# APPENDIX O.
# FIRE PROTECTION PLAN

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# PIRAEUS POINT
# FIRE PROTECTION PLAN
# APN 254-144-01-00
# Encinitas, California

April 20, 2022, Revised 9/26/2022 & 11/18/2022

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# Fire Protection Plan
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## ***Executive Summary***

This Fire Protection Plan (FPP) evaluates the proposed Piraeus Point development located at the intersection of Piraeus Street and Plato Place east of Interstate 5 in the city of Encinitas, California to ensure it does not unnecessarily expose people or structures to wildfire risks and hazards. The FPP identifies and prioritizes the measures necessary to adequately mitigate those impacts. The FPP has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions and fire history. It considers water supply, access, structure ignitability and ignition resistant building materials, fire protection systems and equipment, impacts to existing emergency services, defensible space and vegetation management.

The project was analyzed to identify potential adverse impacts and acceptable mitigation measures for the wildland fire hazards. The evaluation determined that the Encinitas Fire Department (EFD) and adjacent fire departments through mutual aid will be able to provide adequate emergency services. Fire sprinklers are required for all the occupancies.

Additionally, this FPP includes fuel modification requirements to mitigate the exposure of people or structures to a significant risk of loss, injury, or death from wildland fires. Zone 1A and 1B will be a landscaped level building pad and is commonly called the defensible space zone for fire suppression forces and aids in protecting structures from radiant and convective heat. This landscaped zone is permanently irrigated and consists of fire resistant and maintained plantings, the first five feet from each structure shall be absent of landscaping and combustible material. Zone 2, the area beyond Zone 1A or 1B, is a thinning zone and excludes all prohibited highly combustible native vegetation. The Homeowner Association will be responsible to the Encinitas Fire Department for the annual completion of all designated fuel modification treatments prior to June 15$^{th}$ or when fuels become cured.

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

Note that this plan is an update to the previous Piraeus Street FPP that was developed on November 18, 2019 and subsequently revised on December 6, 2019. This new plan accounts for new building locations and the planned removal of a portion of the hazardous fuels located to the north of the structures.

# FIRE PROTECTION PLAN
# Piraeus Point
# Encinitas, California
## April 20, 2022, Revised 9/26/2022 & 11/22/2018

## 1.0 - INTRODUCTION

This Fire Protection Plan (FPP) encompasses the proposed Piraeus Point multi-family development. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the necessary measures to mitigate those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions, and fire history. The plan addresses water supply, access (including emergency access where applicable), structural ignitability and ignition resistant building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect one or more-at-risk communities and essential infrastructures. The plan recommends measures that each property owner and the homeowners association will take to reduce the probability of the ignition of the structures addressed by this plan. Appendices attached to this FPP are part of this FPP.

The FPP must be submitted to and be approved by the Encinitas Fire Department (EFD), and is based upon current requirements of the EFD and Wildland-Urban Interface (WUI) Development Standard Guidelines and the current requirements as of the date of this report under the authority of the International Urban-Wildland Interface Code, including pertinent local Fire Ordinances; California Code of Regulations Title 24, Part 9, and Title 14, section 1280; The California Fire Code and Local Amendments including Appendices to Chapters 1 & 4 and Appendices B, F & H; Chapter 7A-California Building Code; the California State and Local Responsibility Area Fire Hazard Severity Zone Map; California Government Code, sections 51175 through 51189; California Public Resources Codes sections 4201 through 4204; the National Fire Protection Association Standard 13-R; and the City of Encinitas Ordinances 2019-27 and 2021-08.

## 2.0 PROJECT LOCATION, DESCRIPTION AND ENVIRONMENTAL SETTING

### 2.1 Project Location

The Piraeus Point Project is located northeast of the intersection of Piraeus Street and Plato Place just east of Interstate 5 in the City of Encinitas, California. The Project is located less than one mile inland from the Pacific Ocean.

### 2.2 Project Description

The Project abuts existing homes on the east side, Piraeus Street is to the west which parallels Interstate 5, Plato Place is to the south, and natural open space can be seen to the north (Photo #1). The parcel consists of approximately 6.9 acres which includes the development of 149 three-story single-family condominium units, a portion of which will be located adjacent to natural open space including Southern Maritime Chaparral and Diegan Coastal Sage Scrub.


***Photo 1 -*** *Aerial View of Project Area. Note the existing homes to the east and Interstate 5 to the west, both form barriers to wildland fire progression.*

## 2.3 Environmental Setting

The baseline information that captures various aspects of the environmental condition within the Project area.

### 2.3.1 Topography

The Project is located on uneven terrain with slopes ranging between 2% and 40% and elevations ranging from approximately 100 feet to 170 feet in elevation. A significant portion of the site was previously graded as a large area is nearly level.

### 2.3.2 Climate

The climate within the project area is characterized as a Mediterranean type climate with generally mild, wet (12-14 inches per year) winters, with the bulk of the annual precipitation falling between December and March. Long, hot, and very dry summer seasons frequently occur with occasional multi-year droughts.

The most critical wind pattern to the project area is an off-shore wind coming out of the north/northeast, typically referred to as a Santa Ana wind. Such wind conditions in this area 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.

The typical prevailing summer wind pattern is out of the south or southwest and normally is of a much lower velocity (5-15 MPH with occasional gusts to 30 MPH) and is associated with higher relative humidity readings (> 30% and frequently more than 60%) due to a moist air on-shore flow from the ocean. All other (northwest, south, west) 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.

Figures 1 and 2 below are charts of weather data obtained from the Camp Pendleton Military Base Remote Automated Weather Station (RAWS) located 10.5 miles north of the project site at an elevation of 245 feet. The station is approximately 2.6 miles inland from the Pacific Ocean and located on a ridge. Winds tend to subside as the Pacific Ocean is approached and at lower elevation. The RAWS location has the best historical weather data for the area.

Note that when strong winds occur, they frequently occur at the same time as very low relative humidity thus creating a significant wildland fire threat. For the purpose of this FPP, wind gusts of 50 MPH will be utilized to represent "*worst case*" weather. All weather data was retrieved from the Western Regional Climate Center located in Reno, Nevada.

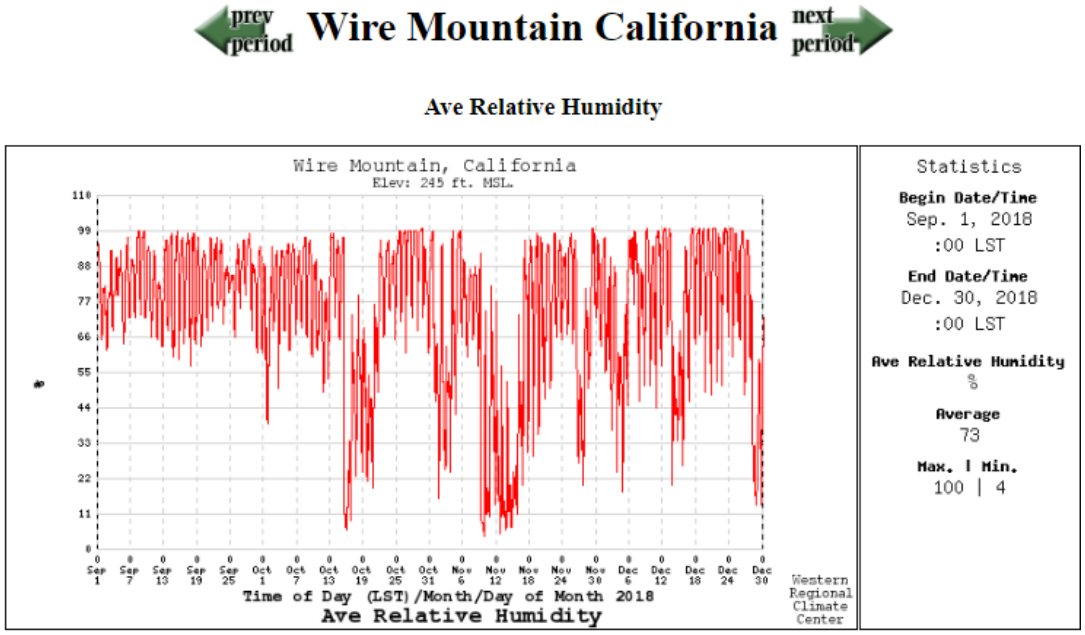


***Figure 1**: Relative Humidity at the Camp Pendleton Military Base RAWS for the period of September 1, 2018 through December 30, 2018. Note when the humidity was below 20 percent. Data was retrieved from the Western Region Climate Center.*

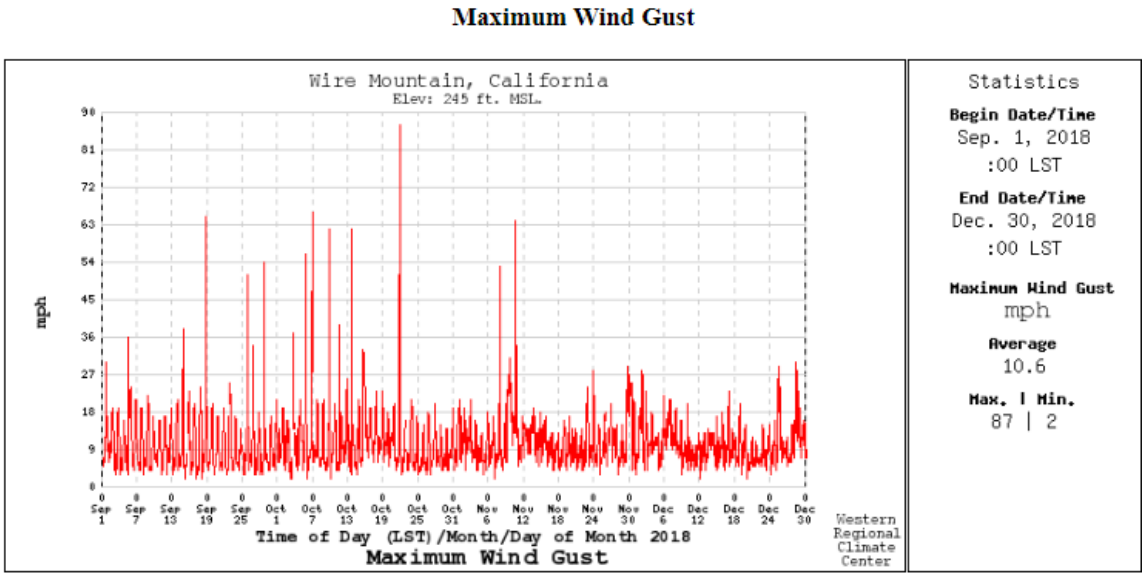


**Figure 2: Maximum Wind Gusts at the Camp Pendleton Military Base RAWS for the period of September 1, 2018 through December 30, 2018. Note the strong wind gusts that occurred in early November that correspond to the very low relative humidity shown in Figure 1.**

### 2.3.3 Off-Site Vegetation

There are existing homes to the east of the project which have managed fuel treatment zones. Interstate 5 is to the west and Plato Place to the south of the property. To the north of the property is an unmanaged natural open space of dense brush (Photo #1).

### 2.3.4 On-site Fire Vegetation

The interior of the proposed project area is a mixture of grass and weeds on the graded areas and various native plant communities and habitat-types on the remaining areas. The area contains coastal sage, buckwheat, prickly pear, tree tobacco, annual grasses and weeds. The natural area to the north contains plant species such as coyote brush, mission manzanita, chamise, and tree tobacco and has a high fuel load.

***Photo 2 –*** *Looking Southwest from the Interior of the Project. All the level area will be built upon. Due to previous disturbance, the flat areas are primarily covered in grasses and weeds.*

***Photo 3*** *– Approximately location of where the entrance road from Piraeus Steet will be located.*

The northern portion of the property consists of dense native vegetation with a high fuel load (Photo 4). The northern section also contains the steepest slopes which are uphill into the Project.

***Photo 4 -*** *North Side Canyon Vegetation.*

Piraeus Street borders the western boundary of the project and separates the project from Interstate 5; a major eight lane divided highway as shown in Photo 5.

***Photo 5 -*** *Looking southwest toward the corner of Plato Place and Piraeus Street from near the center of Project. Interstate 5 is the roadway in the distance.*

### 2.3.5 Fire History

Fire history data was acquired from the State of California Fire History Database. There have been several large fires of 100 acres or more that have occurred near the Piraeus Point project in the past (see Figure 3). Due in part to urbanization, the size of wildland fires has trended downward.

No Name Fire – 40,248 acres occurred in 1943.

No Name Fire – 126 acres occurred in 1970.

Harmony Fire – 9,359 acres occurred in 1996.

Poinsettia Fire – 600 acres occurred in 2014.

