

## 4.18 Wildfire

This section of this EIR evaluates the potential impacts of increased wildfires that may result from the construction or operation of the Fanita Ranch Project (proposed project). It identifies the existing wildfire hazard conditions of the site and surrounding area and addresses impacts the proposed project may have in exacerbating wildfires. The majority of the information provided in this section is based on information from the Fire Protection Plan (FPP) and Construction Fire Prevention Plan (CFPP) (2020), which are included as Appendix P1, and the Wildland Fire Evacuation Plan (2020), which is included as Appendix P2, prepared by Dudek. This section also references information provided in the will serve letters provided by the Santee Fire Department (SFD) provided in Appendix M.

### 4.18.1 Environmental Setting

Discussions of climate, vegetation (fuels), and fire history pertinent to the project site are detailed below. The topography of the project site and its surrounding area is detailed in Section 4.6, Geology, Soils, and Paleontological Resources. A description of the surrounding and on-site land uses can be found in Section 4.10, Land Use and Planning.

#### 4.18.1.1 Climate

Inland County of San Diego (County) and the project site's weather are influenced by the Pacific Ocean and are frequently under the influence of a seasonal, migratory subtropical high-pressure cell known as the "Pacific High" (Appendix P1). Wet winters and dry summers with mild seasonal changes characterize the Southern California climate. The local climate, which has a large influence on fire risk, is typical of a Mediterranean area. The climate pattern is occasionally interrupted by extreme periods of hot weather, winter storms, or dry, easterly Santa Ana winds. The average high temperature for the project site during July is around 88 degrees Fahrenheit (°F). Precipitation typically occurs between December through April with 12 inches of rain per year. The prevailing wind is an on-shore flow from the Pacific Ocean, which is approximately 15 miles to the west.

Hot, dry Santa Ana winds, which typically occur in the fall, but have in recent years also occurred in the spring (May, in particular), are usually from the northeast and can gust to speeds of 50 miles per hour or higher. The Santa Ana winds are the result of occasional pressure gradients between the high pressure in the plateaus of the Great Basin and the lower pressure gradient over the Pacific Ocean (NOAA 2007). Drying vegetation with fuel moisture of less than 5 percent for smaller fuels (which dry faster than larger fuels) is possible during the summer months and becomes fuel available to advancing flames should an ignition occur. Extreme conditions, used in worst-case fire modeling for the project site, include 92°F temperatures in summer and winds of up to 50 miles per hour during the fall based on worst-case conditions from County data sets during the Cedar Fire (in 2003). Relative humidity of 12 percent or less is possible during fire season.

#### 4.18.1.2 Vegetation (Fuels)

The project footprint and preserve areas are currently undeveloped and are composed of 28 vegetation communities or land cover types that were mapped by biologists and included in Appendix D, Biological Resources Technical Report. The project is located within the wildland urban interface (WUI) and is statutorily designated a Very High Fire Hazard Severity Zone (VHFHSZ) by California Department of Forestry and Fire Protection (CAL FIRE) (FRAP 2018). Fire hazard designations are based on topography, vegetation, and weather, among other factors, with higher hazard category sites including steep terrain, unmaintained fuels/vegetation, and WUI locations.

The native vegetation is adapted to periodic wildfire events. Fire history information evaluated in relation to the proposed project, as described in Section 4.18.1.3, indicates that a majority of the site's vegetation last burned in 2003. As such, the property's vegetation is considered in ecological succession, with younger plants and reduced fuel loading, but over time, without ecological or human-made disturbances, would be expected to increase in biomass. On-site vegetation is important relative to wildfire as some vegetation, such as grassland habitats, are highly flammable while other vegetation, such as chaparral and oak riparian forest, may be more difficult to ignite but would burn under more intense fire conditions.

#### 4.18.1.3 Fire History

Fire history information provides an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources. Fire history represented in this section uses the Fire and Resource Assessment Program (FRAP) database. FRAP summarizes fire perimeter data dating to the late 1800s, but is incomplete because it only includes fires over 10 acres in size and does not have complete perimeter data, especially for the first half of the twentieth century (Appendix P1). However, the data provides a summary of recorded fires that show when large fires have occurred on the project site, which indicates the potential timing intervals and size of future fires.

