

4.14 Wildfire

This Section addresses potential Project impacts associated with interference to adopted emergency response or evacuation plans, exacerbation of wildfire risks and exposure of Project residents to unhealthy pollution from wildfire, installation or maintenance of infrastructure that would exacerbate wildfire risk and expose people or structures to risks from post-fire flooding or landslides. The analysis is based in part on the proposed Project's *Fire Safety Plan* prepared by FireSafe Planning Solutions on October 2021 (Appendix G-1), *Fuel Modification Plan* prepared by FireSafe Planning Solutions on December 2021 (Appendix G-2).

4.14.1 Setting

A wildfire is a nonstructural fire that occurs in vegetative fuels, excluding prescribed fire. A wildfire can spread to urban areas where the landscape and structures are not designed and maintained to be ignition resistant. Wildfires burn in many types of vegetation such as forests, woodlands, scrub, and grasslands. Many species of native California plants are adapted to fire (Calfire 1999). The City's undeveloped hillsides can provide fuel for a wildfire and can be prone to mudslides in heavy rains on slopes stripped of vegetation from a wildfire. Structural and automobile fires represent the most common types of fire in urbanized areas and can be caused by a variety of human, mechanical and natural factors. Urban fires have the potential to spread to other structures or areas, particularly if not extinguished promptly. Proactive efforts, such as fire sprinkler systems, fire alarms, fire resistant roofing and construction methods, can collectively lessen the likelihood and reduce the severity of urban fires.

Areas of dense, dry vegetation, particularly in canyon areas and on hillsides, pose the greatest potential for wildfire risks. An urban/wildland interface is an area where urban development is in proximity to open space or “wildland” areas. The potential for wildland fires represents a hazard where development is adjacent to open space or within close proximity to wildland fuels or designated fire severity zones. The major urban/wildland interface areas closest to the Project site are the hills and canyons nearest the site which include, the remediated hillside in proposed Lot A, the San Joaquin Hills, and Aliso Canyon to the west; and Niguel Hills to the southwest, which is why the Project site is within a Very High Fire Hazard Severity Zone (VHFHSZ). While located within a VHFHSZ, the Project site is surrounded by residential development to the north, south, and partially to the west, and Crown Valley Parkway to the east. The vegetation surrounding the Project site is non-native, primarily acacia, which is not the typical vegetation associated with wildland fires.

The level of hazard to life and property is affected not only by a wildfire in itself, but also by road access for evacuation, the number of available firefighters, vegetation clearance around properties, availability of water and water pressure, the effectiveness of building/fire codes, and inspection of developments in areas of higher fire hazard.

4.14.2 Existing Site Conditions

As shown in Figure 4.14.A, the proposed Project is within a VHFHSZ, as defined by the California Department of Forestry and Fire Protection (CALFIRE). Fire protection service in the City is provided by the Orange County Fire Authority (OCFA). The proposed Project is within OCFA Operations Division 5. Of the nine fire stations within Division 5, Fire Station No. 5 is located nearest to the Project site 0.46 miles away to the north on Pacific Island Drive.

The current California Fire Code (CFC) and California Building Code (CBC) require planning and building practices that reduce structural fire hazards throughout the City, including specific practices for projects located within a VHFHSZ. These proactive measures lay out a blueprint to reduce the risks from all types of fires that may impact the Project and the City.

Wildfire Regional Trends

In the past decades, wildfire season in the West lengthened from an average of five months to an average of seven months, and the number of large wildfires (>1,000 acres) has increased from 140 to 250 per year. And more recently, wildfires now burn year-round in California (SBFFP and CALFIRE 2019). This is occurring as average annual temperatures in the West have risen by nearly two degrees Fahrenheit since the 1970s, and the winter snowpack has declined.

The latest large wildfire near the Project site was the 2020 Silverado Fire approximately 15 miles north/northeast on the south slopes of the Santa Ana Mountains. The fire was wind-driven resulting in the fire being designated as a wildfire. The fire burned an estimated 12,466 acres before containment resulting in the evacuation of 90,000 residents, injury of 3 firefighters, and destroying 3 structures. Due to Santa Ana gusts of 80 mph, flammable brush, and low humidity, the fire burned rapidly similar to the 2007 Santiago Fire in the same area.

Historical wildland fire activity in the Project area has not been recorded because smaller fires under 100 acres were seldom mapped unless they caused significant damage or loss of life. According to historical data from CALFIRE and the United States Geological Survey (USGS), the majority of the Orange County large fires have occurred in the Santa Ana Mountains that trend northwest/southeast approximately 15 to 20 miles to the north/northeast of the Project site.