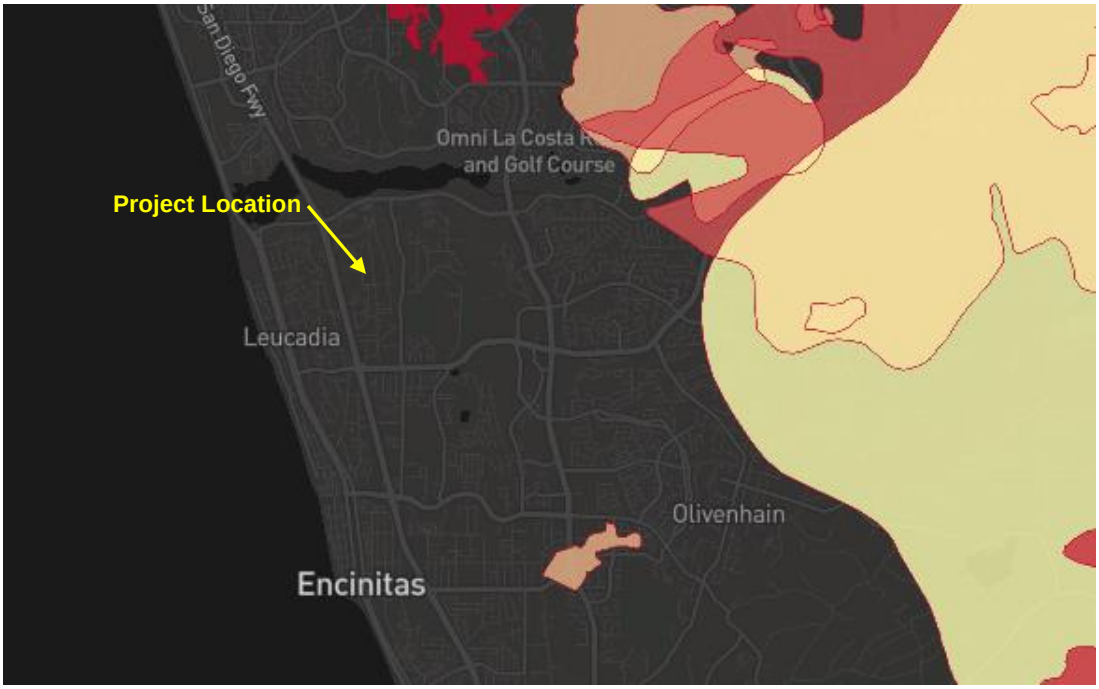


***Figure 3*** *– Encinitas Wildland Fire History (Note: The area in dark grey has no recorded large fire history. However, there were very likely numerous smaller fires that were never mapped.*

The 2014 Poinsettia Fire occurred on May 14, 2014 in the nearby city of Carlsbad. A total of 600 acres were burned causing $22.5 million in damages with eight (8) residences and an 18-unit complex destroyed. The 1996 Harmony Fire occurred on October 21, 1996 northeast of the property. It burned 9,359 acres and destroyed 101 homes and resulted in one fatality. There have undoubtedly been several smaller wildland fires that did not reach 100 acres or more in size and thus were not mapped. Such smaller fires are not reported in the State of California Fire History database.

### 2.3.6 On-site and Off-site Land Uses

The parcel of land scheduled for development is undeveloped and had previously been partially cleared/graded of vegetation with some agricultural activity as recent as 2010. Native and protected Southern Maritime Chaparral is located north of proposed multi-family housing units. The land to the east consists of developed residential properties with existing fuel treatment zones and thus does not present a wildland fire hazard. To the west and south are Piraeus Street and Plato Place, respectively. Interstate 5 is also located to the west and parallels Piraeus Street. There are small areas of wildland vegetation in both of these directions.

### 2.3.7 Public and Private Ownership of Land in the Vicinity

Lennar as applicant does not yet own the property comprising the Project site but is under contract to purchase once entitlements are perfected. All other properties in the vicinity are private parcels with homes or public land utilized for transportation purposes.

## 3.0 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

This FPP evaluates the potential adverse environmental effects that the proposed Piraeus Point development may have from wildland fire and proposes appropriate mitigations for any adverse impacts to ensure that this development does not unnecessarily expose people or structures to a significant risk of loss, injury, or death. The following guidelines for the determination of significance are used:

1. **Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

   *The project is bordered by existing development on three sides (homes or roadways). Fuel modification and other requirements outlined in this FPP reduce the exposure of people or structures to a less than significant risk of loss, injury or death involving wildland fires*.

2. **Would the project result in inadequate emergency access?**

   *Existing roadways are sufficient to provide emergency access. Piraeus Street is a significant 2 lane highway with a bike lane on either side thus providing approximately 32 feet of paved surface for emergency response. Plato Place is a less significant roadway that provides access from the east through the existing community.*

3. **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable emergency service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection?**

   *Existing facilities are adequate to provide acceptable emergency service and response times. Two existing fire stations are located within 2.5 miles of the project. The City of Encinitas has 6 fire stations strategically located to provide round-the-clock coverage to the community. Fifty-one (51) fire fighters are available for each shift as described on the Fire Department web site. The city, with a population estimated at over 62,900 in 2018 has fifty-one career firefighters.*

   *NFPA, in 2019, rated career firefighters by population protected and found for communities of between 50,000 and 99,999, the number of career firefighters per 1,000 population is on average 1.29 nationally. Based on this statistic alone, the city should have 49 firefighters to be average within the nation. This appears to be adequate at this time and with the development, additional property taxes will be raised which can be used to maintain minimum fire department standards.*

4. **Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

   *A fire flow analysis must be completed and approved by the EFD prior to construction.*

## 4.0 ANALYSIS OF PROJECT EFFECTS

The project demonstrates compliance (or proposes modification and "findings" consistent with the San Diego CCFC Appendix Chapter 1 Section 104.8) with applicable fire regulations, including but not limited to the California Fire Code, California Code of Regulations, and/or the City of Encinitas Fire Code.

The comprehensive Fire Protection Plan and the Project design are consistent with the San Diego County Planning & Development Services recommendations including fuel modification.

The project meets the emergency response objectives identified in the Public Facilities Element of the County General Plan.

### 4.1 Adequate Emergency Services

The Piraeus Point Project is within the response area of the Encinitas Fire Department. The closest fire station is Station #3, located at 801 Orpheus Avenue. It is approximately 1.5 miles from the Project. Estimated response time (get away and travel per Google Maps) from this station to the site is approximately five (5) minutes. Carlsbad Fire Station #4 is 2.4 miles from the site with a response time of approximately six (6) minutes. Figure 4 which follows shows the location of fire stations in proximity to the project. Despite the relatively proximity of the nearest fire station, there is no assurance that the Station #3 engine company will be in its station when a wildfire threatens the Piraeus Point Project from an ignition outside the development. Engines may respond from other stations further away or from other incidents. The California Department of Forestry and Fire Protection (CAL FIRE) as well as other fire departments, can be requested under Mutual Aid or Automatic Aid agreements to respond to wildfire events in the area.

The goal of this FPP therefore is to make the Piraeus Point Project as safe as possible until such time as firefighting equipment arrives and/or residents can be evacuated. With the implementation of the fuel modification, ignition resistant construction measures, and other mitigation measures described in this FPP, the Piraeus Point Project will be provided with a higher degree of protection from wildfire than many existing communities in San Diego County. The project will not directly result in the expansion of area fire protection services but there will be an incremental increase in the demand for fire protection and emergency services.

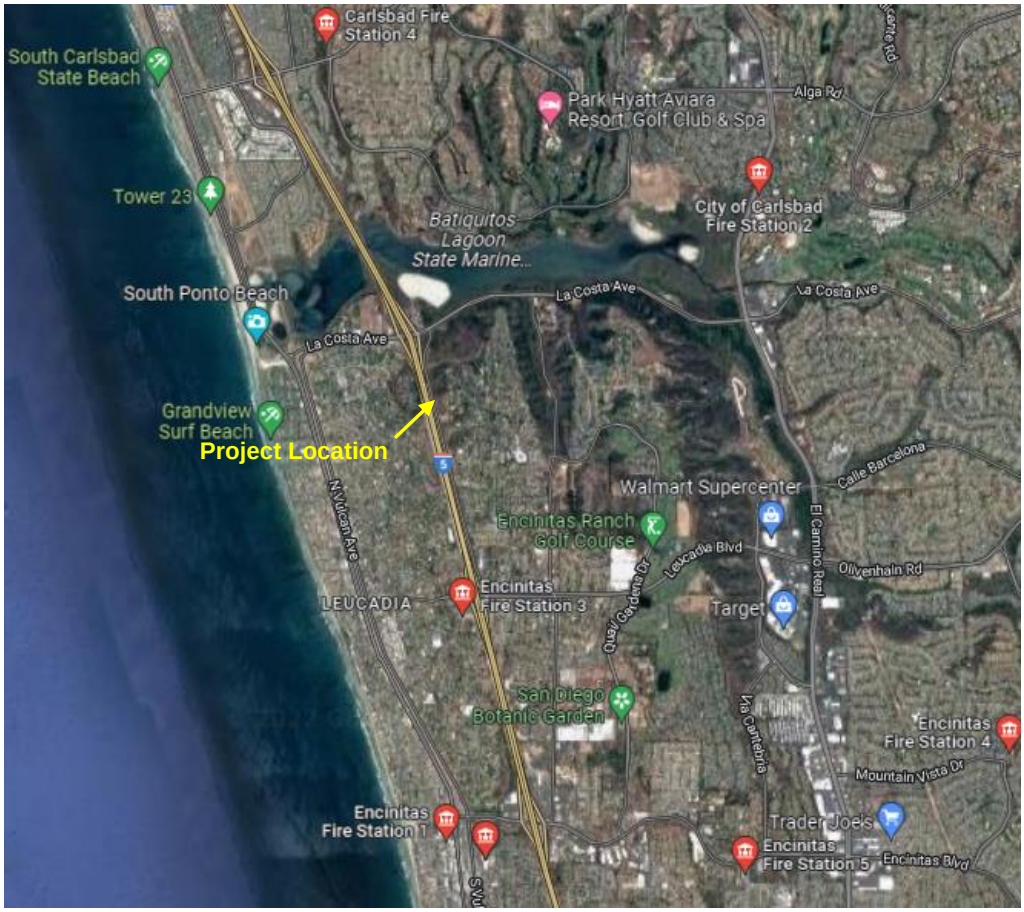


***Figure 4*** *– Fire Stations located near the Project (arrow) are shown in Red. Includes both the City of Encinitas as well as the City of Carlsbad Fire Departments.*

## 4.2 Fire Access

Ingress and egress for residents will be from either Piraeus Point or Plato Place. All streets shall be designed to the City of Encinitas and the EFD road standards. No fire apparatus access roadway or driveway shall exceed a 15% grade without mitigation. If the grade is to be over 15%, the mitigation required is to have the entire length of the >15% grade road surface constructed of Portland cement concrete with a deep broom finish running perpendicular to the direction of travel to enhance traction.

All fire apparatus access roads shall be of an all weather surface designed to the City of Encinitas standards and shall be designed to support imposed loads of fire apparatus not less than 75,000 lbs. Fire apparatus roadways shall have an unobstructed improved width of not less than 24 feet, curb line to curb line, or edge of pavement to edge of pavement where no curbs are proposed with an angle of departure and approach not to exceed twelve percent (12%). All fire access roadways shall be signed No Parking to maintain access.

All dead end fire apparatus access roadways in excess of 150 feet in length shall be provided with a EFD approved turnaround.

The Piraeus Point development will not be a gated community. However, should the community in the future wish to install gates, they shall meet the following requirements. All gates providing access from a road to a driveway shall be located a minimum of 30 feet from the nearest edge of the roadway and shall be at least two feet wider than the width of the traffic lane(s) serving the gate. An automatic gate across a fire access roadway or driveway shall be equipped with an approved emergency key-operated switch overriding all command functions and opening the gate. A gate accessing more than four residences or residential lots or a gate accessing hazardous institutional, educational or assembly occupancy group structure, shall also be equipped with an approved emergency traffic control activating strobe light sensor or other device approved by the fire code official, 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. An automatic gate shall meet fire department policies deemed necessary by the fire code official for rapid, reliable access. An automatic gate serving more than one dwelling is required to install an approved emergency key-operated switch and/or an approved emergency traffic control activating strobe light sensor approved by the EFD, at an approved location, which overrides all command functions and opens the gate. Where this section requires an approved key-operated switch, it may be dual keyed or equipped with dual switches provided to facilitate access by law enforcement personnel. Electric gate openers, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.