Within 3 miles of the project site, there have been 65 fires recorded by CAL FIRE since 1910 (FRAP 2018). In total, 16 fires ranging from 25 acres (unnamed 1974 fire) to 280,276 acres (Cedar Fire in 2003) are noted to have burned through the project site. Recorded fires since 1910 that have burned onto the project site are included in Appendix P1. The most notable fire, the Cedar Fire, occurred during October and November 2003, and burned large areas of central San Diego County, including a large portion of the project site. The fire's rapid growth was driven by the Santa Ana winds, causing the fire to spread at a rate of 3,600 acres per hour.

Based on fire history data for the project vicinity, fire return intervals range between 1 and 25 years. This indicates significant wildfire potential in the region and the potential for the project site to be subject to occasional wildfire encroachment, most likely from the large expanses of open space to the north and east.

## 4.18.2 Regulatory Framework

The following section discusses applicable state and local regulations pertaining to wildfire. There are no federal wildfire regulations that apply to the proposed project.

### 4.18.2.1 State

#### California Building Code

The California Building Code contains regulations that must be followed to satisfy minimum acceptable levels of safety for buildings and non-building structures. Chapter 7A focuses primarily on preventing ember penetration into buildings, which is a leading cause of structure loss from wildfires.

#### California Department of Forestry and Fire Protection

CAL FIRE protects the people of California from fires, responds to emergencies, and protects and enhances more than 31 million acres of California's privately owned wildlands. CAL FIRE's firefighters, fire engines, and aircraft respond to an average of more than 5,756 wildland fires each year, which burn more than 233,483 acres annually (CAL FIRE 2019). As part of the CAL FIRE team since 1995, the Office of the State Fire Marshal supports the CAL FIRE mission to protect life and property through fire prevention engineering programs, law, and code enforcement and education.

#### California Fire Code

The California Fire Code (24 CCR 9) contains regulations consistent with nationally recognized accepted practices for safeguarding, to a reasonable degree, life and property from the hazards of the following: fire and explosion; hazardous conditions in the use or occupancy of buildings or premises; and, dangerous conditions arising from the storage, handling, and use of hazardous materials and devices. It also contains provisions to assist emergency response personnel. The California Fire Code and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment.

#### California Public Resources Code

##### ***Fire Hazard Severity Zones – California Public Resources Code, Sections 4201–4204***

California Public Resources Code, Sections 4201–4204, and Government Code Sections 51175–89 direct CAL FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. The Fire Hazard Severity Zones (FHSZs) define the application of various mitigation strategies to reduce risk associated with wildland fires. Fire hazard designations are based on topography, vegetation, and weather, among other factors, with higher hazard category sites including steep terrain, unmaintained fuels/vegetation, and WUI locations. Projects situated in VHFHSZs require fire hazard analysis and application of fire protection measures that have been

developed to specifically result in defensible communities in these WUI locations. As discussed in Section 4.18.1, Environmental Setting, the project site is within an area designated as a VHFHSZ by CAL FIRE (FRAP 2018).

### **California Strategic Fire Plan**

The California Strategic Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and the CAL FIRE. By placing the emphasis on what needs to be done long before a fire starts, the California Strategic Fire Plan looks to reduce firefighting costs and property losses, increase firefighter safety, and contribute to ecosystem health. The Strategic Fire Plan has a vision for a natural environment that is more fire resilient, buildings and infrastructure that are more fire resistant, and a society that is more aware of and responsive to the benefits and threats of wildland fire—all achieved through local, state, federal, tribal, and private partnerships (CAL FIRE 2018).

### **Senate Bill 1241**

In 2012, Senate Bill 1241 added Section 66474.02 to Title 7, Division 2, of the California Government Code, commonly known as the “Subdivision Map Act.” The statute prohibits subdivision of parcels designated very high fire hazard, or that are in a State Responsibility Area, unless certain findings are made prior to approval of the Vesting Tentative Map. The statute requires that a city or county planning commission make three new findings regarding fire hazard safety before approving a subdivision proposal. The three findings are (1) the design and location of the subdivision and its lots are consistent with defensible space regulations found in California Public Resources Code, Section 4290–91; (2) structural fire protection services would be available for the subdivision through a publicly funded entity; and (3) ingress and egress street standards for fire equipment are met per any applicable local ordinance and California Public Resources Code, Section 4290.