Topography

The Project site lies directly west of Crown Valley Parkway. Elevations along Crown Valley Parkway near the Project site are on the order of 360 feet above mean sea level (AMSL). A 2:1 (horizontal:vertical) fill slope on the order of 10 feet in height occurs along the east side of the property adjacent to Crown Valley Parkway. This slope ascends to a relatively flat-lying, nearly rectangular-shaped pad area comprising the developable area of the property (proposed Lot 1). This pad area has elevations of around 370 feet AMSL on the east and 380 feet on the west. An east-facing fill slope of varying steepness extends on the order of around 160 feet in height,

including undevelopable portion of the Project site (proposed Lot A) and the remainder of the slope further west to existing homes on Via Estoril.

Weather

Weather conditions influence the potential for fire ignition and rates of spread, intensity, and the direction(s) toward which a fire burn. Wind, temperature of the wind and humidity levels are the variables used to predict fire behavior. According to CALFIRE, the fire season is starting earlier and ending later each year. Climate Change has been considered an important influence on the California fire season in the form of warmer spring and summer temperatures, reduced snowpack, and earlier spring snowmelt creating longer and more intense dry seasons. This changed dynamic is believed to increase moisture stress on vegetation and make forests and wildlands more susceptible to severe wildfire (CALFIRE 2020).

Vegetation

Vegetation usually provides most of the fuel that feeds wildfire, along with other flammable materials on-site (such as human-built structures none of which are on-site). The volume, character, distribution, and arrangement of vegetation, the relative presence of volatile oils, and the moisture content of fuels all greatly influence fire behavior. The Project site is heavily vegetated with Acacia species and scattered laurel sumac (*Malosma laurina*). The Acacia species are non-native ornamental species often planted for erosion control and the laurel sumac is a California native species that is not considered sensitive or protected. Acacia species is considered a fire-resistant shrub; however, the laurel sumac is not considered a fire-resistant shrub. The Project site also contains nonflammable infrastructure in the form of streets and concrete terrace drains for proper water drainage.

Wind

Wind plays a role in the flammability of fuels by removing moisture through evaporation, preheating fuels in a fire's path, and increasing spotting distances (the distance at which a spot fire might be ignited by a flying ember). Winds blowing more than 20 feet above the ground can carry embers downwind, causing spot fires.

According to the Western Regional Climate Center (WRCC), the Remote Automated Weather Station (RAWS) historical data, the typical prevailing summertime wind pattern is out of the west/southwest and normally is of a much lower velocity (5-10 MPH with occasional gusts to 20 MPH) and is associated with relative humidity readings ranging between 50 percent and occasionally more than 70 percent due to the site's proximity to the ocean. All other (northwest, southeast, and south) wind directions may be occasionally strong and gusty; however, they are generally associated with cooler moist air and have higher relative humidity (greater than 40 percent). These winds are considered a serious wildland fire weather condition when wind speeds reach greater than 20 miles per hour (mph).

The most critical weather pattern to the Project area is a hot, dry, offshore north wind, typically called a Santa Ana. Such wind conditions are usually associated with strong (greater than 50 mph), hot, dry winds with very low (less than 15 percent) 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.

4.14.3 Related Policies and Regulations

Federal Regulations

There are no relevant federal regulations in regard to wildfires.