### 4.3 Water Supply

The Piraeus Point water supply will be provided by the San Dieguito Water District. Hydrants, mains and water pressures shall be designed to comply with City of Encinitas and Encinitas Fire Department requirements. The Project design shall provide for all sides of each structure to be reached with a maximum hose pull of 150 feet from a fire access roadway/driveway. Fire hydrants shall be installed at a minimum spacing of 300 feet, and be of a type satisfactory to the Encinitas Fire Department. Hydrants shall be intalled at intersections, at the beginning radius of cul-de-sacs, and every 300 feet of fire access roadways (as per Encinitas Municipal Code). The EFD will determine exact locations of fire hydrants. The minimum fire flow shall be 2,500 GPM at 20 psi residual pressure for a 2-hour duration. Residential hydrants shall have one (1) 4” connection and two (2) 2 ½” connections. A two-sided blue reflective road marker shall be installed on the road surface to indicate the locations of fire hydrant(s).

### 4.4 Ignition Resistant Construction and Fire Protection Systems

All structures within the Piraeus Point Project shall meet all wildland/interface standards to the satisfaction of the Encintas Fire Department and be designed and constructed with ignition resistant construction requirements. All construction and ignition resistive requirements shall meet the current International Wildland-Urban Interface Code (IWUIC), City of Encinitas Ordinances, and the CA Fire and Building Code. The Encinitas Fire Department may refer to and utilize County standards for any construction and ignition resistive requirements. For a brief summary description of the Chapter 7A construction requirements, see APPENDIX ‘C’. All residential structures will have automatic interior fire sprinklers. The interior fire sprinkler system shall meet National Fire Protection Standard (NFPA) 13R and current Encinitas requirements.

All combustible building materials, decks, balconies, patio, covers, gazebos and fences will be permanently prohibited in all Fuel Treatment Zones. These structures may be

allowed if constructed with ignition resistive building materials as per the City of Encintas Fire Code. The owners are not restricted from having concrete patios, concrete walkways, water features, or a swimming pool within this zone. Refer to APPENDIX 'D' for photos and descriptions of non-combustible decks, patio covers, and railings.

The Homeowners Associate (HOA) will be required to maintain Zones 1A & 1B fuel modification standards and will keep each structure's roof and rain gutters free of leaves, needles and other combustible debris and all firewood and other 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 Piraeus Point owners/HOA are responsible for maintainence of the structures with each unit owner being required to keep all doors and windows tightly closed whenever a wildland fire is reported in the vicinity.

## 4.5 Defensible Space and Vegetation Management

Defensible space requirements for on and off-site fuels are described below.

### 4.5.1 Off-site Fire Hazard and Risk Assessment

The project area is located in a Very High Fire Hazard Severity Zone (https://myencinitas.encinitasca.gov/map/). The heaviest fuels are located to the north. To the east of the project there are existing homes which pose an insignificant wildfire threat due to landscaping, irrigation and other improvements (Photo #1). Piraeus Street runs the entire length of the western side of the proposed project and separates the development from Interstate 5, a major eight lane divided highway.

### 4.5.2 On-site Fire Hazard and Risk Assessment

All the interior vegetation will be eliminated in the grading process for the proposed structures and roadways. To the north of the northern proposed buildings and outside the fuel treatment zones, an area of Southern Maritime Chaparral will remain (See Section 9.0 – Fire Protection Plan Map) The greatest threat to this project is the Chaparral as it consists of heavier fuels that are taller and denser than the Coastal Sage, grass and weeds that exists to the west and south. A wildland fire burning in this area under a Santa Ana wind condition could pose a threat to all the residences. However, with a treated area created between the buildings and the natural area and the special fire protection features described in Section 6.1, this threat will be significantly reduced**.** This buffer area will be thinned of dead and dying vegetation which will be beneficial.

Any wildfire in the vicinity of the project can cause firebrands to be carried a long distance (one mile or more) by fire drafts or strong winds. Any wind or topography driven wildfire burning under a northeastern (*Santa Ana*) wind pattern will create a wildland fire hazard to all the structures in the proposed development due to falling embers. All wildland plants and grasses will pose a fire hazard annually as the plants cure or lose both live and dead fuel moisture during hot and dry summer seasons.

The proposed fuel modification treatments, irrigated landscaping, the use of ignition resistant building materials, and additional required construction features described in Section 6.1 will mitigate to less than significant levels the potential loss of any structures due to direct fire impingement or radiant heat around the perimeter of the houses.

## 4.6 Vegetative Fuel Assessment

The minute-by-minute movement of a wildland fire will probably never be totally predictable--certainly not from weather conditions forecast many hours before the fire. Nevertheless, practice and experienced judgment in assessing the fire environment coupled with a systematic method of calculating fire behavior yields surprisingly good results (Scott, Burgen 2005).

The BehavePlus Fire Modeling System is among the most widely used systems for wildland fire prediction according to Dr. Patricia L. Andrews (2014). The BehavePlus fire behavior computer modeling system was developed by USDA–Forest Service research scientists at the Intermountain Forest Fire Laboratory, Missoula, Montana, and is utilized by wildland fire experts nationwide. Since the model was designed to predict the spread of a fire, the fire model describes the fire behavior only within the flaming front. The primary driving force in the fire behavior calculations is the dead fuel that are less than one-fourth inch in diameter. These are the fine fuels that carry the fire. Fuels larger than three (3") inches in diameter are not included in the calculation (Andrews 1986).

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

BehavePlus, Version 6.0.0, is an updated and enhanced form of the BEHAVE System. The BEHAVE fire model describes a wildfire spreading through surface fuels, which are the burnable materials within six (6') feet of the ground and contiguous to the ground. Regardless of the limitations expressed, experienced wildland fire managers can use the BEHAVE 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.

The BehavePlus 6.0.0 Fire Behavior Model was used to make the fire behavior assessments and projections for the hazardous vegetative fuels located in proximity to the proposed residential buildings. The fire scenario projection are based on "worst case" fire weather assumptions for the project area. The fire scenarios below display the expected Rate of Fire Spread (expressed in ft/min), Fireline Intensity (expressed in British Thermal Units per foot per second) and Flame Length (expressed in feet) for two (2) separate BehavePlus predictions: one for the untreated fuels, followed by one for the treated fuels. Treated fuels, located in a fuel modification zone, change how wildfire behaves or burns. A fire burning in a fuel modification zone is less descructive, less costly, and easier to control as the flame length, rate of spread and energy output are reduced, often signficantly. Each scenario also includes the calculation inputs used in the BehavePlus program which were obtained from project site observations and fuel moisture levels typically observed during fire season.

| ***Fire Scenario #1 – Fire Approaching from the North*** ***(Late Fire Season With Above Average 50 MPH North, Northeast, and East Santa Ana Wind Conditions)*** | |
|---|---|
| **Fire Behavior Calculation Input Data**<br>• **40 percent slope**<br>• **50 mph 20-foot wind speed**<br>• **320º aspect**<br>• **45º wind direction (from north)** | **Anticipated Fuel Moistures**<br>*** 1-Hour Fine Fuel Moisture of ……2%**<br>*** 10-Hour Fuel Moisture of……3%**<br>*** 100-Hour Fuel Moisture of. ……5%**<br>*** Live Herbaceous Fuel Moisture of…….. 30%**<br>*** Live Woody Fuel Moisture of……..... 50%** |
| **Expected Fire Behavior Untreated Vegetation**<br>**Combined Fuel Model: [sh5—High Load, dry climate shrub (70%) and sh7—Very high load, dry climate shrub (30%)]** | |
| **Rate of Spread - 848 ft/min** | |
| **Fireline Intensity - 2,778 BTU's/foot/second** | |
| **Flame Length - 52.4 feet** | |
| **Expected Fire Behavior in Treated Fuels**<br>**Combined Fuel Model: [gr1—Short, sparse, dry climate grass (70%) and tl6–Moderate load, broadleaf litter (30%)]** | |
| **Rate of Spread - 45 ft/min** | |
| **Fireline Intensity - 580 BTU's/foot/second** | |
| **Flame Length - 7.3 feet** | |

| ***Fire Scenario #2– Fire Approaching from the South*** ***(Late Fire Season With Above Average 30 MPH South, Southeast, or Southwest Wind Conditions)*** | |
|---|---|
| **Fire Behavior Calculation Input Data**<br>• **20 percent slope**<br>• **30 mph 20-foot wind speed**<br>• **180º aspect**<br>• **180º wind direction (from north)** | **Anticipated Fuel Moistures**<br>*** 1-Hour Fine Fuel Moisture of ……2%**<br>*** 10-Hour Fuel Moisture of……3%**<br>*** 100-Hour Fuel Moisture of. ……5%**<br>*** Live Herbaceous Fuel Moisture of…….. 30%**<br>*** Live Woody Fuel Moisture of……..... 60%** |
| **Expected Fire Behavior Untreated Vegetation**<br>**Combined Fuel Model: [gr2-Low load, dry climate grass (70%) and sh1—Low load, dry climate shrub (30%)]** | |
| **Rate of Spread - 214 ft/min** | |
| **Fireline Intensity - 423 BTU's/foot/second** | |
| **Flame Length - 11.9 feet** | |
| **Expected Fire Behavior in Treated Fuels**<br>**Combined Fuel Model: [gr1-Short, sparse, dry climate grass (70%) and tl6–Moderate load, broadleaf litter (30%)]** | |
| **Rate of Spread - 34 ft/min** | |
| **Fireline Intensity - 580 BTU's/foot/second** | |
| **Flame Length - 5.4 feet** | |

| ***Fire Scenario #3 – Fire Approaching from the West*** ***(Late Fire Season With Above Average 30 MPH South, Southeast, or Southwest Wind Conditions)*** | |
|---|---|
| **Fire Behavior Calculation Input Data**<br>• **25 percent slope**<br>• **30 mph 20-foot wind speed**<br>• **270º aspect**<br>• **225º wind direction (from north)** | **Anticipated Fuel Moistures**<br>*** 1-Hour Fine Fuel Moisture of ……2%**<br>*** 10-Hour Fuel Moisture of……3%**<br>*** 100-Hour Fuel Moisture of. ……5%**<br>*** Live Herbaceous Fuel Moisture of…….. 30%**<br>*** Live Woody Fuel Moisture of……..... 60%** |
| **Expected Fire Behavior Untreated Vegetation**<br>**Combined Fuel Model: [gs2—Moderate load, dry climate grass-shrub (60%) and gr4—Moderate load, dry climate grass (40%)]** | |
| **Rate of Spread - 363 ft/min** | |
| **Fireline Intensity - 606 BTU's/foot/second** | |
| **Flame Length - 24.6 feet** | |
| **Expected Fire Behavior in Treated Fuels**<br>**Combined Fuel Model: [gr1—Short, sparse, dry climate grass (70%) and tl6–Moderate load, broadleaf litter (30%)]** | |
| **Rate of Spread - 34 ft/min** | |
| **Fireline Intensity - 580 BTU's/foot/second** | |
| **Flame Length - 5.4 feet** | |

## 5.0 FUEL TREATMENT ZONE DESCRIPTIONS & REQUIRED TREATMENTS

Described below are the required treatments for the Fuel Treatment Zones. All distances described in this report are measured horizontally. Fuel modification requires 100 feet of treated area consisting of 50 feet of irrigated Zones 1A & 1B adjacent to each structure followed by 50 feet of non-irrigated thinning Zone 2. The Piraeus Point development will have a Homeowner Association (HOA). The HOA will be required to oversee and perform the herein described fuel treatments. These fuel treatments when combined with the required construction features described in Section 6.0 should mitigate any radiant heat or direct flame impingement for the projected 52.4-foot flame lengths under the worst-case weather and fuels scenarios.

Following are the required fuel treatments.

### 5.1 Irrigated Zone 1A – HOA Maintained, *(Shown as ||| on the Fire Protection Plan Map)*

**Defined**

Zone 1A is commonly called the defensible space zone. It is an permanently irrigated zone and shall be free of all combustible construction and materials, typically 50 feet in width. It comprises the the entire area around the front, back, and side yards of the proposed stuctures. It is also located on manufactured slopes. It also applies to plant material established in pots or large containers.

**Required Landscaping**

- Zone 1A will be cleared of all existing native vegetation and replanted with drought tolerant and irrigated fire resistant lawns, ground covers and shrubs. Non-flammable concrete patios, driveways, swimming pools, water features, walkways, boulders, rock, and gravel can be used to break up fuel continuity within Zone 1A.
- Landscaping shall be irrigated and primarily consists of fire resistant, maintained native or ornamental plantings usually less than 18 inches in height. However, this zone may contain occasional fire resistant trees and single well-spaced ornamental shrubs up to 48 inches in height, intermixed with ground covers and lawn.
- Shrubs shall be single specimens or a grouping not exceeding three plants. Mature height of plants shall not exceed 18 inches. At mature growth, single plants or groupings of plants shall be separated from each other by at least 5 feet. Plants shall not be located under vents or windows or within five feet to either side of a window. Single specimens of plants or a grouping not exceeding three plants are allowed under mature trees.
- Shrubs (perennial woody plants of not more than 12 feet) may be placed in this zone provided that they are grouped with not more than 3 plants in a grouping. Each grouping shall be separated by 3x height of the shrub as measured between crowns.
- Combustible ground covers (mulch, bark, wood chips, etc.) are not permitted within this zone.
- Trees shall be single specimens or groupings of not more than three trees selected from the approved plant list.
- Trees must be planted so that when they reach maturity the tips of their branches are at least 10 feet away from any structure and must have a minimum of six feet of vertical separation from low growing irrigated vegetation beneath the canopy of the tree.
- Plants in this zone need to be fire resistant and should 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 the Encinitas recommended plant list and APPENDIX ‘B’ for the Encinitas Prohibited Plant List.
- The area within 5 feet of each home shall be absent of most plants including all the plants listed in Appendix A. A few scattered potted plants may be grown as long as they are not located beneath windows or vents or within 5 feet of a window.
- No combustible mulches shall be allowed within 5 feet of a structure.