### **State Fire Regulations**

Fire regulations for California are established in Sections 13000 et seq. of the California Health and Services Code and include regulations for structural standards (similar to those identified in the California Building Code); fire protection and public notification systems; fire protection devices, such as extinguishers and smoke alarms; standards for high-rise structures and childcare facilities; and fire suppression training.

#### **4.18.2.2 Local**

##### **County of San Diego Code of Regulatory Ordinances, Sections 96.1.005 and 96.1.202, Removal of Fire Hazard**

The County Fire Authority, in partnership with CAL FIRE, the Bureau of Land Management, and the U.S. Forest Service, is responsible for the enforcement of defensible space inspections. Inspectors are responsible for ensuring that adequate defensible space has been created and maintained around structures. If violations of the program requirements are noted, inspectors list

the required corrective measures and provide a reasonable time frame in which to complete the task. If violations still exist upon re-inspection, the local fire inspector will forward a complaint to the County for further enforcement action.

### **San Diego County Multi-Jurisdictional Hazard Mitigation Plan**

The purpose of the County's Multi-Jurisdictional Hazard Mitigation Plan (County of San Diego 2018) is to identify the County's hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, and set goals to mitigate potential risks to reduce or eliminate long-term risk to people and property from natural and human-made hazards. The City of Santee (City) participates in the Multi-Jurisdictional Hazard Mitigation Plan. An important component of the plan is the Community Emergency Response Team, which educates community members about disaster preparedness and trains them in basic response skills, such as fire safety, light search and rescue, and disaster medical operations. The City is 1 of 20 jurisdictions that support and participate in the team.

### **County of San Diego Emergency Operations Plan**

The County's Emergency Operations Plan dictates who is responsible for an evacuation effort and how regional resources will be requested and coordinated. First responders are responsible for determining initial protective actions before the Emergency Operations Center and emergency management personnel have an opportunity to convene and gain situational awareness. Initial protective actions are shared and communicated to local Emergency Operations Centers and necessary support agencies as soon as possible to ensure an effective, coordinated evacuation. During an evacuation effort, the designated County Evacuation Coordinator is the County Sheriff, who is also the Law Enforcement Coordinator. The County Evacuation Coordinator is assisted by other law enforcement and support agencies.

### **Santee Emergency Operations Plan**

The Santee Emergency Operations Plan was adopted in June 2010 and developed from the San Diego County Operational Area Emergency Plan. This plan was prepared to ensure the most effective and economic allocation of resources for the maximum benefit and protection of the community in time of emergency. The objective of the plan is to incorporate and coordinate City facilities and personnel into an efficient organization capable of responding to any emergency.

The SFD and Sheriff's Department work together under unified command on fire evacuation protocols and procedures. Improvements to avoid bottlenecking during evacuation have been developed. These improvements include the use of geo-targeting in conjunction with the County's public safety grid maps, which are available to all first responders. The Sheriff's Department, CAL FIRE, most firefighting agencies, and San Diego Gas & Electric developed the maps so the County is broken into grids and subsections of grids. The public safety grid maps help first responders make specific, targeted, tiered, and staggered evacuations.

## Santee General Plan

Divided into nine elements, the Santee General Plan is a statement of intent by the City as to the future development of the community. This is accomplished through objectives and policies that serve as a long-term policy guide for physical, economic, and environmental growth.

The purpose of the Safety Element is to reduce loss of life, injuries, and damage to property resulting from natural and human-caused public safety hazards including flooding, geologic and seismic hazards, fire, traffic hazards, and crime. The Safety Element identifies areas where private and public decisions on land use need to be responsive to potentially hazardous conditions. It also serves to inform individuals, firms and public agencies of City's policies regarding appropriate levels of public services such as police and fire protection. Policies relevant to the proposed project include the following (City of Santee 2003):