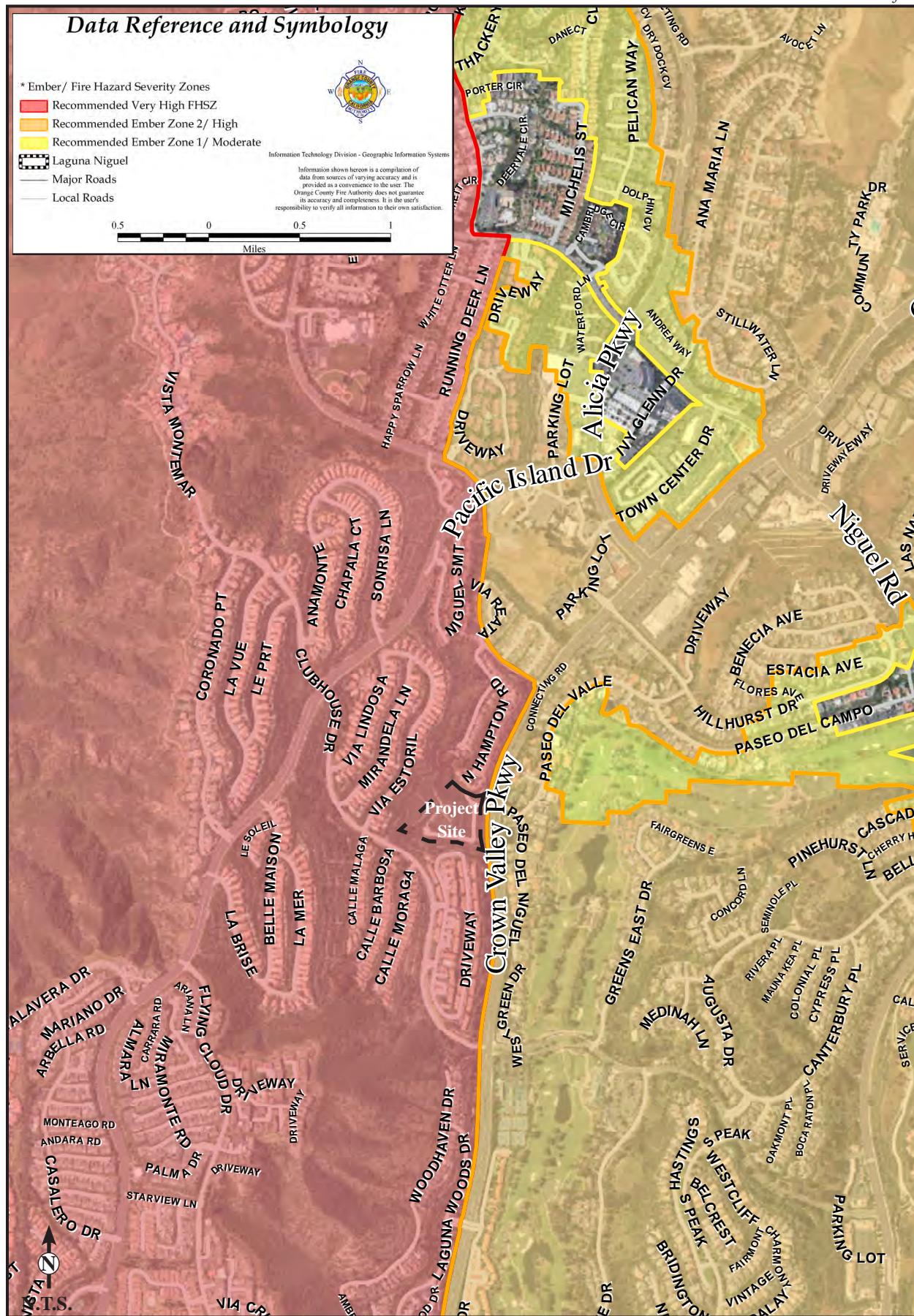
State Regulations

California Department of Forestry and Fire Protection

CALFIRE is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Office of the State Fire Marshal supports the CALFIRE mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. The State Fire Marshal provides for fire prevention by enforcing fire-related laws in state-owned or -operated buildings, investigating arson fires in California, licensing those who inspect and service fire protection systems, approving fireworks as safe and sane for use in California, regulating the use of chemical flame retardants, evaluating building materials against fire safety standards, regulating hazardous liquid pipelines, and tracking incident statistics for local and state government emergency response agencies. Classifications of a Fire Hazard Severity Zone (FHSZ) include moderate, high, or very high and are based on a combination of how a fire will behave and the probability of flames and embers threatening buildings. Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas. Final zone class (moderate, high, and very high) is based on the average scores for the zone (CALFIRE 2012).

The Board of Forestry and Fire Protection (Board) is a government-appointed body within the CALFIRE. It is responsible for developing the general forest policy of the state, determining the guidance policies of the CALFIRE, and representing the state's interest in federal forestland in California. Together, the Board and the CALFIRE work to carry out the California Legislature's mandate to protect and enhance the state's unique forest and wildland resources.

The Board is charged with protecting all wildland forest resources in California that are not under federal jurisdiction. These resources include major commercial and non-commercial stands of timber, areas reserved for parks and recreation, woodlands, brush-range watersheds, and all private and state lands that contribute to California's forest resource wealth.



Source: OCFA (12/2021).

Figure 4.12.A Laguna Niguel Very High Fire Hazard Severity Zone Map

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2019 Strategic Fire Plan for California

The Board of Forestry and Fire Protection (Board) has adopted the Strategic Fire Plan intended to reduce the risk of wildfire through planning and prevention with the ultimate goals of reducing firefighting costs and property losses, increasing firefighter safety, and contributing to ecosystem health. The Strategic Fire Plan is adopted to better respond to the changes of the environmental, social, and economic landscape of California’s wildlands and to provide the CALFIRE with appropriate guidance for adequate statewide fire protection of state responsibility areas. The latest Strategic Fire Plan is dated January 22, 2019.

CALFIRE Urban & Community Forestry Program

The CALFIRE Urban and Community Forestry (U&CF) Program is a large and complex program promoting innovative fire prevention and fire response activities.¹ The U&CF Program coordinates federal and State grants, provides technical assistance, education and outreach, and encourages use of best practices by local governments and fire industry practitioners. Emphasis is also provided to serve under-resourced, low-income communities with the objective of increasing the urban forest canopy and associated benefits for all Californians.

