

## 5. Environmental Analysis

### 5.18 WILDFIRE

#### 5.18.1 Environmental Setting

##### 5.18.1.1 REGULATORY BACKGROUND

###### National Fire Protection Association Standards

National Fire Protection Association (NFPA) codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. NFPA standards are recommended guidelines in fire protection but are not laws or "codes" unless adopted or referenced as such by the California Fire Code (CFC) or local fire agency. Specific standards applicable to wildland fire hazards include:

- NFPA 1141, Fire Protection Infrastructure for Land Development in Wildlands
- NFPA 1142, Water Supplies for Suburban and Rural Fire Fighting
- NFPA 1143, Wildland Fire Management
- NFPA 1144, Reducing Structure Ignition Hazards from Wildland Fire
- NFPA 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations

###### State Agencies and Regulations

###### *California Department of Forestry and Fire Protection*

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Board of Forestry and Fire Protection is a government-appointed body within CAL FIRE. It is responsible for developing the general forest policy of the state, for determining CAL FIRE's guidance policies, and for representing the State's interest in federal forestland in California. Together, the board and CAL FIRE carry out the California Legislature's mandate to protect and enhance the forest resources of all the wildland areas of California that are not under federal jurisdiction. The board also reviews general plan safety elements for compliance with statutes.

###### *Office of State Fire Marshal*

The California Office of the State Fire Marshal supports the mission of CAL FIRE by focusing on fire prevention. Its fire safety responsibilities include: regulating buildings where people live, congregate, or are confined; controlling substances and products that, in and of themselves or by their misuse, may cause injuries, death, and destruction by fire; providing statewide direction for fire prevention in wildland areas; regulating hazardous liquid pipelines; developing and reviewing regulations and building standards; and providing training and education in fire protection methods and responsibilities. These achievements are accomplished through

## 5. Environmental Analysis

### WILDFIRE

major programs, including engineering, education, enforcement, and support from the State Board of Fire Services.

#### *Government Code*

The State of California maintains responsibility for the prevention and suppression of wildfires on land outside incorporated boundaries of a city. In 1991, the state legislature adopted the Bates Bill (Government Code Sections 51175 to 51189) after the fires in the Oakland Hills. The bill requires CAL FIRE to identify and classify areas in local responsibility areas (LRA) that have a “very high fire severity” hazard for wildfires. LRAs are where local governments have the primary responsibility for preventing and suppressing fires. A local agency is required to adopt CAL FIRE’s findings within 120 days of receiving recommendations from CAL FIRE, pursuant to Government Code Section 51178(b), or propose modifications in accordance with state law.

#### *California Fire Code*

The California Fire Code (CFC) contains regulations, in the California Code of Regulations, Title 24, Chapter 9, consistent with nationally recognized and accepted practices for safeguarding life and property from the hazards of fire and explosion and hazardous conditions. The CFC contains fire-safety-related building standards, such as construction standards, vehicular and emergency access, fire hydrants and fire flow, sprinkler requirements, etc. Specific chapters relevant to wildfire are Chapter 49, Requirements for Wildland-Urban Interface, and Chapter 7A of the California Building Code (CBC), Materials and Construction Methods for Exterior Wildfire Exposure. These requirements include ignition-resistant materials, adequate venting, appropriate exterior windows and doors, and adequate roofing in accordance with the CFC and CBC.

#### *Fire Safety Regulations*

The Board of Forestry and Fire Protection is authorized in the Public Resources Code (Sections 4290 and 4291) to adopt minimum fire safety standards for new construction in very high fire hazard severity zones (VHFHSZs) in State Responsibility Areas (SRA). The board published its fire safety regulations in the California Code of Regulations, Title 14. (These standards may differ from those in Appendix D of the CFC.) Fire-safe regulations currently address:

- Article 1: Administration of ordinance and defensible space measures
- Article 2: Emergency access and egress standards (roadways)
- Article 3: Standards for signs identifying streets, roads, and buildings
- Article 4: Emergency water standards for fire use
- Article 5: Fuel modification standards

Ordinances adopted by local governments cannot be less restrictive than the provisions in state law. These regulations would be applied in SRAs outside of the City’s boundaries, such as the SOI and surrounding unincorporated lands.