- **Objective 4.0:** Minimize injuries, loss of life and property damage resulting from fire hazards.
  - **Policy 4.1:** Proposed developments should be approved only after it is determined that there will be adequate water pressure to maintain the required fire flow at the time of development.
  - **Policy 4.2:** The City should ensure that all new development meets established response time standards for fire and life safety services.
  - **Policy 4.4:** The City shall require emergency access routes in all developments to be adequately wide to allow the entry and maneuvering of emergency vehicles.
  - **Policy 4.7:** The City shall ensure that the distribution of fire hydrants and capacity of water lines is adequate through periodic review.
  - **Policy 4.8:** Encourage and support the delivery of a high level of emergency services through cooperation with other agencies and use of available financial opportunities.
  - **Policy 4.9:** All proposed development shall satisfy the minimum structural fire protection standards contained in the adopted edition of the Uniform Fire and Building Codes; however, where deemed appropriate the City shall enhance the minimum standards to provide optimum protection.
  - **Policy 4.10:** Encourage the continued development, implementation and public awareness of fire prevention programs.
  - **Policy 4.11:** In order to minimize fire hazards, the Santee Fire and Life Safety Department shall routinely be involved in the review of development applications. Considerations shall be given to adequate emergency access, driveway widths, turning radii, fire hydrant locations and needed fire flow requirements.
  - **Policy 4.12:** The timing of additional fire station construction or renovation, or new services shall relate to the rise of service demand in the City and surrounding areas.
  - **Policy 4.13:** Support mutual aid agreements and communications links with County and the other municipalities participating in the Unified San Diego County Emergency Service Organization.

## Santee Municipal Code

Chapter 11.18 of the Santee Municipal Code adopts the 2019 California Fire Code, Part 9, Title 24, of the California Code of Regulations. The California Fire Code includes regulations requiring all new development to install sprinkler systems, the minimum required unobstructed street widths for fire apparatus access, and requirements that include a FPP for development in WUI areas. Ordinance 570 amended the Santee Municipal Code to formally adopt the 2019 California Fire Code as the City's Fire Code.

### 4.18.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, if located in or near state responsibility areas of lands classified as very high fire hazards severity zones, impacts to wildfire would be significant if the proposed project would:

- **Threshold 1:** Substantially impair an adopted emergency response plan or emergency evacuation plan.
- **Threshold 2:** Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire.
- **Threshold 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 4:** Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope stability, or drainage changes.

### 4.18.4 Method of Analysis

This section of this EIR gives full consideration to the development of the proposed project and acknowledges the physical changes that would occur to the existing setting from implementation of the proposed project. The project site is located in an area designated as VHFHSZ by CAL FIRE. Projects situated in VHFHSZs require fire hazard analysis and application of fire protection measures that have been developed to specifically result in defensible communities. To determine impacts, existing conditions were compared with buildout potential under the proposed project, based on the information included in the FPP and CFPP (Appendix P1) and Wildland Fire Evacuation Plan (Appendix P2). Regardless of the ultimate development on the proposed school site (school or residential), the impacts to wildfire would be similar due to development still occurring in this area. Therefore, the analysis below adequately addresses the preferred land use plan with school and the land use plan without school.

## 4.18.5 Project Impacts and Mitigation Measures

### 4.18.5.1 Threshold 1: Emergency Response Plan or Evacuation Plan

*Would the proposed project substantially impair an adopted emergency response plan or emergency evacuation plan?*

**Impact:** Implementation of the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

**Mitigation:** No mitigation is required.

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

**Significance After Mitigation:** Less than significant.

### Impact Analysis

This threshold is addressed in detail in Section 4.8, Hazards and Hazardous Materials, under Section 4.8.5.6. A brief summary is provided below. According to the SFD (Appendix M), the proposed project would not interfere with the City's adopted Emergency Operations Plan (2010) or the Unified San Diego County Emergency Services Organization and County Operational Area Emergency Operations Plan – Evacuation Annex (2018). As required by the SFD, the proposed project would provide new evacuation and emergency responses plans, including FPP (Appendix P1), CFPP (Appendix P1), and Wildland Fire Evacuation Plan (Appendix P2). The FPP addresses fire safety, prevention, and protection for the proposed project and provides measures for fire protection that would either meet or exceed the Santee Municipal Code and Ordinance 570. The CFPP provides standard protocols and approaches for reducing the potential for ignitions for typical construction site activities during proposed project construction. The Wildland Fire Evacuation Plan created for the proposed project was based on the City's Emergency Operations Plan. The goal of the City's Emergency Operations Plan is to incorporate and coordinate City facilities and personnel into an efficient organization capable of responding to any emergency.