California Office of Emergency Services

The California Governor’s Office of Emergency Services (Cal OES) is responsible for the coordination of overall state agency response to major disasters in support of local government. The agency is responsible for ensuring the state’s readiness to respond to and recover from all hazards—natural, man-made, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts.

The Cal OES Fire and Rescue Division coordinates statewide response of fire and rescue mutual aid resources to all types of emergencies. The Operations Section in the Fire and Rescue Division coordinates the California Fire and Rescue Mutual Aid System, and coordinated response through the Mutual Aid System includes responses to major fires, earthquakes, tsunamis, hazardous materials, and other disasters.

California Building Code

The CBC, in Part 2 of Title 24 of the California Code of Regulations (CCR), identifies building design standards, including those for fire safety. The CBC is based on the International Building Code but has been amended for California conditions. The CBC is updated every three years, and the current 2019 CBC went into effect January 1, 2020. It is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. Commercial and residential buildings are plan-checked by local city and county building officials for compliance

¹ CALFire website, https://www.fire.ca.gov/media/10515/cufac_strategic_plan_summary_1620.pdf, accessed February 2022.

with the CBC. Typical fire safety requirements of the CBC include the installation of fire sprinklers in all new residential, high-rise, and hazardous materials buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

California Fire Code

The California Fire Code (CFC), contained in Part 9 of CCR Title 24, incorporates by adoption the International Fire Code of the International Code Council, with California amendments. The CFC is updated every three years, and the current 2019 CFC went into effect January 1, 2020. It is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. The CFC regulates building standards in the CBC, fire department access, fire protection systems and devices, fire and explosion hazards safety, hazardous materials storage and use, and standards for building inspection.

Very High Fire Hazard Severity Zone

Public Resource Code Sections 4201 to 4204 and Government Code Title 5, Part 1, Chapter 6.8, 51178 to 51179 and 51181 direct CALFIRE to identify areas of very high fire hazard within State or Federal Responsibility Areas as well as Local Responsibility Areas (LRA). Mapping of Very High Fire Hazard Severity Zones (VHFHSZ) is based on data and models of potential fuels over a 30- to 50-year time horizon and their associated expected fire behavior and expected burn probabilities in order to quantify the likelihood and nature of vegetation fire exposure (including firebrands) to buildings. LRA VHFHSZ maps were initially developed in the mid-1990s and are now being updated based on improved science, mapping techniques, and data.

VHFHSZs are delineated and used to identify property whose owners must comply with natural hazards disclosure requirements at time of property sale as well as a 100-foot defensible space clearance and/or other alternative means and methods to reduce fire hazards. The Project's Fire Master Plan includes the Project's request for Alternative Materials & Methods (AM&M) of Design and Construction. The AM&M application and its alternate methods are discussed further in Section 4.14.4, *Project Design Features and Standard Conditions of Approval*.

Local Regulations

The City recommends that new construction of structures in the VHFHSZ be done in accordance with Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) of the 2019 California Building Code.

On October 28, 2011, the City received from the Director of CALFIRE a recommendation for a VHFHSZ (2011) in the City.

Government Code Section 51179(a) requires the City to designate, by ordinance, the VHFHSZ in the City within 120 days of receiving the recommendation from the Director of CALFIRE. The VHFHSZ defines where ignition resistant building standards (Chapter 7A of the 2019 California Building Code) are to be implemented for new construction. Chapter 7A requirements do not apply to room additions or remodels. The City has adopted the VHFHSZ as recommended by CALFIRE and therefore implements Chapter 7A.

The intent of Chapter 7A is to provide additional building features increasing the ability of a structure to resist the intrusion of flames and wind-blown embers in the event of a wildland fire. Some of the more notable building standards contained in Chapter 7A is the use of:

- Boxed/Closed Roof Eaves
- Ember Protection on Class A Roof Tile Ends
- Tempered Windows
- Fire Rated Exterior Doors
- Smaller Roof and Attic Vents & Screens
- Ignition Resistant Construction Materials on Balconies, Decks, and other Accessory Structures

4.14.4 Thresholds of Significance

Criteria for determining the significance of impacts related to wildfire are based on criteria contained in Appendix G of the State CEQA Guidelines and the City's CEQA Manual. The proposed Project could have a significant impact on the environment if it would result in any of the following.

Threshold FIRE-1 *Substantially impair an adopted emergency response plan or emergency evacuation plan?*

Threshold FIRE-2 *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

Threshold FIRE-3 *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

Threshold FIRE-4 *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

4.14.5 Project Design Features and Standard Conditions of Approval

SCA FIRE-1 The Project is within a Local Responsibility Area VHFHSZ and will comply with the applicable regulations as determined by the City, OCFA, and/or CALFIRE in order to maintain the effectiveness of emergency response and firefighting operations. The Project's Fire Master Plan was prepared as a requirement of California Fire Code Section 104.9 and is based on OCFA requirements seen in the *Fire Safe Development Guideline B-09a*. The following is a list from the Fire Prevention Plan referenced in the Fire Master Plan in Appendix G-1 and the Conceptual Fuel Modification Plan in G-2, which includes the ignition resistant construction requirements for buildings located in a Wildland Urban Interface Area under the California Fire Code (CFC), Chapter 7A of the California Building Code (CBC), and the California Residential Code (CRC) R327 and R337. These requirements are referenced as Zones and Areas and will be Project conditions of approval. See Figure 4.14.B Conceptual Fuel Modification Plan below.