## 5. Environmental Analysis

### WILDFIRE

#### *California Building Code*

The California Building Code (CBC) requires the installation and maintenance of smoke alarms in residential units. Section 907, Fire Alarm and Detection Systems, of the 2019 CBC covers the application, installation, performance, and maintenance of fire alarm systems and their components.

- **California Code of Regulations, Title 24, Part 2, Section 907.2.10.2.** Smoke alarms shall be installed and maintained on the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms, in each room used for sleeping purposes, and in each story within a dwelling unit.

#### *California General Plan Law, OPR General Plan Guidelines*

In 2014, Senate Bill 1241 (SB 1241) amended Government Code Section 65302 to require that safety elements be revised periodically to address wildfire risks in accordance with regulations and guidance from the Board of Forestry and Fire Protection. In addition, cities must submit a revised safety element to the board for consideration and comments no later than 90 days prior to its adoption. Local governments must also respond to how they plan to address the board's comments or make findings to the contrary prior to adoption of the safety element.

To meet the intent of state law, SB 1241 requires the safety element to:

- Identify wildfire hazards with the latest state-prepared, VHFHSZ maps from the Board of Forestry and Fire Protection, US Geological Survey, and other sources.
- Consider guidance given by the Office of Planning and Research's (OPR) Fire Hazard Planning document.
- Demonstrate that the city or contract agency and associated codes satisfactorily address adequate water supply, egress requirements, vegetation management, street signage, land use policies, and other criteria to protect from wildfires.
- Establish in the safety element (and other elements that must be consistent with it) a set of comprehensive goals, policies, and feasible implementation measures for protection of the community from unreasonable risks of wildfire.

#### **Regional Laws**

##### *County of Orange and Orange County Fire Authority Local Hazard Mitigation Plan*

The local hazard mitigation plan is a multi-jurisdiction plan developed jointly between the County of Orange and the Orange County Fire Authority (OCFA) that focuses on mitigating all natural hazards impacting unincorporated areas of the county, OCFA's service area, and County- and OCFA-owned facilities. The mission of the LHMP is to promote sound public policy designed to protect residents, critical facilities, infrastructure, key resources, private property, and the environment from natural hazards (OC and OCFA 2015).

## 5. Environmental Analysis

### WILDFIRE

#### *Orange County Fire Authority Fire Prevention Guidelines*

The OCFA's "Fire Master Plan for Commercial and Residential Development" (Guideline B-09) is a general guideline pertaining to the creation and maintenance of fire department access roadways, access walkways to and around buildings, and hydrant quantity and placement as required by the CFC and CBC and as amended by local ordinance.

The OCFA's "Vegetation Management Guideline Technical Design for New Construction Fuel Modification Plans and Maintenance Program" (Guideline C-05) pertains to fuel modification plans. Fuel modification plans require that landscaped areas adjacent to new buildings be dedicated for permanent vegetation management activities. This guideline covers the timing of plans for construction, plan criteria needed for approval, the resource agency plant list for the zones, new construction inspection requirements, and introductory maintenance information

### Local Laws

#### *Laguna Niguel Municipal Code*

Title 8, Division 1, Article 2 adopts and amends the CBC, which includes provisions for fire protection, including sprinkler systems.

Title 11, Division 3, Fire Protection and Explosives, adopts the CFC for the purpose of prescribing regulations governing conditions hazardous to life and property from fire and explosion hazards, except the portions that are added, deleted, modified, or amended in the municipal code.

The purpose of Title 11, Division 15, Emergency Preparedness, is to provide for the preparation and carrying out of plans for the protection of persons and property in the city in the event of an emergency; the direction of the emergency organization; and the coordination of the emergency functions of the city with all other public agencies, corporations, organizations, and affected private persons.

#### *Laguna Niguel General Plan*

The Seismic/Public Safety Element includes goals and policies to ensure public safety, including from wildfires. Applicable goals and policies include:

- **Goal 3:** A safe and secure community free from the threat of personal injury and loss of property.
  - **Policy 3.1.** Provide fire protection to ensure the public's health and safety.
  - **Policy 3.2.** Reduce the risk of wildland fire through fuel modification programs.