**Required Maintenance**

- Zone 1A shall be maintained year round by the individual property owner(s) as required by this FPP or the EFD.
- Sprinkler systems shall be checked weekly to insure proper working order.
- Any dead or dying plant material shall be removed and replaced monthly.
- Shrubs and trees are to be bi-annually maintained free of dead material.
- Trees will be maintained so that their crown cover will be more than ten (10) feet from any structure.
- Tree crowns shall be raised 3x the height of the overtopping shrub or 6 feet, whichever is greater.

- All tree crowns will be separated by 20 feet and maintained to keep a separation of six feet between the ground fuels (shrubs and ground covers) and the lower limbs.
- Shrub over 18 inches shall be maintained to have their canopies separated by 3x the height of the shrub.
- All trees must be maintained to the current ANSI A300 Standard for Tree Care Operations, Tree, Shrub, and Other Woody Plant Maintenance [see (https://www.tcia.org/TCIA/Build_Your_Business/A300_Standards/A300_Standards.aspx)]. This is an industry standard for landscape maintenance.

**5.2 Irrigated Zone 1B - HOA Maintained Public Land *(Shown as  on the Fire Protection Plan Map)***

**Defined**

Begins at the edge of Zone 1A and combined with Zone 1A extends up to 50 feet from a structure within public land. All combustible buildings and materials are prohibited in this zone (e.g. decks, patio covers, gazebos).

**Required Landscaping and Maintenance**

Irrigated Zone 1B has the same landscaping and maintenance requirements as Zone 1A except that the land upon which it is performed is public. See Zone 1A above.

**5.3 Thinning Zone 2 – HOA Maintained *(Shown as  on the Fire Protection Plan Map).***

**Defined**

Zone 2 is a transition area between the strict requirements of irrigated Zone 1A or 1B and the undisturbed native vegetation designed to maintain a reasonably open character in this area. Zone 2 is typically a non-irrigated thinning zone 50 - 100 feet in width depending on location beginning at the outer edge of Zone 1A or 1B. Thinning zones are utilized to reduce the fuel load of a wildland area adjacent to buildings thereby reducing both 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. Shrub and tree root system are to be retained to prevent erosion.

**Required Landscaping**

- Thinning the native vegetation to a point where 50% open space is created.
- Removal of all dead, woody debris and exotic flammable vegetation including designated undesirable plants (Appendix B).
- If native shrub and chaparral are located within a tree's drip line, the lowest branch of the tree shall be a distance from the ground of at least three times the height of the shrub/chaparral or ten (10) feet, whichever is greater.
- 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 ten 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 https://wwv.isa-arbor.com/store/product/124.

- Annually remove any undesirable non-native vegetation (see APPENDIX 'B') to maintain a 50% thinning from the original vegetation cover.
- Native annual and perennial grasses shalll be allowed to grow and produce seed during the winter and spring. As grasses begin to cure (dry out), they shall be cut to 4 inches or less in height.
- Bi-annually remove all dead and dying vegetation and highly flammable species (see APPENDIX 'B').
- If a native shrub is located within a tree's dripline, the lowest branch of the tree shall be a distance from the ground of at least three times the height of the shrub/chaparral or six (6) feet, whichever is greater.
- Should vines be planted to partially cover a retaining wall, they shall be inspected and all dead material removed every two months.

**5.4 Roadside Fuel Treatment (HOA Maintained) Shown as ▦ on the Fire Protection Plan Map.**

The area located 20 feet on either side of each access road that is maintained to Irrigated Zone 1A criteria described above in Section 5.1. Should water availability become an issue at any time in the future, this zone is critical to maintain free of combustible vegetation and materials for safer evacation and access by emergency responders.

**Required Landscaping and Maintenance**

Roadside Fuel Treatment is maintained as Irrigated Zone 1A described above throughout the year.

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## 6.0 Construction Standards

All structures within the Piraeus Point project shall meet all wildland/interface standards to the satisfaction of the Encintas Fire Department and be designed and constructed with ignition resistant construction requirements. All construction and ignition resistive requirements shall meet the current International Wildland-Urban Interface Code (IWUIC) and amendments; City of Encinitas Ordinances 2019-27 and 2021-08; and the CA Fire and Building Codes. The EFD may refer to and utilize County standards for any construction and ignition resistive requirements. For a summary description of the current construction requirements as of date of this report see APPENDIX 'C'.

AUTOMATIC FIRE SPRINKLER SYSTEM: An automatic Fire Sprinkler System shall be installed in each building including all garages as per NFPA 13, the most current edition shall be applied to EFD policies. Detailed sprinkler plans shall be submitted to the Fire Prevention Bureau and approved prior to installation. Plans and installation must be completed by a California licensed C-16 fire protection contractor.

All accessory structures such as decks, balconies, patios, covers, gazebos and fences shall be built from non-combustible or ignition resistant materials. Refer to APPENDIX 'D' for photos and descriptions of non-combustible decks, patio covers, and railings.

Construction or building permits shall not be issued until the fire code official inspects and approves required vegetation clearance, fire apparatus access, and water supply for the

construction site. The issuance of building permits regarding these requirements shall be in accordance with the standards required by the City of Encinitas.

Prior to the delivery of building construction materials to the project site the following conditions shall be completed to the satisifaction of the EFD.

- All wet and dry utilities shall be installed and approved by the appropriate inspecting department or agency.
- As a minimum, the first lift of asphalt paving shall be in place to provide a permanent all weather surface for emergency vehicles.
- All fire hydrants shall be installed, in service, and accepted by the EFD and applicable water district.
- Clearance of Zone 1A and 1B vegetation and approved Zone 2 vegetation management shall be provided prior to combustible material arriving on the site and shall be maintained throughout the duration of construction. Fire code officials may require additional vegetation management and/or defensible space when warranted.

### 6.1 Additional Required Construction Features – All Structures

Due to the concern for embers during wildland fire, the following additional construction features are required for all structures within the Piraeus Point development:

a. All vents in the structures shall be “Brandguard”, “O’Hagin Fire & Ice® Line – Flame and Ember Resistant” or equivalent type vents.

b. 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.

### 6.2 Additional Required Construction Features – See Fire Protection Plan Map

As mitigation for driveways that exceed 150 feet in length, the following additional building features shall be required of the structures shown in grey on the Fire Protection Plan Map:

a. Exterior walls facing the driveway shall have 2 hour rated walls.

b. Interior fire sprinkler shall be extended to the attic space including the areas over bathrooms and closets.

## 7.0 MITIGATION MEASURES, DESIGN, AND EVACUATION CONSIDERATIONS

- All newly constructed structures will be built to ignition resistant building requirements (see APPENDIX ‘C’ for a summary of these requirements) including the installation of automatic interior fire sprinkler systems (National Fire Protection Association – NFPA Standard 13R)

- Fuel treatments surrounding all structures that abut flammable native vegetation shall be landscaped and irrigated (see Fire Protection Plan Map).

- This report and its recommendations shall be incorporated by reference into the final project Conditions of Approval to ensure compliance with codes/regulations and significance standards.

All residents, guests, workers, and owners shall utilize the following evacuation procedures:

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

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

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

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

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

The primary evacuation route will be via Piraeus Street but the direction to evacuate will be determined by the Fire Department in consultation with other agencies.

### 7.1 Additional Requirements

- Fuel Modification shall be completed prior to commencing any construction. During construction, at least 50 feet of clearance around the structures shall be kept free of all flammable vegetation as an interim fuel modification zone during construction of structures, except where habitat protection is required.

- All access roadways and driveways shall be constructed and subsequently approved by EFD prior to the delivery of combustible materials.

- Hydrants and all fire department connections shall be installed and approved prior to the delivery of combustible materials.

- Debris and trimmings produced by thinning and pruning will be removed from the site, or, if left, shall be converted into mulch and evenly dispersed to a maximum depth of four inches. Such trimmings will not be located within 50 feet of structures nor designated protected habitat.

- Any damaged or replacement window, siding, roof coverings, and specific non-combustible wall will meet or exceed the original intent of this Fire Protection Plan.

### 7.2 Mandated Inclusions in the Piraeus Point Covenants and Agreements

The Piraeus Point Covenant and Agreement shall include the following statements:

1. The HOA is responsible for all Zone 1A and 1B fuel treatment measures within the property.

2. All annual Zone 2 fuel treatment maintenance is the responsibility of the HOA.

3. Trash dumping and or disposal of yard trimmings in the fuel treatment zones shall not be allowed.

4. The Encinitas Fire Department (EFD) will hold the HOA accountable for enforcement of all wildland fire protection issues discussed in this plan.

5. All landscaping plans, including additional structures, must be reviewed and approved under the guidance and approval of the EFD.

6. As used herein, "Fire Prevention Maintenance" shall mean the following:

   (i) All portions of the property that constitute Fuel Modification Zones or designated interior/manufactured slopes shall be regularly maintained by the owners on a year-round basis in accordance with the Fire Protection Plan on file with the property manager for the development.

   (ii) The irrigation system for all Fuel Modification Zones shall always be kept in good condition and proper working order.

## 8.0 Owner/Occupant Education

Each occupant, shall be aware of the herein described fire protection measures. Of particular importance are APPENDICES ‘A’, ‘B’, and ‘D’ of this plan. These provide guidance in the types of plants, building features, and materials that are allowed to be established in landscaped and fuel modification areas. Plant selection is critical as embers often travel over a mile during Santa Ana wind events.

A copy of this plan shall be available for review in the sales office for each occupant to review. In the event of the sale of the property, the new property owner shall be provided with a copy of this FPP to insure continued compliance with all Fuel Modification maintenance and construction

requirements. The HOA shall yearly provide the residents with information regarding the wildfire mitigation efforts necessary for fire safety that are contained within this FPP.

## 9.0 FIRE PROTECTION PLAN MAP

Attached as a separate document to this FPP is the FIRE PROTECTION PLAN MAP which depicts the location of all fuel treatment locations and descriptions. Appendix 'F' contains a small version of the plan showing the fuel treatment zones. Due to the map size in this document, it is best to use the attached full size map or pdf file containing the map for implementation purposes.

## 10.0 CONCLUSIONS

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

- The requirements of this FPP provide the fuel treatment standards to mitigate the exposure of people or structures to a significant risk of loss, injury, or death. Zone 1A and portions of 1B includes the level building pad and provides the defensible space zone for fire suppression forces and will protect structures from radiant and convective heat. Zone 2 thinning zone consists of fire resistant and maintained plantings.
- The development will have adequate emergency access in terms of access and construction standards for roadways and streets. The EFD will provide fire protection and other fire departments including CAL FIRE will assist through mutual aid.
- Water supplies will provide adequate water for fire protection.

## 11.0 LIST OF PREPARERS, PERSONS AND ORGANIZATIONS CONTACTED

### 11.1 List of Preparers

The principal author and preparer of this Fire Protection Plan is Herbert A. Spitzer, Senior Wildland Fire Associate of ***FIREWISE*2000, LLC.** The document has been reviewed and certified by Melvin Johnson, Owner and San Diego County DPLU Certified CEQA Wildland Fire Consultant of ***FIREWISE*2000, LLC**.

### 11.2 List of Persons Contacted or who Provided Input During the Course of this Project

1. David Shepherd, Director of Entitlements, Lennar
2. Caroline Garcia, Biological Consultant – ECORP Consulting, Inc.
3. Hans Schmidt, Fire Marshal, City of Encinitas
4. Jesus Alan Figueroa – Schmidt Design
5. Brian Grover – Nolan Communities

## 12.0 REFERENCES

The most current edition of the documents described below shall be utilized.


1. Andrews, PL (2014) Current status and future needs of the BehavePlus Fire Modeling System. International Journal of Wildland Fire 2014, 23, 21–33. http://www.publish.csiro.au/wf/WF12167

2. *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.

3. *Behave Plus Fire Modeling System, Version 5.0.5,* General Technical Report RMRS-GRT-106WWW Revised. July 2008. Patricia L. Andrews, Collin D. Bevins, Robert Seli. United States Department of Agriculture - Forest Service, Rocky Mountain Research Station, Missoula, Montana.

4. National Fire Protection Association - NFPA 1140 *Standard for Wildland Fire Protection*. Print, 117 pp., 2022 Edition.