Private Homeowner Setback Area:

- A. Automatic irrigation systems shall be installed to regularly irrigate landscape to maintain healthy vegetation with high moisture content.
- B. Foliage shall be pruned regularly to reduce vegetation density, maintain vertical continuity, plant litter and dead wood must be removed regularly.
 - a. Ground cover shall not exceed 2 feet in height
 - b. Trees can be in groups of 3 specimens or less. No spacing required.
 - c. Groups of shrubs shall be spaced by the greater of the following two measurements: A distance of 15 feet minimum or 3 times the mature height of the tallest specimen in any group.
 - d. Groups of trees shall be spaced by a minimum of 30 feet apart regardless of height.
- C. Undesirable plant species are prohibited in the setback area
- D. Three species within the setback area are not allowed within 10 feet of combustible structures.
- E. Maintenance shall include thinning and removal of over-growth, replacement of dead/dying plant material.
- F. Devices that burn solid fuels are not permitted within the setback area.
- G. Combustible construction within the setback area is prohibited.
- H. The Homeowners' Association (HOA) shall enforce the design of the setback area requirements throughout the design review committee prior to installation of the homeowner. On-going enforcement of the setback area shall be enforced each calendar year.

Zone A (Non-Combustible Construction):

- A 20-foot setback zone shall be maintained for non-combustible construction only. Zone A shall be maintained by the HOA or private homeowner.

Zone B (Wet zone):

- An 80 to 85-foot area extending out from Zone A or the private homeowner setback area shall be provided. Zone B shall be permanently irrigated, fully landscaped with approved drought tolerant, deep rooted, moisture retentive material. Zone B area shall be maintained by the HOA.

Special Maintenance Area With Restricted Plant Palette (SMA) (Wet zone):

- The special maintenance areas shall have maintenance requirements to reduce the chances of ignition from wildfires. Maintenance within these areas is needed in the same manner as the fuel modification zones and shall be maintained on a year-round basis, with removal of all dead plant material, replacement of dead or diseased species with the same growth characteristics from the approved landscape plans. Irrigation shall be verified on a regular basis to ensure it is in a working condition and the plants shall be irrigated as necessary to keep them healthy with their appropriate moisture content.

Private Homeowner Landscape Area:

- Landscaped areas within the private homeowner unit shall be devoid of species from the “Undesirable and Invasive Plant Species” list seen in Attachment 7 of the *OCFA Vegetation Management Guideline: Technical Design for New Construction Fuel Modification Plans and Maintenance Program, Guideline C-05*. Planting restriction shall be recorded as part of the recorded Covenants, Conditions and Restrictions (CC&Rs).

Special Maintenance Area With No-Combustible Material:

- Where indicated, the special maintenance area between the radiant heat wall and the southern project boundary at units 9 through 11 shall be comprised of non-combustible material (Rock/Concrete Only). Any rock/gravel used shall be a minimum 8 inches in diameter.

PDF FIRE-1 Radiant Heat Wall – 6 feet minimum height on both sides of the wall. Noncombustible solid block and /or glass fencing.

PDF FIRE-2 Low Profile Venting – Structures adjoining the fuel modification shall have low profile roof venting on the side of the structure facing the fuel modification (Units 9-22).

PDF FIRE-3 Enhanced Automatic Fire Sprinkler System Features – All buildings (Units 1 through 22) shall have automatic fire sprinklers installed in attics and small spaces, as well as covered balcony/patio areas. Additionally, exterior bells shall be provided for the Fire Sprinkler Systems.