### 5.18.1.2 EXISTING CONDITIONS

#### Wildfire Background

There are three basic types of wildland fires:

## 5. Environmental Analysis

### WILDFIRE

- **Crown fires** burn trees to their tops; these are the most intense and dangerous wildland fires.
- **Surface fires** burn surface litter and duff. These are the easiest fires to extinguish and cause the least damage to the forest. Brush and small trees enable surface fires to reach treetops and are thus referred to as ladder fuels.
- **Ground fires** occur underground in deep accumulations of dead vegetation. These fires move very slowly but can be difficult to extinguish.

Wildfires burn in many types of vegetation—forest, woodland, grassland, and scrub (including chaparral, sage scrub, and desert scrub).

#### *Wildfire Causes*

Although the term wildfire suggests natural origins, a 2017 study that evaluated 1.5 million wildfires in the United States between 1992 and 2012 found that humans were responsible for igniting 84 percent of wildfires, accounting for 44 percent of acreage burned (Balch et al. 2017). The three most common types of human-caused wildfires are debris burning (logging slash, farm fields, trash, etc.); arson; and equipment use. Power lines can also ignite wildfires through downed lines, vegetation contact, conductors that collide, and equipment failures (TWMP 2018).

Wildfire season in the West recently has lengthened from an average of between five and seven months to year-round, and the number of large wildfires (i.e., greater than 1,000 acres) has increased from 140 to 250 per year. At the same time, the average annual temperature in the West has risen by nearly two degrees Fahrenheit since the 1970s and the winter snowpack has declined (CAL FIRE 2018). Frequent wildfires reduce recovery of shrubs and trees—especially shrubs and trees that must produce seeds to regenerate after fire—and increase invasion of nonnative grasses; that is, they tend to convert native shrublands to nonnative grassland (USGS 2018a). Nonnative grasses are generally more flammable than the chaparral and sage scrub vegetation that is replaced, so conversion exacerbates wildfire hazards.

#### *Secondary Effects*

Secondary effects of wildfire include debris flows post-fire and air pollution due to the smoke. The following sections describe the hazardous conditions created by these secondary wildfire effects.

#### *Debris Flows*

Post-fire landslide hazards include 1) fast-moving, highly destructive debris flows that can happen when wildfires are followed by high intensity rainfall events and 2) flows that are generated more slowly by root decay and loss of soil strength. Fires increase the potential for debris flows by increasing the imperviousness of soil so that it repels water and by destroying vegetation that would slow and absorb rainfall and whose roots would help stabilize soil (ANR 2009). The burning of vegetation and soil on slopes more than doubles the rate that water will run off into watercourses (USGS 2018b). Post-fire debris flows are particularly hazardous because they often give little warning, destroy objects in their paths, strip vegetation, block drainage ways, damage structures, and endanger human life. Debris flows differ from mudflows in that debris flows are composed of

## 5. Environmental Analysis

### WILDFIRE

larger particles. Post-fire debris flows are most common in the two years after a fire and are usually triggered by heavy rainfall. It takes much less rainfall to trigger debris flows from burned areas than from unburned areas.

#### *Air Pollution*

Smoke is a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles (PM<sub>2.5</sub>), which are microscopic particles that can penetrate the lungs and cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particulate pollution is even linked to premature death. Some populations are more sensitive than others to smoke. For instance, people with heart or lung disease, the elderly, children, people with diabetes, and pregnant women (Airnow 2018).

#### **Wildfire History**

Since 1969, Orange County has received 35 federal disaster proclamations related to fire hazards (see Table 5.18-1).