5. National Fire Protection Association - NFPA 13R Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies.

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

7. California Public Resources Codes sections 4201 through 4204

8. California Government Code, sections 51175 through 51189

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

10. *County of San Diego. Plant List and Acceptable Plants for a Defensible Space in Fire Prone Areas. Department of Planning and Land Use, December 1998.*

11. *Chapter 7A-California Building Code*

12. *The California State and Local Responsibility Area Fire Hazard Severity Zone Map*

13. Encinitas Fire Department – *Wildland/Urban Interface Development Standard Guidelines*

14. Encinitas Fire Department Ordinance 2019-27 adopting the City of Encinitas Fire Code.

15. City of Encinitas Ordinance 2021-08, Amendments to the Municipal Code.

# APPENDIX ‘A’

## City of Encinitas
### Plant List

*City of Encinitas*
*Fire Prevention Bureau*
*505 S. Vulcan Avenue, Encinitas, California 92024-3633*

In an effort to protect homes from a future devastating Wildland fire, the Encinitas Fire Department has put together this booklet. You will find valuable information pertaining to both desirable and undesirable trees, shrubs, ground covers, vines, and palm trees. The goal of this brochure is to educate the public on issues pertaining to landscaping and to keep their homes safe. Please feel free to contact us if you have any questions, comments, or concerns.

| **Canopy Trees**: Broad spreading trees that make good accent trees. | | | |
|---|---|---|---|
| Grow 25-50 ft. tall and should be spaced 30-40 ft. apart. | | | |
| **Botanical Name** | **Common Name** | **Dripline To Structure (ft.)** | **Evergreen or Deciduous** |
| Albizia julibrissin | Silk Floss | 10 | D |
| Chorisia speciosa | Floss Silk Tree | 10 | D |
| Cinnamomum camphora | Camphor | 10 | E |
| Erythrinia species | Coral | 10 | D |
| Ficus species | | 10 | D |
| Jacaranda mimosifolia | | 10 | D |
| Koelreuteria paniculate | Golden Raintree | 10 | D |
| Melaleuca linarifolia | Paperbark | 10 | E |
| Pinus halepensis | Aleppo Pine | 30 | E |
| Platanus acerfolia | Sycamore | 10 | D |
| Phoenix canariensis | Canary Island Date Palm | 30 | E |
| Podacarpus gracilior | Fern Pine | 10 | E |
| Pyrus kawakami | Evergreen Pear | 10 | E |
| Quercus species | Oak | 10 | E |
| Rhus lancea | African Sumac | 10 | E |
| Robinia pseudoacacia | Black Locust | 10 | D |
| Schinus species | Pepper Tree | 30 | E |
| Spathodea campanulata | African Tulip Tree | 10 | D |
| Tipuana tipu | Tipu Tree | 10 | D |
| Ulmus parvifolia | Chinese Elm | 10 | D |
| Zelkova serrata | Sawleaf Zelkova | 10 | D |

| **Vertical Growing Trees:** Upright character and are good choices for narrow areas. | | | |
|---|---|---|---|
| Grow up to 30 ft. tall and should be spaced 20-30 ft. apart. | | | |
| **Botanical Name** | **Common Name** | **Dripline To Structure (ft.)** | **Evergreen or Deciduous** |
| Betula pendula | European White Birch | 10 | D |
| Brachychiton populeneus | Bottle Tree | 10 | D |
| Callistemon viminalis | Weeping Bottle Brush Tree | 30 | E |
| Dracena Drago | Dragon Tree | 10 | E |
| Hymenosporum flavum | Sweetshade Tree | 10 | E |
| Maytenus boaria | Mayten | 10 | E |
| Melaleuca quinquenervia | Paperbark Tree | 10 | E |
| Metrosideros tomentosa | New Zealand Christmas Tree | 10 | E |
| Tristania conferta | Brisbane Box Tree | 10 | E |

| **Ornamental Trees:** Various canopy heights and widths that serve many uses such as accent trees. | | | |
|---|---|---|---|
| Grow 15-40 ft. tall and should be spaced 20-25 ft. apart. | | | |
| **Botanical Name** | **Common Name** | **Dripline To Structure (ft.)** | **Evergreen or Deciduous** |
| Acer palmatum | Japanese Maple | 10 | D |
| Agonis flexuosa | Peppermint Tree | 10 | E |
| Arbutus unedo | Strawberry Tree | 10 | E |
| Avocado species | | 30 | E |
| Bauhinia species | Orchid tree | 10 | D |
| Cassia leptophylla | Gold Medallion Tree | 10 | D |
| Cercis candensis | Redbud | 10 | D |
| Citrus species | | 10 | E |
| Cupniopsis anacardiodes | Carrotwood tree | 10 | E |
| Geijera parvifolia | Australian Willow | 10 | E |
| Lagerstroemia indica | Crape myrtle | 10 | D |
| Lagunaria patersonii | Primrose Tree | 10 | E |
| Magnolia species | | 10 | E/D |
| Olea europaea | Olive Tree | 10 | E |
| Pistacia chinensis | Chinese Pistache | 10 | D |
| Prunus species | | 10 | E/D |
| Pyrus species | Ornamental Pear | 10 | E/D |
| Tabebuia species | Trumpet Tree | 10 | E/D |

| **Low-Multi Branching Trees:** Large shrubs and small tree forms good for under-story screening. | | | |
|---|---|---|---|
| Grow 10-25 ft. tall and should be spaced 15-20 ft. apart. | | | |
| **Botanical Name** | **Common Name** | **Dripline To Structure (ft.)** | **Evergreen or Deciduous** |
| Acacia species | | 30 | E |
| Eriobotrya deflexa | Bronze Loquat | 10 | E |
| Feijoa sellowiana | Guava | 10 | E |
| Melalueca nesophila | Pink Melalueca | 10 | E |
| Myoporum laetum | | 10 | E |
| Pittosporum undulatum | Victorian Box | 10 | E |
| Punica granatum | Pomegranate | 10 | D |
| Thevitia thevetiodes | Giant Thevitia | 10 | E |

| **Tall Skyline Trees:** Dramatic Silhouettes against the skyline. | | | |
|---|---|---|---|
| Grow 40-70 ft. tall and should be spaced 30-40 ft. apart. | | | |
| **Botanical Name** | **Common Name** | **Dripline To Structure (ft.)** | **Evergreen or Deciduous** |
| Acer macrophyllum | Bigleaf Maple | 10 | D |
| Alnus rhombifolia | White Alder tree | 10 | D |
| Cedrus species | Cedar tree | 30 | E |
| Eucalyptus species | | 30 | E |
| Fraxinus species | Ash tree | 10 | D |
| Grevilla robusta | Silk Oak | 10 | D |
| Liriodendron tulipifera | Tulip Tree | 10 | D |
| Liquidambar species | Sweet gum | 10 | D |
| Pinus canariensis | Canary Island Pine | 30 | E |
| Pinus torreyana | Torrey Pine | 30 | E |
| Platanus racemosa | Sycamore | 10 | D |
| Populus fremonti | Western Cottonwood | 10 | D |
| Populus nigri | Lombardy Poplar | 10 | D |

| **Palm Trees:** Vary from single to multiple trunks. | | | |
|---|---|---|---|
| Grow 20-100 ft. tall and should be spaced 20-40 ft. apart. | | | |
| **Botanical Name** | **Common Name** | **Dripline To Structure (ft.)** | **Evergreen or Deciduous** |
| Archontophoenix alexandrae | Alexandra Palm | 10 | E |
| Archontophoenix cunninghamiana | King Palm | 10 | E |
| Brahea armata | Blue Hesper Palm | 30 | E |
| Brahea edulis | Guadalupe Palm | 30 | E |
| Chamaerops humilis | Mediterranean Fan Palm | 30 | E |
| Cycas revoluta | Sago Palm | 10 | E |
| Howea forsteriana | Kentia Palm | 30 | E |
| Phoenix canariensis | Canary Island Date Palm | 30 | E |
| Phoenix dactylifera | Date Palm | 30 | E |
| Phoenix reclinata | Senegal Date Palm | 30 | E |
| Phoenix roebelenii | Pygmy Date Palm | 30 | E |
| Syagrus romanzoffianum | Queen Palm | 10 | E |
| Trachycarpus fortunei | Windmill Palm | 30 | E |
| Washingtonia filifera | California Fan Palm | 30 | E |
| Washingtonia robusta | Mexican Fan Palm | 30 | E |
| All other Palm species | Various Palms | 30 | E |

NOTE:

** This booklet is intended to guide the public on what types of trees and shrubs are acceptable to the Encinitas Fire Department. Other trees and shrubs not listed are still acceptable to use upon approval by the Encinitas Fire Department.

** Trees listed as requiring 30' spacing from dripline to structure are considered non-fire resistive trees by the Encinitas Fire Department. Consult a design professional or the Encinitas Fire Department for site specific questions regarding tree placement

** Trees that grow near power lines pose a potential electrical hazard. San Diego Gas & Electric (SDG&E) is required by law to maintain minimum clearances between all vegetation and power lines. No tree should be allowed to grow within 10 feet of electrical conductors. SDG&E provides a suggested species list of trees that are appropriate to grow under or adjacent to power lines. This list, along with other information regarding SDG&E Vegetation Management, can be found at http://sdge.com/safety/treesafety.

*City of Encinitas*
*Fire Prevention Bureau*
*505 S. Vulcan Avenue, Encinitas, California 92024-3633*

| **Shrubs** | |
|---|---|
| **Botanical Name** | **Common Name** |
| Abelia grandiflora | Glossy abelia |
| Abutilon palmeri | Indian Mallow |
| Aesculus californica | California buckeye |
| Alyogyne huegelii | Blue Hibiscus |
| Atriplex canescens | Four-wing saltbush |
| Atriplex glauca | Saltbush |
| Atriplex lentiformis | Quail saltbush |
| Buxus species | Boxwood |
| Baccharis glutinosa | Mule fat |
| Baccharis pilularis | Coyote Bush |
| Carissa grandiflora | Natal Plum |
| Ceanothus spp. | California lilac |
| Cistus spp. | Rockrose |
| Coprosma repens | Mirror plant |
| Echium candicans | Pride of Madiera |
| Elaeagnus pungens | Silverberry |
| Encelia californica | California sunflower |
| Eriobotrya deflexa | Bronze loquat |
| Eriophyllum confertiflorum | Golden Yarrow |
| Escallonia spp. | Escallonia |
| Euryops pectinatus | Shrub daisy |
| Feijoa sellowiana | Pineapple guava |
| Galvezia speciosa | Bush snapdragon |
| Heteromeles arbutifolia | Toyon |
| Ilex species | Holly |
| Lavandula spp. | Lavender |
| Leptospermum scoparium | New Zealand Tea Tree |
| Ligustrum japonicum | Japanese privot |
| Mahonia aquifolium | Oregon grape |
| Myoporum laetum | Myoporum |
| Myrtus communis | Myrtle |
| Nerium Oleander | Dwarf oleander |
| Photina spp. | Photina |