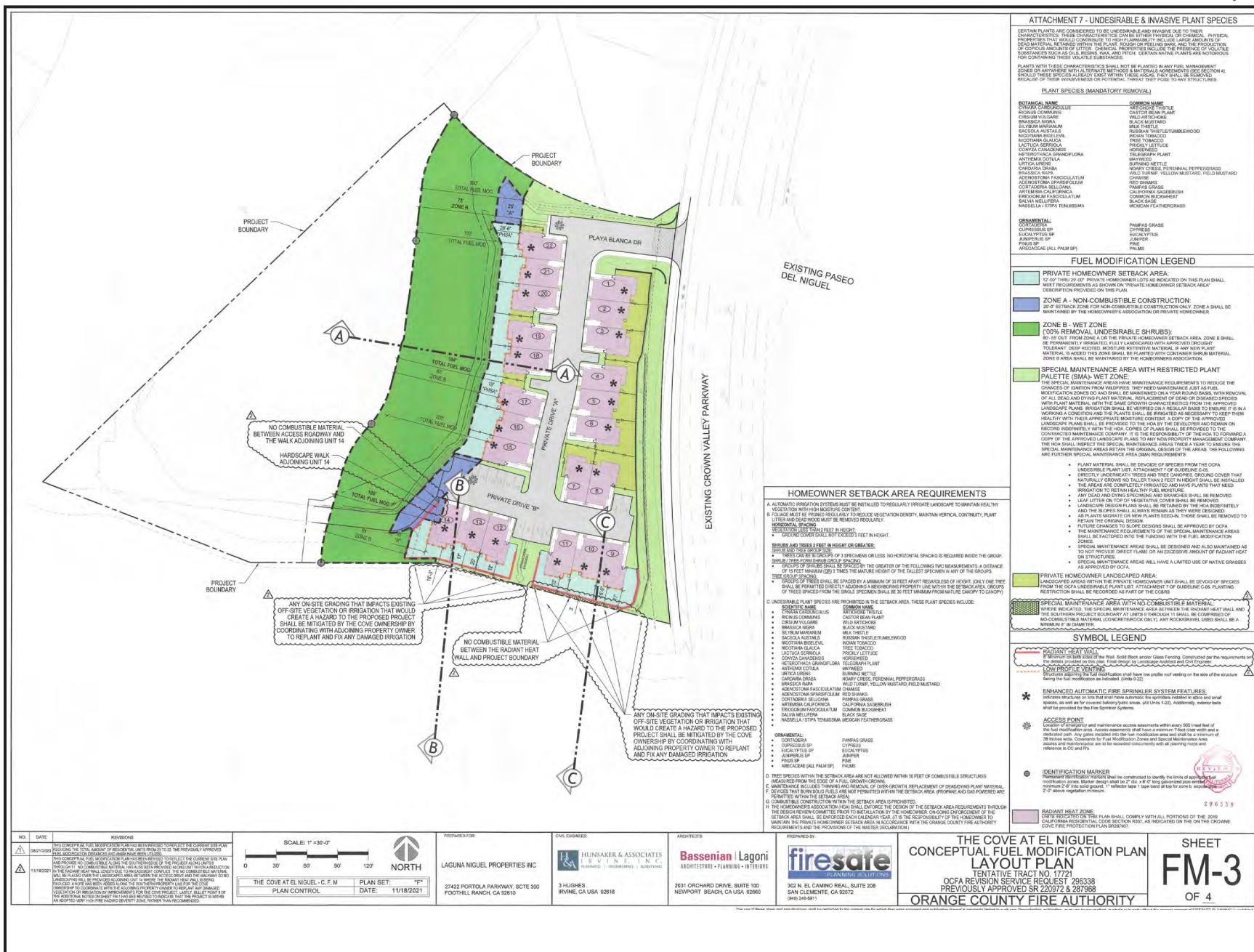
4.14.6 Environmental Impact Evaluation

The following impact analysis addresses thresholds of significance for disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Threshold FIRE-1 *Substantially impair an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant Impact. The Emergency Management Division of the Orange County Sheriff's Department (OCSD) is the lead agency for County emergency preparedness and disaster response. Evacuation instructions and routes are provided by the County's Emergency Operations Center and then are facilitated by the responding agencies such as OCFA and OCSD. Evacuation instructions are to be followed by those on the Project site during construction and operation and are represented on the City's Evacuation Zone Map which includes routes to be taken per zone. The Project site is within Zone 8 and depending on the location of an emergency, routes to the north or south would be used via Crown Valley Parkway. As discussed in Threshold TRA-4, Section 4.12, *Transportation*, emergency vehicles can easily access and travel within the site, along with guests and residents, and impacts related to emergency access on the Project site would be less than significant. In addition, mitigation measure **MM TRA-1, Construction Traffic Management Plan**, is required for safe ingress, egress, and circulation on-site during construction. Also discussed in Section 4.12, *Transportation*, operation of the Project proposes an additional 57 residents introducing approximately 161 daily trips and approximately 10 and 12 trips during the AM and PM peak hours, respectively. Furthermore, as discussed in Threshold HAZ-6, Section 4.8, *Hazards and Hazardous Materials*, construction and operation of the Project would not interfere with an adopted emergency response plan or emergency evacuation plan.

The proposed Project has been conditionally approved by the OCFA through the tentative tract map plan review process, including conditional approval of the Fire Master Plan. The Fire Master Plan implements fire prevention and fire response related measures tailored specifically for the Project as specified in **SCA FIRE-1** and **PDFs FIRE-1, -2, and -3** to reduce fire hazard occurrences and risks to existing residents in the surrounding area and future residents occupying the proposed townhomes. As a result, implementation of the Project would not impair an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant, and no mitigation is required.



