonomensis	Creeping Sage	Ground cover
236.		Sambucus mexicana	Mexican Elderberry	Tree
237.	W	Santolina chamaecyparissis	Lavender Cotton	Ground cover
238.	W	Santolina virens	Green Lavender Cotton	Shrub
239.		Satureja chandleri	San Miguel Savory	Perennial
240.		Scirpus acutus	Hard-Stem Bulrush	Perennial
241.		Scirpus californicus	California Bulrush	Perennial
242.	X	Sedum acre	Goldmoss Sedum	Ground cover
243.	X	Sedum album	Green stonecrop	Ground cover
244.	X	Sedum confusum	Stonecrop	Ground cover
245.	X	Sedum x rubrotinctum	Pork & Beans	Ground cover
246.	X	Senecio serpens	Dusty Miller	Ground cover
247.		Sisyrinchium bellum	Blue-Eyed Grass	Ground cover
248.		Solanum douglasii	Douglas Nightshade	Shrub
249.		Solanum xantii	Purple Nightshade	Perennial
250.	W	Stenocarpus sinuatus	Firewheel Tree	Tree
251.	W	Strelitzia nicolai	Giant Bird of Paradise	Perennial
252.	W	Strelitzia reginae	Bird of Paradise	Perennial
253.		Symphoricarpos mollis	Creeping Snowberry	Shrub
254.	W	Tecoma stans [stenolibium stans]	Yellow Bells	Shrub/small tree
255.	X	Tecomaria capensis	Cape Honeysuckle	Ground cover
256.	N	Teucrium chamaedrys	Germander	Ground cover
257.	N	Thymus serpyllum	Lemon Thyme	Ground cover
258.	N	Trachelospermum jasminoides	Star Jasmine	Shrub
259.		Trichostems lanatum	Wolly Blue-Curls	Shrub
260.	X	Trifolium hirtum 'Hyron'	Hyron Rose Clover	Ground cover
261.	X	Trifolium fragiferum 'O'Connor's'	O'Connor's Legume	Ground cover
262.		Umbellularia californica	California Laurel	Tree
263.		Verbena Lasiostachys	Western Vervain	Perennial
264.	N	Verbena peruviana	Peruvian Verbena	Ground cover
265.	X	Verbena species	Verbena	Ground cover
266.	X	Vinca minor	Dwarf Periwinkle	Ground cover
267.		Vitis Girdiana	Desert Wild Grape	Vine
268.	X	Vulpia myuros 'Zorro'	Zorro Annual Fescue	Grass
269.	W	Westringia fruticosa	Coast Rosemary	Shrub
270.	W	Xanthorrhoea species	Grass Tree	Perennial / shrub
271.	W	Xylosma congestum	Shiny Xylosma	Shrub
272.	X	Yucca species	Yucca	Shrub
273.		Yucca whippiei	Yucca	Shrub

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APPENDIX ‘C’

Literature References

Literature References

1. Andrews, Patricia L. 2013. Current status and future needs of the BehavePlus Fire Modeling System. International Journal of Wildland Fire 23(1):21-33.

2. California Code of Regulations Title 24 and Title 14, section 1280

3. California Public Resources Code Sections 4201 through 4204

4. California Government Code, sections 51175 through 51189

5. Glenn Lukos Associates, Inc. Preliminary Biological Report, Green River Ranch. 2020.

6. National Fire Protection Association - NFPA 13 - *Standard for the Installation of Sprinkler Systems. 2019 Edition*

7. National Fire Protection Association - NFPA 1144, 2018 Edition - *Standard for Reducing Structure Ignition Hazards from Wildfire*

8. National Fire Protection Association - NFPA 1142, 2018 Edition. *Table C.11 (b) Time-Distance Table Using an Average Speed of 35 mph*

9. 2016 Plant Pallet for Defensible Space Guideline, Defensible Space Landscaping – Plant Pallet for Fuel Modification in Riverside, Orange and San Diego Counties. 7 pages.

10. International Urban-Wildland Interface Code, 2018 edition

11. 2019 California Fire Code and Local Amendments including Appendices to Chapters 1 & 4 and Appendices B, F & H

12. Chapter 7A-2019 California Building Code

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

14. Corona City Building Code, Chapter 15.12

15. Corona City Health and Safety Code, Chapter 8.24

16. City of Corona Fire Department Weed Abatement Regulations and Fuel Modification Program for Hazardous Fire Areas.

17. Western Region Climate Center. *Historic Climate Data from Remote Automated Weather Stations.* RAWS USA Climate Archive. Reno, NV.