*Tel: (760) 633-2820; Fax: (760) 633-2818*

| | |
|---|---|
| Pittosporum tobria | Tobria |
| Plumbago auriculata | Cape plumbago |
| Prunus caroliniana | Carolina Laurel Cherry |
| Prunus ilicifolia | Hollyleaf cherry |
| Punica granatum | Pomegranate |
| Pyracantha species | Firethorn |
| Quercus dumosa | Coast scrub oak |
| Rhamnus californica | Coffeeberry |
| Rhaphiolepis indica | India hawthorn |
| Rhus integrifolia | Lemonadeberry |
| Ribes speciosum | Fuchsia-flowered gooseberry |
| Rosa species | Rose |
| Rosa banksiae | Lady Bank's rose |
| Salvia greggii | Autumn sage |
| Salvia leucantha | Mexican bush sage |
| Santolina chamaecyparissus | Lavender cotton |
| Trichostema lanatum | Wooly blue curls |
| Westringia fruticosa | Coast rosemary |
| Xylosma congestum | Shiny Xylosma |

| **Perennials** | |
|---|---|
| **Botanical Name** | **Common Name** |
| Achillea species | Yarrow |
| Agapanthus species | Lily-of-the-Nile |
| Amaryllis belladonna | Naked Lady |
| Anigozanthos species | Kangaroo paw |
| Artemisia 'power castle' | |
| Baileya multiradiata | Desert marigold |
| Camissonia cheiranthifolia | Beach evening primrose |
| Camellia species | Camellia |
| Clivia miniata | Clivia |
| Coreopsis grandiflora | |
| Coreopsis maritime | Sea dahlia |
| Dietes species | Fortnight lily |
| Felicia ammeloides | Blue marguerite |
| Heuchera species/hybrids | Coral Bells |
| Iris douglasiana | Pacific coast iris |
| Kniphofia uvaria | Red-hot poker |
| Lantana species | Lantana |
| Limonium perezii | Sea lavender |

| | |
|---|---|
| Narcissus species | Daffodil |
| Oenothera species | Primrose |
| Penstemon species | |
| Senecio cineraria | Dusty miller |
| Sisyrinchium bellum | Blue-eyed grass |
| Tagetes lemonii | Mountain marigold |
| Tulbaghia violacea | Society garlic |

| **Ground Covers** | |
|---|---|
| **Botanical Name** | **Common Name** |
| Ajuga reptans | Carpet bugle |
| Arctostaphlos edmunsii 'Little Sur' | Little Sur manzanita |
| Arctostaphlos hookeri 'Monterey carpet' | Monterey carpet manzanita |
| Baccharis pilularis 'Twin Peaks' or 'Pigeon Point' | Coyote bush |
| Carex species | Sedge |
| Carissa macrocarpa | Natal Plum |
| Ceanothus griseus horizontalis | Ceanothus |
| Cerastium tomentosum | Snow-in-summer |
| Delosperma alba | White trailing iceplant |
| Erigeron karvinskianus | Fleabane, Mexican Daisy |
| Fragaria chiloensis | Wild strawberry |
| Gazania hybrids | Gazania species |
| Lampranthus species | Iceplant |
| Lantana montevidensis | Lantana |
| Mahonia repens | Creaping Mahonia |
| Malephora crocea | Iceplant |
| Malephora luteola | Iceplant |
| Myoporum parvifolium | Myoporum |
| Oenothera berlandieri | Mexican evening primrose |
| Oenothera stubbei | Saltillo evening primrose |
| Osteospermum fruticosum | Trailing African daisy |
| Pelargonium peltatum | Ivy geranium |
| Rosmarinus officinalis 'Protratus' | Trailing Rosemary |
| Sedum brevifolium | Stonecrop |
| Sedum confusum | Stonecrop |
| Sedum rubrotinctum | Pork and beans |
| Thymus species | Thyme |

| | |
|---|---|
| Verbena species | Verbena |

| **Vines** | |
|---|---|
| **Botanical Name** | **Common Name** |
| Bougainvillea species | Bougainvillea |
| Calliandra haematocephala | Pink powder puff |
| Clematis species | Clematis species |
| Clytostoma callistegioides | Violet trumpet vine |
| Distictis buccinatoria | Blood-red trumpet vine |
| Distictis 'Rivers' | Royal trumpet vine |
| Grape species | Wine grapes |
| Hardenbergia comptoniana | Lilac vine |
| Mandevilla hybrids | Mandevilla |
| Pandorea jasminoides | Bower vine |
| Parthenocissus tricuspidata | Boston ivy |
| Passiflora species | Passion vine |
| Rosa species | Climbing rose types |
| Thunbergia gregorii | Orange clock vine |
| Trachelospermum jasminoides | Star jasmine |
| Vitis californica | California wild grape |
| Wisteria sinensis | Chinese wisteria |

| **Succulents and Cacti** | |
|---|---|
| **Botanical Name** | **Common Name** |
| Aeonium species | |
| Agave species | |
| Aloe species | |
| Cereus perivianus | Peruvian apple cactus |
| Crassula argentea | Jade plant |
| Dudleya species | |
| Echeveria species | Hen and chicks |
| Euphorbia species | |
| Kalanchoe blossfeldiana | Kalanchoe |
| Opuntia species | Cacti |
| Sansevieria trifasciata | Mother-in-law's tongue |
| Sedum species | Stonecrop |
| Yucca gloriosa | Spanish dagger |

# APPENDIX ‘B’

## City of Encinitas
## Undesirable Plant List

# Undesirable Plants and Weeds

The following plants and weeds have been declared "undesirable" within the 100-foot Fuel Modification Zone surrounding all structures. All vegetation is listed alphabetically by botanical name, followed by the common name.

| BOTANICAL NAME | COMMON NAME |
|---|---|
| Adenostoma fasciculatum | Chamise |
| Adenostoma sparsifolium | Red Shanks |
| Anthemix cotula | Mayweed |
| Artemisia californica | California Sagebrush |
| Arundo Donax | Giant Cane |
| Brassica rapa | Wild Turnip, Yellow Mustard, Field |
| Brassica nigra | Black Mustard |
| Cardaria draba | Hoary Cress, Perennial Peppergrass |
| Cirsium vulgare | Wild Artichoke |
| Conyza canadensis | Horseweed |
| Cortaderia selloana | Pampas Grass |
| Cytisus Spp. | Scotch Broom, French Broom |
| Eriogonum fasciculatum | Common Buckwheat |
| Heterotheca grandiflora | Telegraph plant |
| Lactuca serriola | Prickly Lettuce |
| Nicotiana bigelovii | Indian Tobacco |
| Nicotiana glauca | Tree Tobacco |
| Salsola australis | Russian Thistle or Tumbleweed |
| Salvia mellifera | Black Sage |

# APPENDIX 'C'

## Ignition Resistant Construction Requirements

The following is a summary of the current requirements for ignition resistant construction for high fire hazard areas under Chapter 7A of the California Building Code (CBC) 2019 edition and the current California Residential Code. However the requirements listed below are **not** all inclusive and all exterior building construction including roofs, eaves, exterior walls, doors, windows, decks, and other attachments must meet the current CBC Chapter 7A ignition resistance requirements, the California Fire Code, and any additional County and/or City codes in effect at the time of building permit application. See the currrent applicable codes for a detailed description of these requirements and any exceptions.

1. All structures will be built with a Class A Roof Assembly and shall comply with the requirements of Chapter 7A and Chapter 15 of the California Fire Code. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.

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

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

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

5. Enclosed roof eaves and roof eave soffits with a horizontal underside, sloping rafter tails with an exterior covering applied to the under-side of the rafter tails, shall be protected by one of the following:
    - noncombustible material
    - Ignition-resistant material
    - One layer of $^{5}/_{8}$-inch Type X gypsum sheathing applied behind an exterior covering on the underside of the rafter tails or soffit
    - The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the rafter tails or soffit including assemblies using the

gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual

- Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in Section 707A.10 when tested in accordance with the test procedures set forth in ASTM E2957.
- Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3.

**Exceptions**: The following materials do not require protection:
1. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
2. Fascia and other architectural trim boards.

6. The exposed roof deck on the underside of unenclosed roof eaves shall consist of one of the following:
    - Noncombustible material, or
    - Ignition-resistant material, or
    - One layer of 5/8-inch Type X gypsum sheathing applied behind an exterior covering on the underside exterior of the roof deck, or
    - The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the roof deck designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association fire Resistance Design Manual.

    **Exceptions**: The following materials do not require protection:
    1. Solid wood rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
    2. Solid wood blocking installed between rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
    3. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
    4. Fascia and other architectural trim boards.

7. Vents - ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents, other materials or other devices that meet one of the following requirements:

    A. Vents listed to ASTM E2886 and complying with all the following:
        i. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
        ii. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.

iii. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

B. Vents shall comply with all the following:
   i. The dimensions of the openings therein shall be a minimum of $^1/_{16}$-inch (1.6 mm) and shall not exceed $^1/_8$-inch (3.2 mm).
   ii. The materials used shall be noncombustible.
   **Exception:** Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh, may be of combustible materials.
   iii. The materials used shall be corrosion resistant.

8. Vents shall not be installed on the underside of eaves and cornices.

   **Exceptions:**
   1. Vents listed to ASTM E2886 and complying with all the following:
      - There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
      - There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
      - The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

   2. The enforcing agency shall be permitted to accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.

   3. Vents complying with the requirements of Section 706A.2 shall be permitted to be installed on the underside of eaves and cornices in accordance with either one of the following conditions:

      3.1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or,

      3.2. The exterior wall covering, and exposed underside of the eave are of noncombustible materials, or ignition-resistant materials, as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the requirements

9. All chimney, flue or stovepipe openings that will burn solid wood will have an approved spark arrester. An approved spark arrester is defined as a device constructed of nonflammable materials, having a heat and corrosion resistance equivalent to 12-gauge wire, 19-game galvanized steel or 24-gage stainless steel. or other material found satisfactory by the Fire Protection District, having ½-inch perforations for arresting burning carbon or sparks nor block spheres having a diameter less than 3/8 inch (9.55 mm). It shall be installed to be visible for the purposes of inspection and maintenance and removeable to allow for cleaning of the chimney flue.

10. All multi-family structures will have automatic interior fire sprinklers installed according to the National Fire Protection Association (NFPA) 13R 2021 edition - *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*.

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

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

12. Exterior walls shall extend from the top of the foundation to the roof and terminate at 2-inch nominal solid blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.

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

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

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

16. 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.

17. Deck Surfaces shall be constructed with one of the following materials:
    - Material that complies with the performance requirements of Section 709A.4 when tested in accordance with both ASTM E2632 and ASTM E2726, or
    - Ignition-resistant material that complies with the performance requirements of 704A.3 when tested in accordance with ASTM E84 or UL 723, or
    - Material that complies with the performance requirements of both SFM Standard 12-7A-4 and SFM Standard 12-7A-5, or
    - Exterior fire-retardant treated wood, or
    - Noncombustible material, or
    - Any material that complies with the performance requirements of SFM Standard 12-7A-4A when the attached exterior wall covering is also composed of noncombustible or ignition-resistant material.

18. 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.

19. Exterior windows, skylights and exterior glazed door assemblies shall comply with one of the following requirements:
    - Be constructed of multiplane glazing with a minimum of one tempered pane meeting the requirements of Section 2406 Safety Glazing, or
    - Be constructed of glass block units, or
    - Have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 257, or
    - Be tested to meet the performance requirements of SFM Standard 12-7A-2.

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

21. Detached accessory buildings that are less than 120 square feet in floor area and are located more than 30 feet but less than 50 feet from an applicable building shall be constructed of noncombustible materials or of ignition-resistant materials as described in Section 704A.2 of the California Building Code.

    **Exception:** Accessory structures less than 120 square feet in floor area located at least 30 feet from a building containing a habitable space.

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

23. Exterior garage doors shall resist the intrusion of embers from entering by preventing gaps between doors and door openings, at the bottom, sides, and tops of doors, from exceeding 1/8 inch. Gaps between doors and door openings shall be controlled by one of the methods listed in this section.
    - Weather-stripping products made of materials that:
      (a) have been tested for tensile strength in accordance with ASTM D638 (Standard Test Method for Tensile Properties of Plastics) after exposure to ASTM G155 (Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials) for a period of 2,000 hours, where the maximum allowable difference in tensile strength values between exposed and non-exposed samples does not exceed 10%; and (b) exhibit a V-2 or better flammability rating when tested to UL 94, Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances.
    - Door overlaps onto jambs and headers.
    - Garage door jambs and headers covered with metal flashing.

24. Exterior doors shall comply with one of the following:
    1. The exterior surface or cladding shall be of noncombustible material or,
    2. The exterior surface or cladding shall be of ignition-resistant material or,
    3. The exterior door shall be constructed of solid core wood that complies with the following requirements:
       3.1. Stiles and rails shall not be less than 1-3/8 inches thick.
       3.2. Panels shall not be less than 1-1/4 inches thick, except for the exterior perimeter of the panel that shall be permitted to taper to a tongue not less than 3/8 inch thick.
    4. The exterior door assembly shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252 or,
    5. The exterior surface or cladding shall be tested to meet the performance requirements of Section 707A.3.1 when tested in accordance with ASTM E2707 or,
    6. The exterior surface or cladding shall be tested to meet the performance requirements of SFM Standard 12-7A-1.

25. Fire access tunnels shall have two hour rated walls consisting of two layers of 5/8" Type 'X' gypsum wallboard panels on each side of the studs. The EZ Taping Systems "Fire Tape" product or equivalent should be used as an alternative to convention joint tape when:
    1. Two or more layers of listed Type 'X' gypsum wallboard are applied vertically with joints staggered and joints of the face board are":
       a. Tightly butted and taped with EZ Taping Systems "Fire Tape" or equivalent product or

b. Finished with joint compound of EZ Taping Systems “Fire Tape” or equivalent product if the gap between gypsum wallboard panels is visible at the joint.

2. Two or more layers of USG “Sheetrock” Fire code C gypsum wallboard are applied (horizontally or vertically).
3. Gypsum panels shall be attached with Type S drywall screws, placed 8” oc to vertical edges and 12” oc to top and bottom runners and intermediate studs.
4. Fire Tape shall be nominal 2” wide and applied on the vertical joints at studs.

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

# APPENDIX ‘D’

## 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**

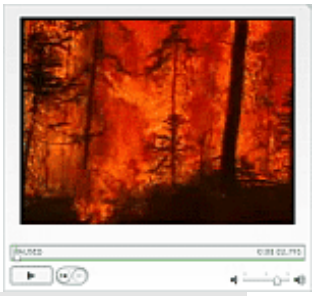
## II. FRX Exterior Fire-Retardant Treated Wood

### 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./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 3x decking and installed over solid wood joists spacing 24” or less on center with 6x6 columns, 4x10 or 6x8 beams and 4x8 joists.