**Table 5.18-1      Federal Disaster Declarations for Orange County**

Disaster Number	(Fiscal) Year	Incident Type	Incident Title
FM-5383	2021	Fire	BOND FIRE
FM-5381	2021	Fire	BLUE RIDGE FIRE
FM-5380	2021	Fire	SILVERADO FIRE
FM-5268	2018	Fire	WILDFIRES (HOLY FIRE)
DR-4344	2018	Fire	CANYON 2 FIRE
FM-5213	2017	Fire	CANYON FIRE
DR-4305	2017	Flood	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES
DR-1952	2011	Flood	SEVERE WINTER STORMS, FLOODING, AND DEBRIS AND MUD FLOWS
FM-2792	2008	Fire	FREEWAY FIRE COMPLEX
DR-1810	2008	Fire	WILDFIRES
FM-2737	2007	Fire	SANTIAGO FIRE
FM-2683	2007	Fire	241 FIRE
EM-3279	2007	Fire	WILDFIRES
DR-1731	2007	Fire	WILDFIRES, FLOODING, MUD FLOWS, AND DEBRIS FLOWS
FM-2630	2006	Fire	SIERRA FIRE
DR-1585	2005	Severe Storm	SEVERE STORMS, FLOODING, LANDSLIDES, AND MUD AND DEBRIS FLOWS
EM-3248	2005	Hurricane	HURRICANE KATRINA EVACUATION
DR-1577	2005	Severe Storm	SEVERE STORMS, FLOODING, DEBRIS FLOWS, AND MUDSLIDES
FM-2405	2002	Fire	ANTONIO FIRE
DR-1203	1998	Severe Storm	SEVERE WINTER STORMS AND FLOODING
EM-3120	1996	Fire	SEVERE FIRESTORMS
DR-1046	1995	Severe Storm	SEVERE WINTER STORMS, FLOODING LANDSLIDES, MUD FLOW

## 5. Environmental Analysis

### WILDFIRE

**Table 5.18-1 Federal Disaster Declarations for Orange County**

Disaster Number	(Fiscal) Year	Incident Type	Incident Title
DR-1044	1995	Severe Storm	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, MUD FLOWS
DR-1008	1994	Earthquake	NORTHRIDGE EARTHQUAKE
DR-1005	1993	Fire	FIRES, MUD/LANDSLIDES, FLOODING, SOIL EROSION
DR-979	1993	Flood	SEVERE WINTER STORM, MUD & LAND SLIDES, & FLOODING
DR-935	1992	Flood	RAIN/SNOW/WIND STORMS, FLOODING, MUDSLIDES
DR-812	1988	Flood	SEVERE STORMS, HIGH TIDES & FLOODING DR-799 1987 Earthquake EARTHQUAKE & AFTERSHOCKS
DR-677	1983	Coastal Storm	COASTAL STORMS, FLOODS, SLIDES & TORNADOES
DR-657	1982	Fire	URBAN FIRE
DR-635	1980	Fire	BRUSH & TIMBER FIRES
DR-615	1980	Flood	SEVERE STORMS, MUDSLIDES & FLOODING
DR-547	1978	Flood	COASTAL STORMS, MUDSLIDES & FLOODING
DR-566	1978	Flood	Flood LANDSLIDES
DR-253	1969	Flood	SEVERE STORMS & FLOODING

Source: OCFA 2021

### Wildfire Hazard in Laguna Niguel

The topography, vegetation, and development patterns in Laguna Niguel make the City susceptible to fire hazards. The City is marked by rolling hills and valleys, and development occurs on the ridgelines and in the valleys. Vegetation, including native plant communities (chaparral and ruderal vegetation), is also highly combustible. The fire hazard is at its peak during the summer months when plant material that has grown up during the spring dies and becomes fuel (Laguna Niguel 1992).

Pursuant to Public Resources Code Sections 4201 to 4204 and Government Code Sections 51175 to 51189, CAL FIRE is mandated to identify fire hazard severity zones for all communities in California based on fuels, terrain, weather, and other relevant factors. CAL FIRE has mapped three hazard ranges—moderate, high, and very high—for most regions. Local governments must consider CAL FIRE’s determination when they adopt their own determinations and plan for fire services. The VHFHSZ encompasses parts of the western side of the City and covers residential and open space areas. The project site is outside but borders the eastern side of the VHFHSZ in an LRA (see Figure 5.8-1, *Very High Fire Hazard Severity Zone in Laguna Niguel*).