APPENDIX ‘D’

Non-combustible & Ignition Resistant Building Materials

APPENDIX 'D'

Non-Combustible & Ignition 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./in^3.

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 Resistant Construction

APPENDIX 'E'
Ignition Resistant Construction

As of the date of this FPP, the following is an edited list of ignition resistant construction requirements for buildings located in an Wildland Urban Interface Fire Area under the California Fire Code (CFC), Chapter 7A of the California Building Code (CBC) and the California Residential Code (CRC) R327. However the requirements listed below are not all inclusive and all exterior building construction including roofs, eaves, exterior walls, doors, windows, decks, and other attachments shall meet, in full, all of the CBC Chapter 7A ignition resistance requirements, CRC R327, CFC requirements and all currrent applicable codes and any exceptions or local requirements in force at the time of building permit application.

1. Ventilation openings for enclosed attics, soffit spaces, rafter spaces formed where ceilings are applied directly to the underside of the roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents, other materials or other devices that are corrosion-resistant, a minimum of 1/16 inch and not exceed 1/8-inch and are non-combustible. Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by non-combustible wire mesh may be of combustible materials.

2. Vents shall not be installed on the underside of eaves and cornices except vents meeting the requirements of Item 1 may be installed if the attic space is protected by interior fire sprinklers or the exterior wall covering and exposed underside of the eave are of noncombustible or ignition resistant materials and the vent is located more than 12 feet from the ground or walking surface of a deck, porch, patio or similar surface.

3. The enforcing agency may approve special eave or cornice vents that resist intrusion of flame and burning embers.

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

5. Where valley flashing is installed, the flashing shall not be less than 0.019 inch No. 26 gage galvanized sheet corrosion resistant metal installed over not less than one layer of minimum 72 pound mineral surfaced non-perforated cap sheet complying with ASTM D 3909 at least 36 inch wide running the full length of the valley.

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

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

8. All structures will be built with a Class A roof assembly, including a Class A roof covering.

9. 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 minimum No. 72 mineral surfaced on-perforated ASTM D 3909 cap sheet installed over the combustible decking.

10. The exposed roof deck on the underside of unenclosed roof eaves shall be protected by either non-combustible material; ignition resistant material; one layer of 5/8 inch Type X gypsum on the underside exterior; or 1-hour fire resistive exterior wall assembly applied to the underside of roof deck. Solid wood rafter tails with a 2 inch nominal minimum dimension; solid wood blocking installed between rafter tails with a 2 inch nominal minimum dimension; gable end overhangs and roof assembly projections beyond an exterior wall other than the lower end of the rafter tails; fascia; and other architectural trim boards do not require protection.

11. The exposed underside of roof eaves and roof eave soffits shall be protected by either non-combustible material; ignition resistant material; one layer of 5/8 inch Type X gypsum on the underside exterior; or 1-hour fire resistive exterior wall assembly applied to the underside of rafter tails or soffits. Gable end overhangs and roof assembly projections beyond an exterior wall other than the lower end of the rafter tails, fascia, and other architectural trim boards do not require protection.

12. The exposed underside of porch ceilings and the exposed underside of cantilevered floor projections where a floor assembly extends over an exterior wall shall be protected by non-combustible material, ignition resistant material, one layer of 5/8 inch Type X gypsum on the underside exterior, or 1-hour fire resistive exterior wall assembly applied to the underside of the porch ceilings or floor projections. Architectural trim boards do not require protection.

13. 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 FAHJ, having ½-inch perforations for arresting burning carbon or sparks. It shall be installed to be visible for the purposes of inspection and maintenance.

14. All structures will have automatic interior fire sprinklers designed and installed according to the National Fire Protection Association (NFPA) 13 - Standard for the Installation of Sprinkler Systems.

15. All exterior windows and exterior glazed door assemblies 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.

16. The exterior wall covering or assembly shall be non-combustible, ignition resistant, heavy timber exterior wall assembly or log wall construction assembly and meet the performance criteria set forth in SFM Standard 12-7A-1. Exterior walls coverings 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.

17. Exterior doors shall conform to the performance requirements of standard SFM 12-7A-1, shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252, and shall be of approved non-combustible or ignition resistant material; or

constructed of solid core wood having stiles and rails not less than 1⅜ inches thick with interior field panel thickness no less than 1¼ inches thick.