## V. Vents

Examples of Approved Vents

**Brandguard**


**O’Hagin Fire & Ice® Line – Flame and Ember Resistant**

An available option for all O’Hagin attic ventilation products, this attic vent not only features all the same design, construction elements and color choices as the O’Hagin Standard Line, but also features an interior stainless-steel matrix that resists the intrusion of flames and embers. This patent-pending attic vent is accepted for use by many local fire officials for installation in Wildland Urban Interface (WUI) zones.

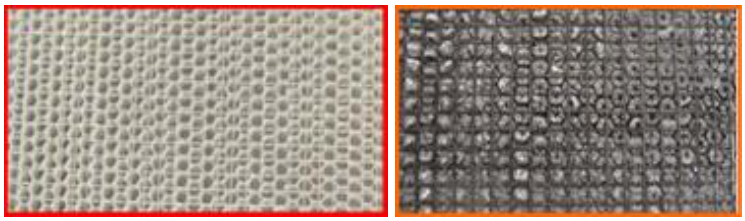
## Vulcan Vents

The founders of Gunter Manufacturing have been working closely over the last two years, with the scientists and inventors of Vulcan Technologies to bring to market this incredible product.

Combining our quality vent products with the fire-stopping honeycomb matrix core designed by Vulcan has produced unique and remarkable results.

At Gunter manufacturing we have over 50 years combined sheet metal manufacturing experience. Special orders are not a problem.  Our vent frames are industry standard frames so there is little or no learning curve for installers and contractors. Our goal is to provide people with the vents they need to secure their homes with additional safety against wildfires and give them piece of mind from knowing that their home is protected by a product that works!

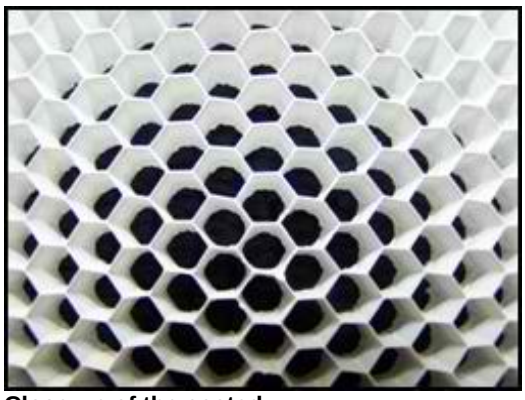
The core of our fire and ember safe vents are manufactured out of hi-grade aluminum honeycomb and coated with an intumescent coating made by FireFree Coatings. The intumescent coating is designed to quickly swell up and close off when exposed to high heat. The expanded material acts as an insulator to heat, fire and embers



**Before** **After**

After the cells close off, they are extremely well insulated, and fire or embers cannot penetrate.

Even before the cells close off, the vent is designed to protect against flying embers. In many cases embers will attack a home before fire ever comes near, so this feature is very important.



**Close-up of the coated honeycomb matrix.**

**Fire easily passes through a standard vent, on the left, but stops cold when it comes up against a Vulcan Vent shown on right.**

# APPENDIX E

## DEFINITIONS & TERMS USED IN FIRE PROTECTION AND FUEL MODIFICATION PLANS

**AASHTO HB-17** – Standard Specifications for Highway Bridges, 17th edition produced by the American Association of State and Highway Transportation Officials.

**AIRTANKER** – a fixed-wing aircraft that is used to drop either water or a fire retardant on or in the path of a wildfire.

**ANSI** – American National Standards Institute. Its mission is to enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems and to safeguard their integrity. Standard A300 is utilized in tree care, especially woody plants. The goal of ANSI A300 is to provide performance standards based on current research and sound practice for writing specifications to manage trees, shrubs, and other woody plants.

**ASTM** – American Society for Texting and Materials.

**BRUSH/CHAPARRAL** – The predominant plant community in the canyons of southern California and portions of the California Coast Range and foothills of the Sierra Nevada Mountains.

**CLASS A FIRE RATING** - A class A fire rating is the best fire rating of materials that can be achieved. Class A fire ratings indicate a flame spread rating somewhere between zero and 25 with zero being the that can be achieved. Materials that fall into a Class A rating include things like brick, gypsum wallboard, and fiber cement exterior materials. These materials do not burn well and are very unlikely to contribute fuel to a fire.

**CLIMAX VEGETATION** – The final stage in ecological plant succession in which a relatively constant environment is reached and species composition no longer changes in a directional fashion, but fluctuates about some mean, or orange, community composition.

**COMBUSTIBLE** – Any material that, in the form in which it is used and under the conditions anticipated will ignite and burn or will add appreciable heat to an ambient fire.

**COMBUSTIBLE VEGETATION** – Means material that in its natural state will readily ignite, burn, and transmit fire from native or landscape plants to any structure or other vegetation. Combustible vegetation Includes dry grass, brush, weeds, litter, or other flammable vegetation that creates a fire hazard.

**CONDUCTION** - Direct transfer of heat by objects touching each other.

**CONVECTION HEAT** - Transfer of heat by atmospheric currents. This is most critical under windy conditions and in steep terrain.

**CROWN** - Upper part of tree or other woody plant carrying the main branch system and foliage.

**CANOPY** – A more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees or other woody growth.

**DEAD FUEL MOISTURE** – The moisture content of dead organic fuels, expressed as a percentage of the oven dry weight of a sample, that is controlled entirely by exposure to environmental conditions. Dead fuel moistures are monitored in 1-Hr (grass leaves), 10-Hr (fuels 0.24" to 1" in diameter) , 100-Hr (fuels that range between 1-3 inches in diameter) and 1000-Hr (fuels that are in the 3–8-inch diameter class.

**DEFENSIBLE SPACE** - An area around the perimeter of structures or developments, whether natural or man-made where material capable of allowing a fire to spread unchecked has been treated, cleared, or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.

**DRIPLINE** - Ground area at the outside edge of the canopy.

**DROUGHT TOLERANCE** - The ability of a plant or tree to survive on little water.

**ENVIRONMENTALLY SENSITIVE AREA -** any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activities and development.

**EROSION** – a geological process in which earthen materials are worn away either gradually or immediate wearing away of the land by water, ice or wind. of a slopes form or stability due to hydraulic action, abrasion, attrition, and solution where water dissolves the underlying rocks.

**FINE FUELS** - Fuels such as grass, leaves, and draped pine needles which, when dry, ignite readily and are consumed rapidly (also called flash fuels).

**FIRE BEHAVIOR** – The way a fire reacts to the influences of fuel, weather, and topography.

**FIRE BREAK** - Removal of growth, usually in strips, around housing developments to prevent a fire from spreading to the structures from open land or vice versa.

**FIRE FLOW** – the flow rate of a water supply, measured at 20 psi (137.9 kPa) residual pressure, that is available for the responding fire department for manual firefighting, typically that is water that is available at the surround fire hydrants, but can be supplied with another approved source such as a static water supply like a tank or pond, or even using a fire department anker shuttle service.

**FIRE HAZARD** - refers to the state of the fuel, exclusive of weather or the environs in which the fuel is found.

**FIRE HAZARD SEVERITY ZONES** – Are geographical areas designated pursuant to California Public Resources Code sections 4201 through 4204 and classified as Very High, High and Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code sections 51175 through 51189. The California Code of

Regulations, Title 14, Section 1280 entitles maps of these geographical areas as "Maps of the Fire Hazard Severity Zones in the State Responsibility Area of California."

**FIRE RESISTANT** - Any plant will burn with enough heat and proper conditions. Resistance is often used as a comparative term relating to the ability of a plant to resist ignition.

**FIRE RESISTIVE PLANT LIST** - List of plants exhibiting characteristics of low fuel volume, fire resistance, and drought tolerance which make them desirable for planting in areas of high fire danger.

**FIRE RETARDANCE** - Relative comparison of plant species related to differences in fuel volume, inherent flammability characteristics, and ease of fire spread.

**FIRE WEATHER** – The types of weather that create favorable conditions for the start and spread of wildfires are collectively referred to as fire weather.

**FLAME LENGTH** – The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

**FOEHN WIND** – is a type of dry, relatively warm, downslope wind that occurs in the lee (downwind side) of a mountain range. The descending air is warmed and dried due to adiabatic compression producing critical fire weather conditions. Locally called by various names including but not limited to Santa Ana winds, Devil winds, North winds, Mono winds, etc.

**FUEL** – Any combustible materials, especially petroleum-based products and wildland vegetation.

**FUEL BREAK** - A wide strip or block of land on which the native or pre-existing vegetation has been permanently modified so that fires burning into it can be more readily extinguished.

**FUEL LOAD** - The weight of fuels in a given area, usually expressed in tons per acre.

**FUEL MODEL** – A simulated fuel complex for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

**FUEL MODIFICATION PLAN** - An approved plan or document which identifies specific fuel modification zones within a property that are subject to fuel modification. Fuel modification plans show the area and location of all hardscape/softscape improvements and fuel modification necessary to achieve the minimum acceptable level of risk to structures from fires in combustible vegetation.

**FUEL MODIFICATION ZONE** - A specific area where vegetation has been removed, planted, or modified in conjunction with an approved fuel modification plan that increases the likelihood that a structure will survive a wildfire, improve the defensible space around the structure for firefighting activities, and prevents direct flame contact with structures. Vegetation includes native and ornamental plants, non-native naturalized grasses, and other invasive or naturalized species. Fuel modification activities can include removal, partial or total replacement of existing plants with adequately spaced drought-tolerant and fire-resistive species and thinning of existing native or ornamental species.

**FUEL MOISTURE CONTENT** - The amount of water in a fuel, expressed as a percentage of the oven dry weight of that fuel.

**FUEL VOLUME** - The amount of fuel in a plant in a given area of measurement. Generally, an open-spaced plant will be low in volume.

**FUEL TYPE** - An identifiable association of fuel elements of distinctive species, form, size, arrangement, or other characteristics that will cause a predictable rate of spread or resistance to control under specified weather conditions.

**GPM** – Gallons per minute.

**GROUND FUELS -** All combustible materials such as grass, duff, loose surface litter, tree or shrub roots, rotting wood, leaves, peat, or sawdust that typically support combustion.

**HAZARD REDUCTION** – Any treatment of living and dead fuels that reduces the potential spread or consequence of a fire.

**HERBACEOUS FUEL MOISTURE** - In NFDRS, a calculated value representing the approximate moisture content of the live herbaceous vegetation in the rating area expressed as a percentage of the oven dry weight of the sample

**HOA** or homeowners' association, a self-governing organization in "common-interest" communities where homeowners collectively pay fees to maintain the units or neighborhood. HOA's are typically run by resident homeowners, unpaid volunteers who are elected to a board of directors that oversees the HOA's management.

**HORIZONTAL CONTINUITY** - The extent or horizontal distribution of fuels at various levels or planes.

**LADDER FUELS** - Fuels which provide vertical continuity between strata. Fire is able to carry from surface fuels by convection into the crowns with relative ease.

**LITTER** -The uppermost layer of loose debris composed of freshly fallen or slightly decomposed organic material such as dead sticks, branches, twigs, leaves or needles.

**LIVE FUEL MOISTURE** – The moisture content in living plants. All living plants have different physiological properties that dictate how they take in and store moisture from the environment, particularly the soil. The moisture level is highest in the spring following winter precipitation during a period known as green-up. Plants during green-up may not burn to due their high moisture content. Over the course of a fire season, these typically fall to low levels in late summer and fall. The range of moisture content is from 30-300 percent of the plants oven dry weight.

**LONG TERM** - In perpetuity of the fuel modification plan requirement.

**MITIGATION** – Action that moderates the severity of a fire hazard or risk.

**NATIVE SPECIES** – A species which is a part of the original fauna or flora of the area in question.

**NATIONAL FIRE DANGER RATING SYSTEM (NFDRS)** – A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

**NFPA** – National Fire Protection Association. A USA based trade association with international members as well. The Association creates and maintains standards and codes that are used by business, local governments, and other organizations to help improve fire safety.

**NONCOMBUSTIBLE** – Material at which no part will ignite and burn when subjected to fire.

**OSFM** – Office of the state Fire Marshal, supported by CAL FIRE. Mission is to protect life and property through fire prevention engineering programs, law and code enforcement and education.

**POA** – Property Owners Association, comprises property owners that own property in an area, but those properties can be made up of several different types including but not limited to single-family homes, condos, duplexes, townhouses, and commercial properties. The POA is similar to a HOA. The POA's purpose are long-term development, overall community improvement, and protection of property values.

**PROBABILITY OF IGNITION** - A rating of the probability that a firebrand (glowing or flaming) will cause a fire, providing it lands on receptive fuels. It is calculated from air temperature, fuel shading, and fuel moisture.