### Fire Protection

The City partners with OCFA for fire and emergency medical services. OCFA protects more than 1.5 million residents via 71 fire stations throughout Orange County. OCFA provides comprehensive emergency services to the residents of Laguna Niguel through a regional approach. Laguna Niguel is part of Division 3 and Division 5 of the OCFA, which encompass the southern and eastern areas of Orange County. OCFA has three stations in Laguna Niguel (Station Nos. 5, 39, and 49), and each station’s community service area encompasses

## 5. Environmental Analysis

### WILDFIRE

its immediate geographical area. In total, OCFA's Laguna Niguel stations are staffed with 36 full-time employees, including 9 fire captains, 9 engineers, 12 firefighters, and 6 firefighter paramedics. OCFA is also currently exploring locations for an additional fire station in Laguna Woods, which could allow for more resource availability in Laguna Niguel once in operation.

#### 5.18.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines and the City's CEQA Manual, a project would normally have a significant effect on the environment if located in or near state responsibility areas or lands classified as very high fire hazard severity zones the project would:

- W-1 Substantially impair an adopted emergency response plan or emergency evacuation plan.
- W-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.
- W-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.
- W-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.

#### 5.18.3 Plans, Programs, and Policies

- PPP W-1 The proposed project is required to comply with the California Building Code and California Fire code as amended by the Laguna Niguel Municipal Code.
- PPP W-2 Projects located in portions of the City that are designated as VHFHSZs are required to provide fuel modification depending on the project site's proximity to open space.
- PPP W-3 Fuel modification must be provided within a project site's boundaries or within an offsite easement granted for fuel modification. If an offsite easement is being used for fuel modification that easement must be secured prior to completion of the environmental document. Securing the offsite fuel modification cannot be deferred until after approval of the project.
- PPP W-4 The Applicants are required to prepare preliminary fuel modification plans. The preliminary fuel modification plan shall be reviewed and approved by Staff and the OCFA prior to completion of the environmental document.

## 5. Environmental Analysis

### WILDFIRE

#### 5.18.4 Environmental Impacts

##### 5.18.4.1 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance. The applicable thresholds are identified in brackets after the impact statement.

---

**Impact 5.18-1: The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. [Threshold W-1]**

---

The project site is adjacent to but outside of an LRA for VHFHSZ (CAL FIRE 2011, 2019).

OCFA provides fire and emergency medical response to Laguna Niguel, and OCFA and the Orange County Sheriff's Department (OCSD) implement the County's emergency operations plan. The County's plan addresses how the County should respond to extraordinary events or disasters (including urban and wildland fires) from preparedness phase through recovery. OCFA Fire Station No. 5 is within the project site at 23600 Pacific Island Drive.

Construction activities would be conducted in accordance with the California Manual of Uniform Traffic Control Devices (MUTCD) to ensure traffic safety on public streets, highways, pedestrian walkways, and bikeways. Construction contractors would be required to comply with all City of Laguna Niguel standard conditions pertaining to construction including work hours, traffic control plan, haul route, and access. Construction of the proposed project would comply with City standards and regulations relating to emergency access, such as obtaining an encroachment permit for construction work in public rights-of-way. Where possible, construction related trips would be restricted to off-peak hours. Construction activities associated with the proposed project, including staging and stockpiling, would occur within the project boundaries and not on any major arterials or highways that could be used during potential emergency situations.

Additionally, storage of construction materials and construction equipment—such as construction office trailers, cranes, storage containers, and trailers detached from vehicles—is prohibited on City property, including City streets, without a permit. Project construction and operation would comply with City requirements regarding storage on City property, including City streets. Construction material and equipment would be staged or stored on-site and would not interfere with emergency access to or evacuation from surrounding properties.