Source: FireSafe Planning (11/18/2021).

Figure 4.14. A Conceptual Fuel Modification Map

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Threshold FIRE-2 *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

Less Than Significant Impact. Although wildfires are a rare event in the City, small fires have burned during moderate winds. Also, a fire will generally spread uphill due to the preheating of the fuel and the up-slope draft unless the general wind is strong enough to overcome these two forces. The flames are closer to the fuel on the uphill side and they receive more radiant heat. This results in more preheating and faster igniting of the fuel. The heated air rises along the slope increasing the draft that further increases the rate of spread. As a result of winds blowing up-slope, more convective heat also reaches the fuel in front of the fire and it is pre-heated more quickly to the ignition temperature. The opposite is true at night. When the slope becomes shaded, the surface generally loses heat rapidly and becomes cool. The air adjacent to the surface also cools and becomes denser thus heavier and it can begin to flow down-slope. Because the Project site is located on a hillside impacted by moderate winds, and more importantly being located within a VHFHSZ (Figure 4.14.A), the risk for the Project site to exacerbate wildfire spreading is a potentially significant impact.

Of the 4.2-acre Project site, 2.2 acres (Lot A) is a west to east slope of predominately vegetated open space that would remain generally undeveloped, and the remaining 2 acres (Lot 1) is relatively flat and would be developed with the proposed 22 condominiums introducing 57 residents to the area. The greatest threat of wildfire to the Project is Lot A, a vegetated slope that connects adjacent open space further west and upslope and the partially undeveloped hillsides with similar vegetation. Another threat is the downward hillside to the south which contains similar vegetation. Although the surrounding area is generally built out with residential development, these areas present potential fuel that could exacerbate wildfire spreading from the south on to the site and to the west upslope from the site, thus exposing structures and surrounding residential properties to wildfire and radiant heat. The Project’s Fire Master Plan and Conceptual Fuel Modification Plan shown previously in Figure 4.14.B, were reviewed and conditionally approved by OCFA. OCFA’s approval of the Fire Master Plan and Fuel Modification Plan require implementation of standard conditions of approval and project design features listed above in Section 4.14.5.

SCA FIRE-1 implements the Project’s Fuel Modification Plan that defines fuel modification zones that will surround the proposed residential structures for wildfire prevention. These zones incorporate permanent irrigation with approved plants for landscaping to the north, east, south, and west. Special maintenance areas reduce ignition from wildfires and are located to the north, east, south, and between each structure. Also, setback requirements with approved non-combustible construction are required for units 9 through 22 which border the hillsides from the south and west. These units are also required to install low profile venting in order to prevent

combustion of exterior and attic spaces from ember and flame intrusion per **PDF FIRE-2**. Structures with similar threats are Residential Lots 9 through 14, which include the construction of 6-foot-tall noncombustible solid block and glass radiant heat walls surrounding the limits of these lots to deflect heat and interrupt the natural pattern of wildfire from the adjacent upward southerly slope per **PDF FIRE-1**.

The Project will incorporate **PDF FIRE-3** which includes installation of automatic fire sprinklers in all structure attics and small spaces, due to the potential of ember showers impacting all structures. This is referred to as the Radiant Heat Zone. Installation of fire suppression equipment such as exterior alarm bells is also included in the fire prevention plans. Furthermore, compliance with the CFC with regard to emergency fire access and use of building materials that would limit the spread of wildfire to the greatest extent possible. The Project's compliance with emergency fire access includes adequate turning radii (20'), minimum streets widths (24') between buildings and the distance between those buildings (28'). Construction of the Project will comply with the CFC by using noncombustible, fire resistive, and ignition-resistant building materials. This would reduce the potential spread of a wildfire from the Project site to areas outside the Project site boundary and reduce the Project's potential to exacerbate wildfire risks.

Overall, the Project would be constructed in compliance with the CFC and CBC, along with being compliant with OCFA requirements as reflected in the Project's Fire Master Plan and Fuel Modification Plan. Additionally, with the implementation of standard condition of approval **SCA FIRE-1**, and project design features **PDF FIRE-1** through **PDF FIRE-3**, the Project would not expose Project occupants to pollutant concentrations from wildfire or the uncontrolled spread of a wildfire by exacerbating wildfire risks. Impacts would be less than significant, and no mitigation is required.