**PRUNING –** the removal of growth from a plant in order to reduce the fuel load. The material removed may be dead or dying wood, or simply a portion or number of branches of an individual plant.

**PSI** – Abbreviation for pounds per square inch.

**RADIANT HEAT** - Transfer of heat by electromagnetic waves which can therefore, travel against the wind. For example, it can preheat the opposite side of a burning slope in a steep canyon or a neighboring home to the ignition point.

**RAWS** – Remote Automatic Weather Stations (RAWS) are strategically located throughout the United States. RAWS may can be permanently installed or portable solar powered weather stations that provide timely local weather data used primarily in fire management. Weather observations are transmitted at hourly periods via the GOES satellite to the Wildland Fire Management Information System.

**RATE OF SPREAD** - The relative activity of a fire in extending its horizontal dimensions. It is expressed as rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually, it is expressed in chains or acres per hour for a specific period in the fire's history.

**RELATIVE HUMIDITY** – The ratio of the amount of moisture in the air, to the maximum amount of moisture that air would contain if it were saturated.

**RISK** – The measure of the probability of a fire starting as determined by the presence and activity of causative agents. Natural causes include volcanic eruption and lightning. Risk also

results from an exposure to a wildland fire (direction flames, radiant heat, or firebrands (embers).

**SANTA ANA WIND** – Strong, extremely dry downslope winds that originate inland and affect coastal Southern California and northern Baja California. They originate from cool, dry high-pressure air masses in the Great Basin.

**SHALL -** Indicates a mandatory requirement.

**SLOPE** – Is the variation of terrain from the horizontal; the number of feet, rise or fall per 100 feet, measured horizontally, expressed as a percentage.

**SPECIAL MAINTENANCE AREA** - Interior/manufactured slope or non-irrigated portions of a community where hazards are not otherwise mitigated. The area is regulated as part of a fuel modification plan and subject to specific fuel modification requirements.

**SPOT FIRE** – Fire ignited outside the perimeter of the main fire by a firebrand or ember.

**SUBDIVISION** - A parcel of land that is subdivided to create multiple individual lots for residential purposes in accordance with the State of California Subdivision Map Act.

**SURFACE FIRE** - Fire that burns loose debris on the surface of the ground, which includes dead branches, leaves, and low vegetation.

**TARGET SPECIES** - Undesirable species that are generally removed as part of the fuel modification plan (see Attachment 7).

**THINNING** – cutting and removal of vegetation from the land without disturbance to or destruction of the root system and/or soil surface.

**TRAVEL TIME** – time enroute to or from an emergency incident.

**UL** – Underwriters Laboratories. UL is a not-for-profit product safety testing, consulting and certification organization with a global reach and acceptance.

**URBAN INTERFACE** - That line, area, or zone where structures and other human development meet or intermingle.

**VERTICAL CONTINUITY** - The proximity of fuels to each other that governs the fire's capability to sustain itself. Vertical continuity applies to the relationship of aerial fuels to surface fuels or fuels low to the ground.

**VERY HIGH FIRE HAZARD SEVERITY ZONE** (Local Agency) - A geographical area designated in accordance with the California Government Code Section 51179, by a local jurisdiction by ordinance, which contains the type and condition of vegetation, topography, climate and structure density which potentially increases the possibility of uncontrolled fire spread through vegetative fuels threatening life or property. For the purposes of this standard and for Developments municipal code, Local Agency Very High Fire Hazard Severity Zones shall be established based on a finding supported by substantial evidence in the record that the requirements of 51182 are necessary for effective fire protection within the area.

# APPENDIX ‘F’

## FIRE PROTECTION PLAN MAP EXHIBIT

The following two pages contain the Fire Protection Plan Map Exhibit for the Piraeus Point Project in the City of Encinitas. For fuel treatment zone maintenance, it is highly recommended that either the full-size map or pdf document be used.

## FIRE PROTECTION LEGEND

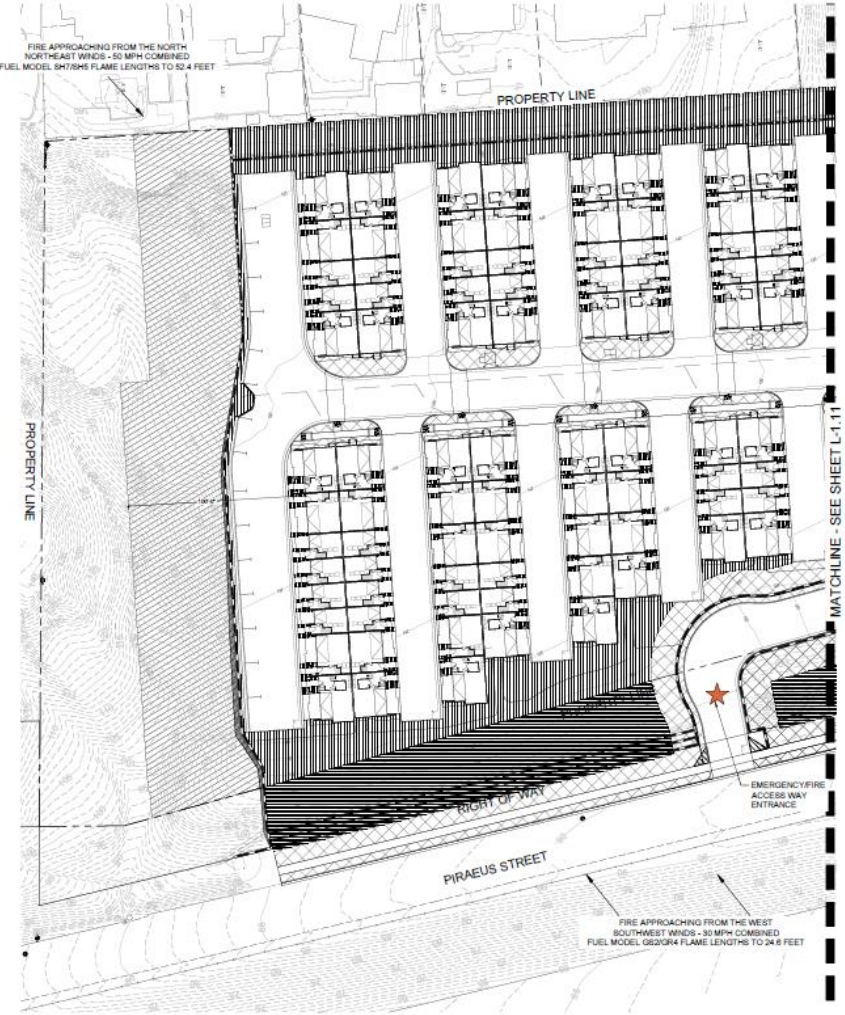
IRRIGATED ZONE 1A (HOA MAINTAINED)
AN IRRIGATED LANDSCAPE ZONE TYPICALLY 50 FEET IN WIDTH FROM EACH STRUCTURE. ONLY PLANTS FROM THE APPROVED CITY OF ENCINITAS PLANT LIST ARE TO BE INSTALLED AND MAINTAINED. ALL COMBUSTIBLE BUILDING MATERIALS INCLUDING COMBUSTIBLE DECKS, PATIO COVERS AND GAZEBOS ARE PROHIBITED IN THIS ZONE. SEE FIRE PROTECTION PLAN FOR DETAILS.

IRRIGATED ZONE 1B (HOA MAINTAINED)
AN IRRIGATED LANDSCAPED ZONE UP TO 50 FEET IN WIDTH THAT IS LOCATED ON THE LANDS THAT ARE PUBLICLY OWNED BUT MAINTAINED BY THE PIRAEUS DEVELOPMENT HOA. IT ALSO INCLUDES MANUFACTURED SLOPES LOCATED MORE THAN 50 FEET FROM A STRUCTURE. SEE ZONE 1A ABOVE FOR FURTHER DETAILS.

THINNING ZONE 2 (HOA MAINTAINED)
AN AREA THAT BEGINS ON THE NORTH SIDE OF THE RETAINING WALL NORTH OF THE NORTHERN BUILDINGS THAT EXTENDS NORTHWARD FOR A DISTANCE OF 100 FEET FROM THE FRONT OF EACH BUILDING FACE. THIS AREA MAY INCLUDE SINGLE OR SMALL CLUSTERS OF TRIMMED FIRE RESISTANCE NATIVE PLANTS UP TO 18 INCHES IN HEIGHT AND TRIMMED NATIVE TREES LIMBED UP TO 6 FEET FROM THE GROUND WHERE 50% OF THE VEGETATION IS REMOVED. SELECTED NATIVE PLANT CLUSTERS MUST BE SEPARATED BY AT LEAST 1 1/2 TIMES MATURE HEIGHT OF THE RETAINED PLANTS. THE GRASSES SHALL BE WEED WHIPPED AND MAINTAINED AT LEAST ANNUALLY TO 4" OR LESS IN STUBBLE HEIGHT ONCE THEY HAVE CURED. SEE FIRE PROTECTION PLAN FOR ADDITIONAL DETAILS.

ROADSIDE FUEL TREATMENT (HOA MAINTAINED)
A MINIMUM OF 20 FEET IN WIDTH ON THE DOWNHILL SIDE AND 20 FEET IN WIDTH ON THE UPHILL OF THE ROADWAY OR DRIVEWAY PRISM THAT IS CLEAR OF ALL COMBUSTIBLE VEGETATION AND LANDSCAPED TO ZONE 1A CRITERIA. THE LAND UPON WHICH THIS ZONE EXISTS MAY BE PRIVATELY OR PUBLICLY OWNED.

EMERGENCY/FIRE ACCESS WAY ENTRANCE





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PIRAEUS POINT
ENCINITAS, CA # 2021-0513

SEPTEMBER 16, 2022

SCHMIDT DESIGN GROUP

0 15 30 60
SCALE: 1" = 30'-0"

FIRE PROTECTION LEGEND & PLAN

L-1.9

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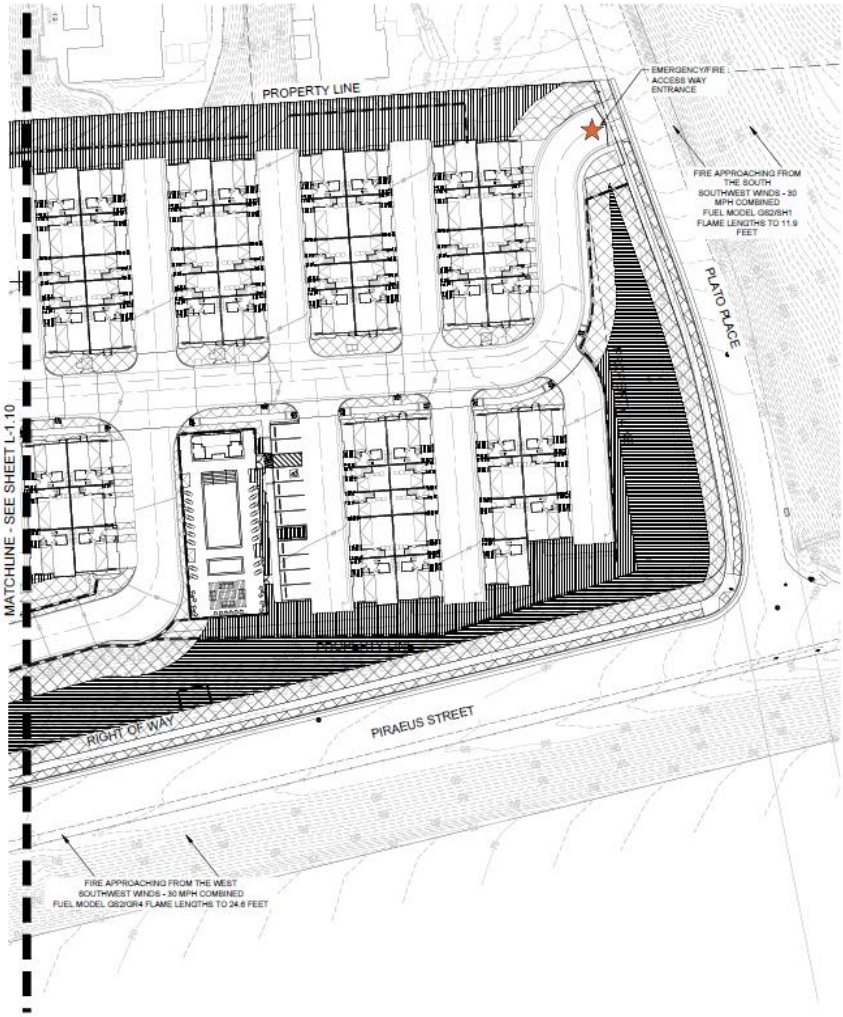
EMERGENCY/FIRE ACCESS WAY ENTRANCE




| Certified By |
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0 15 30 60
SCALE: 1" = 30'-0"

FIRE PROTECTION LEGEND AND PLAN

L-1,10