The proposed project would provide site-specific on- and off-site access and circulation for emergency vehicles and services during the project's operational phase. Additionally, design of the proposed project would comply with the CBC and CFC as adopted by the City. During project operation, Pacific Island Drive, Crown Valley Parkway, and Alicia Parkway would still be available as major evacuation routes. No policy or procedural changes to an existing risk management plan, emergency response plan, or evacuation plan would be required due to project implementation. The proposed project would not hinder the implementation of the County's emergency operations plan. Therefore, the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

***Level of Significance Before Mitigation:*** Less than significant.

## 5. Environmental Analysis

### WILDFIRE

---

**Impact 5.18-2: The proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors exacerbating wildfire risks. [Threshold W-2]**

---

The project site is located adjacent to but outside of an LRA VHFHSZ, (CAL FIRE 2011, 2019). OCFA Fire Station No. 5 is located within the project site at 23600 Pacific Island Drive. Currently, the project site contains approximately 65.1 percent pervious surfaces that are largely undeveloped. This undeveloped portion of the project site is covered by grasses and other vegetation. Construction of the proposed project would remove the undeveloped land from the project site and increase impervious surfaces, most of which are nonflammable. The proposed project's landscaping would comply with landscaping standards for vegetation type and would be irrigated and actively maintained to avoid excessive dry or dead vegetation, and therefore would not exacerbate wildfire risk. The project would also place electrical lines underground, which avoids the risk of fire caused by downed electrical lines.

The site is at the bottom of a steep hillside that borders the project's western boundary. As shown in Figure 4-1, *Site Topography*, the terrain is varied throughout the project site. There is a net elevation difference of 50 feet from the low point of approximately 320 feet above mean sea level (amsl) in the southern corner (site entrance at Crown Valley Parkway) to 370 feet amsl at the top of a small knoll in the northern corner of the site (near Pacific Island Drive/Alicia Parkway intersection). Wildfire hazards in southern California are at their greatest when Santa Ana winds—hot, dry, northeasterly winds—are blowing, usually in autumn. The risk of wildfire during Santa Ana risks is offset by the irrigation and maintenance of the landscaping, compliance with the CBC and CFC as adopted by the City, and by the lack of adjacent wildlands northeast of the project site that would be the most susceptible to Santa Ana winds. Thus, the proposed project would not exacerbate wildfire risks in the area and thus would not expose project occupants to pollutant concentrations from wildfire or the uncontrolled spread of wildfire.

***Level of Significance Before Mitigation:*** Less than significant.

---

**Impact 5.18-3: Implementation of the proposed project would not 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 W-3]**

---

The project site is adjacent to but outside of a VHFHSZ in an LRA; however, the project site is in an urbanized area surrounded by commercial and residential uses. It is partially developed and served by existing roadways, water, and other utilities. The proposed project would not require the construction of off-site infrastructure that may exacerbate fire risk or may result in impacts to the environment. All on-site utilities would be underground and in roadways, and off-site utilities connections would be underground. The project site is not directly adjacent to wildlands that would require fuel breaks. Therefore, implementation of the proposed project would not require installation or maintenance of infrastructure that may exacerbate fire risk or that may result in impacts to the environment.

***Level of Significance Before Mitigation:*** Less than significant.

## 5. Environmental Analysis

### WILDFIRE

---

**Impact 5.18-4: The proposed project would not 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. [Threshold W-4]**

---

The proposed project would not expose people or structures to significant risks due to postfire slope instability or drainage changes. The project site is in a landslide hazard zone, but most of the slopes are off-site, and the proposed project would include the construction of retaining walls and comply with the requirements of California Building Code, which lower existing landslide risk. As discussed in Section 5.6, *Geology and Soils*, the proposed project's impact related to landslides would be less than significant. The project site is not in or immediately adjacent to flood risk areas (FEMA 2019; Laguna Niguel 1992). As discussed in Section 5.9, *Hydrology and Water Quality*, the proposed project would not result in any flooding impacts after compliance with regulatory compliance measures.

*Level of Significance Before Mitigation:* Less than significant.