18. 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

19. The underfloor area of elevated or overhanging buildings and appendages shall be enclosed to grade and shall be protected by non-combustible material, ignition resistant material, one layer of 5/8 inch Type X gypsum on the underside exterior, or 1-hour fire resistive exterior wall assembly applied to the underside of the exposed underfloor. Heavy timber structural columns and beams are exempt.

20. The walking surface material of decks, porches and stairs shall be constructed of one of the following: ignition resistant material that complies with both SFM Standard 12-7A-4 & 5; exterior fire retardant wood; non-combustible material; any material that complies with SFM Standard 12-7A-4 when attached exterior wall covering is also either non-combustible or ignition resistant material.

21. 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.

22. All attached fences, gate assemblies (fences, gate and gate posts), arbors, trellises, patio covers, carports and similar structures shall be of non-combustible or ignition resistant materials.

Additional Construction Requirements

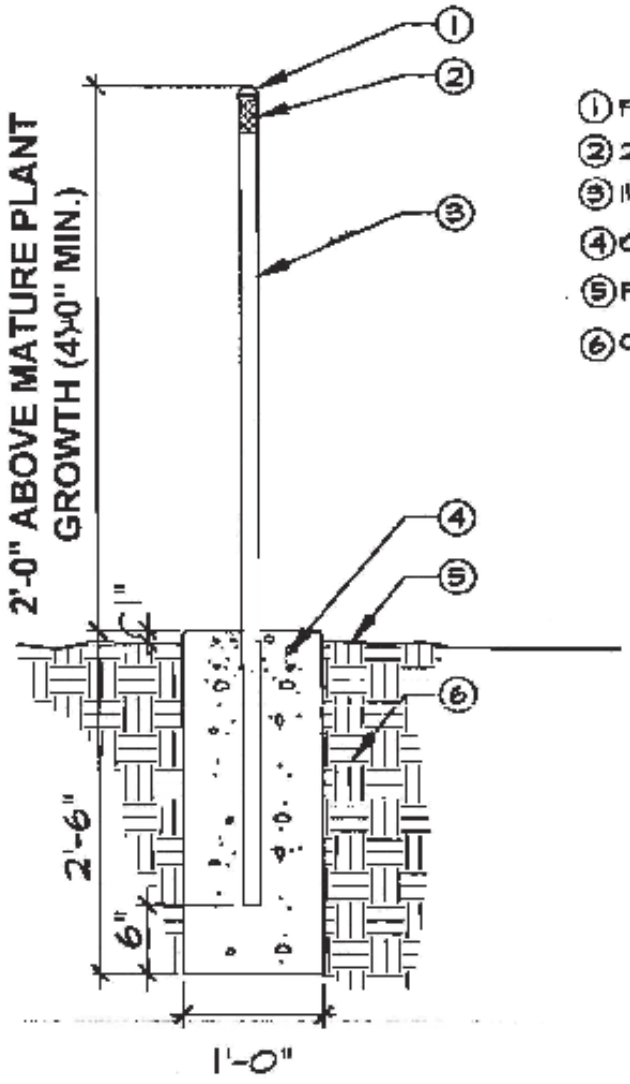
In the event of a wildfire in the adjacent wildlands the structures will be showered with embers. To mitigate this hazard the following additional construction requirements shall be implemented on all lots.

1. Interior fire sprinklers shall be installed in the attics. Copper piping is required in the attics and sprinkler heads used in accordance with their listing.
2. All vents in the structures shall be “Brandguard”, “O’Hagin Fire & Ice® Line – Flame and Ember Resistant” or equivalent type vents that significantly reduce ember penetration.
3. All operable windows shall be provided with metal mesh bug screens over the operable opening to replace traditional vinyl bug screens to prevent embers from entering the structure during high wind conditions when windows may be inadvertently left open.
4. All swinging exterior doors shall be self closing (e.g., pneumatic or spring loaded hinges) and self-latching.

APPENDIX ‘F’

Zone Marker Detail

ZONE MARKER DETAILS



1. POST CAP
2. 2"X8" ZONE INDICATOR
3. 1½" DIA. GALV. POST.
4. CONC. PTS. 2500 PSI @ 28 DAYS.
5. FINISH GRADE.
6. COMPACTED SUBGRADE