The primary streets that would be used for evacuation from the project site are Fanita Parkway, Cuyamaca Street, and Magnolia Avenue. These streets would provide access to major traffic corridors including directly or indirectly to State Route (SR-) 52 to the south, SR-67 to the east, Interstate (I-) 8 to the south, I-125 to the south, and I-15 to the west (Appendix P2). During an emergency evacuation from the project site, the primary and secondary roadways would be capable of providing resident egress while responding emergency vehicles are traveling inbound. In addition, bicycle lanes would be provided in both directions that can act as emergency lanes for first responders and evacuation lanes for project occupants. Because the roadways are designed to meet or exceed the 2019 California Fire Code requirements, including unobstructed travel lanes consistent with the Fanita Ranch Specific Plan standards, adequate parking, 28-foot inside radius, grade maximums, signals at intersections, and extremely wide roadside fuel modification zones, potential conflicts that could reduce roadway efficiency would be minimized, allowing for smooth evacuations. Additionally, the streets would provide residents the option to evacuate from at least two routes that lead to three main arteries. Depending on the nature of the emergency, residents



can exit south on Fanita Parkway or Cuyamaca Street, which would also connect with the proposed extension of Magnolia Avenue (Appendix P2). Note that the Magnolia Avenue extension would be constructed by the certificate of occupancy of the 1,500th equivalent dwelling unit. The available evacuation routes prior to the Magnolia Avenue connection (Fanita Parkway and Cuyamaca Street) would meet the 2019 California Fire Code, Appendix D, and the Santee Municipal Code and Ordinance 570 requirement for multiple access points. Therefore, the evacuation routes are considered adequate for emergency purposes for the interim period, beginning at project construction and lasting until the certificate of occupancy of the 1,500th equivalent dwelling unit. Refer to Figure 4.8-1, Emergency Evacuation Plan, in Section 4.8 for a depiction of the evacuation plan for the project site.

The internal roadways from the residences to existing and planned off-site travel routes would be fuel modified passageways (Appendix P1). Portions of the proposed project's access roads would traverse through areas with natural vegetation that are considered wildland fuels. The proposed project would provide a minimum of 50 feet of modified fuel areas along both sides of each street to provide a buffer that would reduce ignitions from vehicle-related causes (e.g., catalytic converter, brake-related, broken chains, tossed cigarette) and provide a setback from wildland fuels. In emergencies where it is determined to be safer to remain on site, sheltering on the project site's defensible residences and village buildings would be possible if evacuation was considered less safe.

The FPP and Wildland Fire Evacuation Plan developed for the proposed project provide measures for meeting City and County evacuation requirements. Therefore, the proposed project would not significantly impair an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant.

## Mitigation Measures

The proposed project would have a less than significant impact related to substantially impairing an adopted emergency response plan or emergency evacuation plan; therefore, no mitigation is required.

### 4.18.5.2 Threshold 2: Pollutant Concentrations

*Would the proposed project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire?*

**Impact:** The proposed project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire.

**Mitigation:** No mitigation is required.

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

**Significance After Mitigation:** Less than significant.

## Impact Analysis

The wildland fire risk in the vicinity of the proposed project site has been analyzed according to a standard used throughout the County (San Diego County Guidelines for Determining Significance – Wildland Fire and Fire Protection [2010]). It has been determined that wildfires may occur in wildland areas on and surrounding the project site as they have historically. Additionally, increased vehicle traffic and human presence on the project site could increase the potential for wildfire ignitions during operation. The potential for the proposed project to exacerbate wildfire risks and expose project occupants to pollutant concentrations during construction and operation is discussed below.

### **Construction**

The proposed project is located within a VHFHSZ and heat or sparks from construction equipment, vehicles, and the use of flammable hazardous materials have the potential to ignite adjacent vegetation and start a fire, especially during weather events that include low humidity and high wind speeds. For example, heated exhausts or sparks from earthmoving and excavating equipment or other small gas-powered equipment like chainsaws may result in vegetation ignition. Wood chippers, grinders, or torches used during construction may also produce sparks, use flammable fuels, or expose flammable vegetation to open sources of heat.