### 5.18.5 Cumulative Impacts

The area considered for cumulative impacts are lands in Orange County that are categorized SRA, federal responsibility area, or VHFHSZ in LRA. OCFA provides fire suppression in VHFHSZs in LRAs. Cumulative projects in the region could exacerbate wildfire hazards due to factors such as slope and prevailing winds and could expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Cumulative projects could extend infrastructure such as roads and overhead power lines through VHFHSZs and thus could exacerbate wildfire risk. Cumulative projects could also cause flooding or debris flows due to postfire slope instability. However, all development would be mandated to comply with requirements of the CBC and CFC, as adopted by each project's respective lead agencies. Compliance with the CBC and CFC would ensure that building materials, construction methods, fuel modification, and defensible space are adequate to lower fire risk. Since the project is not located in a VHFHSZ, includes irrigated and maintained vegetation, and is not located adjacent to wildlands, especially in the northeast quadrant where fire risk would be the highest, the proposed project does not cause a significant cumulative impact.

### 5.18.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.18-1, 5.18-2, 5.18-3, and 5.18-4.

### 5.18.7 Mitigation Measures

No mitigation measures are required.

### 5.18.8 Level of Significance After Mitigation

Less than significant prior to mitigation.

## 5. Environmental Analysis

### WILDFIRE

#### 5.18.9 References

Airnow. 2018. How Smoke from Fires Can Affect Your Health. <https://airnow.gov/index.cfm?action=smoke.index>.

Balch, Jennifer, Bethany Bradley, John Abatzoglou, et al. 2017, March 14. "Human-Started Wildfires Expand the Fire Niche Across the United States." *Proceedings of the National Academy of Sciences* 114, no. 11. <https://www.pnas.org/content/pnas/114/11/2946.full.pdf>.

California Department of Forestry and Fire Protection (CAL FIRE). 2011, October. Laguna Niguel: Very High Fire Hazard Severity Zones in LRA. [https://osfm.fire.ca.gov/media/5886/c30\\_lagunaniguel\\_vhfhsz.pdf](https://osfm.fire.ca.gov/media/5886/c30_lagunaniguel_vhfhsz.pdf).

———. 2016. Incident Information Database.

———. 2019, December 11 (accessed). FRAP: FHSZ Viewer. [Egis.fire.ca.gov/FHSZ](http://egis.fire.ca.gov/FHSZ).

Laguna Niguel, City of. 1992. "Seismic/Public Safety." Chapter 7 of the Laguna Niguel General Plan. [https://www.cityoflagunaniguel.org/DocumentCenter/View/1886/LNGP\\_Chapter-7-Seismic---Public-Safety?bidId=](https://www.cityoflagunaniguel.org/DocumentCenter/View/1886/LNGP_Chapter-7-Seismic---Public-Safety?bidId=).

Federal Emergency Management Agency (FEMA). 2019, December 12 (accessed). FEMA Flood Map Service Center: Search by Address. <https://msc.fema.gov/portal/search?AddressQuery=30111%20Crown%20Valley%20Pkwy%2C%20Laguna%20Niguel%2C%20CA%2092677#searchresultsanchor>.

Orange County and Orange County Fire Authority (OC and OCFA). 2021, May. Draft Local Hazard Mitigation Plan. <https://www.ocsheriff.gov/sites/ocsd/files/2021-05/May%202021%20County%20of%20Orange%20Hazard%20Mitigation%20Plan%20PUBLIC%20REVIEW%20DRAFT.pdf>.

State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention. 2018. 2018 Strategic Fire Plan for California. [https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08\\_22\\_18.pdf](https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf).

Texas Wildfire Mitigation Project (TWMP). 2018. How Do Power Lines Cause Wildfires? <https://wildfiremitigation.tees.tamus.edu/faqs/how-power-lines-cause-wildfires>.

University of California Division of Agriculture and Natural Resources (ANR). 2009. Invasive Plants and Wildfires in Southern California. <https://anrcatalog.ucanr.edu/pdf/8397.pdf>.

US Geological Survey (USGS). 2018a. New Post-wildfire Resource Guide Now Available to Help Communities Cope with Flood and Debris Flow Danger. [https://www.usgs.gov/center-news/post-wildfire-playbook?qt-news\\_science\\_products=1#qt-news\\_science\\_products](https://www.usgs.gov/center-news/post-wildfire-playbook?qt-news_science_products=1#qt-news_science_products).

———. 2018b. Post-fire Debris Flow Facts. <https://www.conservation.ca.gov/index/Pages/Fact-sheets/Post-Fire-Debris-Flow-Facts.aspx>.