Threshold FIRE-3 *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

Less Than Significant Impact. The Project site is in the VHFHSZ and as part of the project design, includes improvements outlined in the Fire Master Plan and Fuel Modification Plan approved by the OCFA to reduce fire risk. As previously stated in Threshold FIRE-2, the Project site would incorporate fuel modification zones, which include the augmentation and long-term maintenance of surrounding vegetation to reduce risks from wildfires to life and property. The fuel modification zones implement the requirement for 1) fuel breaks such as private homeowner setbacks from structures to slow or control a fire; 2) permanent irrigation within the vegetated slope (80' to 85' zone setback from Lot 1 into Lot A) to maintain vegetation moisture levels to reduce fire ignition; 3) and landscaping guidelines and maintenance requirements for homeowners

and the HOA to guide maintenance of fuel modification areas to ensure they will function properly. As a result, implementation of the Proposed Project would not require installation of new or increased level of infrastructure maintenance that could exacerbate fire risk or result in temporary or ongoing impacts to the environment. Impacts would be less than significant, and no mitigation is required.

Threshold FIRE-4 *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

Less Than Significant Impact. Zone B, consisting of the sloped landscaped area within Lot A as defined in the Fuel Modification Plan, poses the greatest threat from such risk. This area would largely remain undeveloped with existing dense vegetation and ground cover adequate for soil stabilization and erosion control. As stated in Threshold FIRE-2, only approved landscaping and irrigation is to be implemented per the conditionally approved Fire Master Plan and Fuel Modification Plan as these fire-safe features are designed to improve community safety and reduce property loss.

As described in **SCA FIRE-1**, the 80 to 85 feet Zone B (from Lot 1 into Lot A) shall be permanently irrigated, fully landscaped with approved drought tolerant, deep rooted, moisture retentive vegetation to improve soil stabilization and prevent fire ignition. Approved landscaping species within Zone B are outlined within the Attachment 8 of the OCFA *Vegetation Management Guideline: Technical Design for New Construction Fuel Modification Plans and Maintenance Program, Guideline C-05*. Species found on this list are approved by the OCFA due to their low flammability because they produce low amounts of dead material retained within the plant, do not have rough or peeling bark, and have minimal production of leaf litter. In addition, their chemical properties do not contain volatile substances such as oils, resins, wax, and pitch. Furthermore, Zone B area shall be maintained regularly by the HOA following OCFA landscaping guidelines to prevent ignition and topsoil runoff.

As discussed in Section 4.9, *Hydrology and Water Quality*, existing and proposed stormwater drainage on the slope will adequately capture runoff in a v-ditch at the top of the MSE wall conveyed into 3 drainage points, minimizing flooding risk to the Project from downslope flooding post fire.

As discussed in Section 4.6, *Geology and Soils*, the remediation of the prior landslide has resulted in factors of safety that exceed minimum standards. In the event of a fire, the structural components of the remediation, specifically the installation of a caisson wall (64 caissons) with 414 tieback anchors and walers, partial removal of the landslide mass, re-compacting and re-contouring the slope, installation of subdrains, and construction of a compacted fill buttress, would remain in

place and not be affected by a wildfire. While the slope could experience surficial erosion following a fire, the information provided in the Geology Reports indicates that overside slope stability would remain above standard and landslide risk is less than significant.

As a result, implementation of the proposed Project would not expose people or structures to post-fire downslope or downstream flooding or landslides risks from runoff, slope instability, or drainage changes. Impacts would be less than significant, and no mitigation is required.

4.14.7 Cumulative Impacts

Less than Significant Impact. The Project will have a less than significant impact directly or indirectly to an emergency response or evacuation plan and mitigation is not required. The nearest Fire Station is less than a mile from the Project site and would adequately provide emergency services during construction and once in operation. As discussed in Threshold A (i), Section 3.2.4, *Public Services*, the Project’s incremental impacts on fire protection services would be less than significant due to the proposed Project’s approximate population increase of less than one-tenth of one percent of the City’s current population. The Project includes design features, such as a Fuel Modification Plan and Fire Prevention Plan conditionally approved by OCFA. Those design features minimize the Project’s potential to exacerbate fire danger within the surrounding area, as well as flooding or landslides. Although the surrounding area is generally built out and was developed under different provisions of the CFC, CBC OCFA, all future cumulative projects within the VHFHSZ would be required to adhere to similar provisions of the CFC, CBC and OCFA to reduce impacts from wildfire. By virtue of the Project’s design features and compliance by cumulative projects with the CFC, CBC, and OCFA requirements, the Project would have a less than significant cumulative wildfire impact.

4.14.8 Summary of Mitigation Measures

No mitigation measures for Thresholds FIRE-1 through FIRE-4 are required. Mitigation measures for other topical sections are referenced in this Section, however no impacts related to wildfires have been found to be significant and no mitigation measures are required.

4.14.9 Significant Environmental Impacts

The analysis above indicates that the Project will not exceed significance criteria for wildfire impacts. Therefore, all wildfire impacts are **less than significant**, and no mitigation measures are required.

4.14.10 References

14 CCR 15000–15387 and Appendix A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

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