The proposed project would implement the CFPP (Appendix P1) that has been prepared in compliance with the requirements of the Santee Municipal Code and Ordinance 570, the 2019 California Fire and Building Codes, and the County's 2010 FPP Guidelines for Determining Significance. The potential risk of wildfire ignition and spread associated with construction of the proposed project can be managed so that the potential for vegetation ignition is substantially reduced. In addition, pre-planning and construction personnel training for fire awareness, reporting, and suppression not only results in lower probability of ignition but also in higher probability of fire control and extinguishment in its early stages. Data indicate that 95 percent of all wildfire ignitions are controlled during initial attack (Smalley 2008).

Additionally, the proposed project would use construction measures as identified in the CFPP to avoid construction-related wildfire impacts. These measures include having adequate water available to service construction activities, implementing a CFPP (Appendix P1), providing proper wildfire awareness, reporting, and suppression training to construction personnel, and requiring that all construction-phase components of the fuel modification are complete prior to delivery of combustible materials/lumber to the project site. Therefore, the proposed project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire during construction, and impacts would be less than significant.

### **Operation**

The proposed project would implement the FPP (Appendix P1) that has been prepared in compliance with the requirements of the Santee Municipal Code and Ordinance 570, the 2019 California Fire and Building Codes, and the County's 2010 FPP Guidelines for Determining Significance.

Slopes at the project site and in the region are variable, but do include steep topography that can facilitate fire spread. Conversely, prevailing winds, which are from the west and southwest and typically include higher humidity and lower wind speeds, would not tend to facilitate aggressive fire spread. However, the occurrence of the Santa Ana winds, which are dry and much higher velocity, could facilitate fire spread. The project's FPP contemplated these conditions and designed fire protection features that are site specific and focused on protecting the project's buildings and residents while simultaneously minimizing the likelihood for on-site fire to burn off site into open space. The fire protection features of the project, as designed in the FPP, are further below. For greater detail see Appendix P1.

The proposed project would include a variety of fire protection features that form a redundant system of protection to minimize the likelihood of wildfire exposing people or structures to a significant risk of loss, injury, or death involving wildland fires. The proposed project would provide a fire hardened landscape, ignition-resistant residences and other buildings, and conversion of fuels to maintained developed areas with designated review of all landscaping and fuel modification areas and highly ignition-resistant structures. As discussed previously in Section 4.18.5.1, the project site would implement the Wildland Fire Evacuation Plan (Appendix P2) compliant with City and County requirements, and if evacuation is not considered the preferred approach, such as during a short-notice evacuation, the proposed project offers a contingency option of temporarily sheltering on site. These concepts are discussed further in the following sections.

### **Ignition-Resistant Structures**

The ignition-resistant requirements for new communities built in the WUI or VHFHSZs have been determined by state and local fire agencies to provide acceptable resistance to ignition from the types of wildland fires produced by the area's wildland fuels, terrain, and weather. The County conducts after-fire assessments following any wildfire that impacts buildings. Following the 2003 Cedar Fire and the 2007 Witch Fire, the County collected a large volume of data that strongly indicates the building codes are working to prevent residence loss. After-fire structure loss and save assessments noted that fewer than 2 percent of the structures built to 2004 codes were impacted and most of the residences lost were of older, more vulnerable construction (IBHS 2008). Many of the newer structures (2003 or 2004) that were lost were due to human error. The 2019 County Fire and Building Codes reflect additional improvements in technology and materials that result in highly ignition and ember resistant structures. When combined with maintained fuel modification areas, fire apparatus access, water (fire flow), and an equipped and trained responding fire agency on site, all of which

would be provided for the proposed project as identified in the FPP, the result would be a defensible project that is designed and built to minimize demands on available firefighting resources.

The Santee City Council adopted a WUI development standard in November 2004 and then amended the Fire Code with adoption in June 2006. Measures were also adopted into the 2007 California Building Code and have been retained and enhanced in code updates since then, including the 2019 California Building and Fire Codes. The following project features are required for new development in WUI areas and form the basis of the system of protection necessary to minimize structural ignitions and facilitate access by emergency responders as identified in the FPP (Appendix P1):

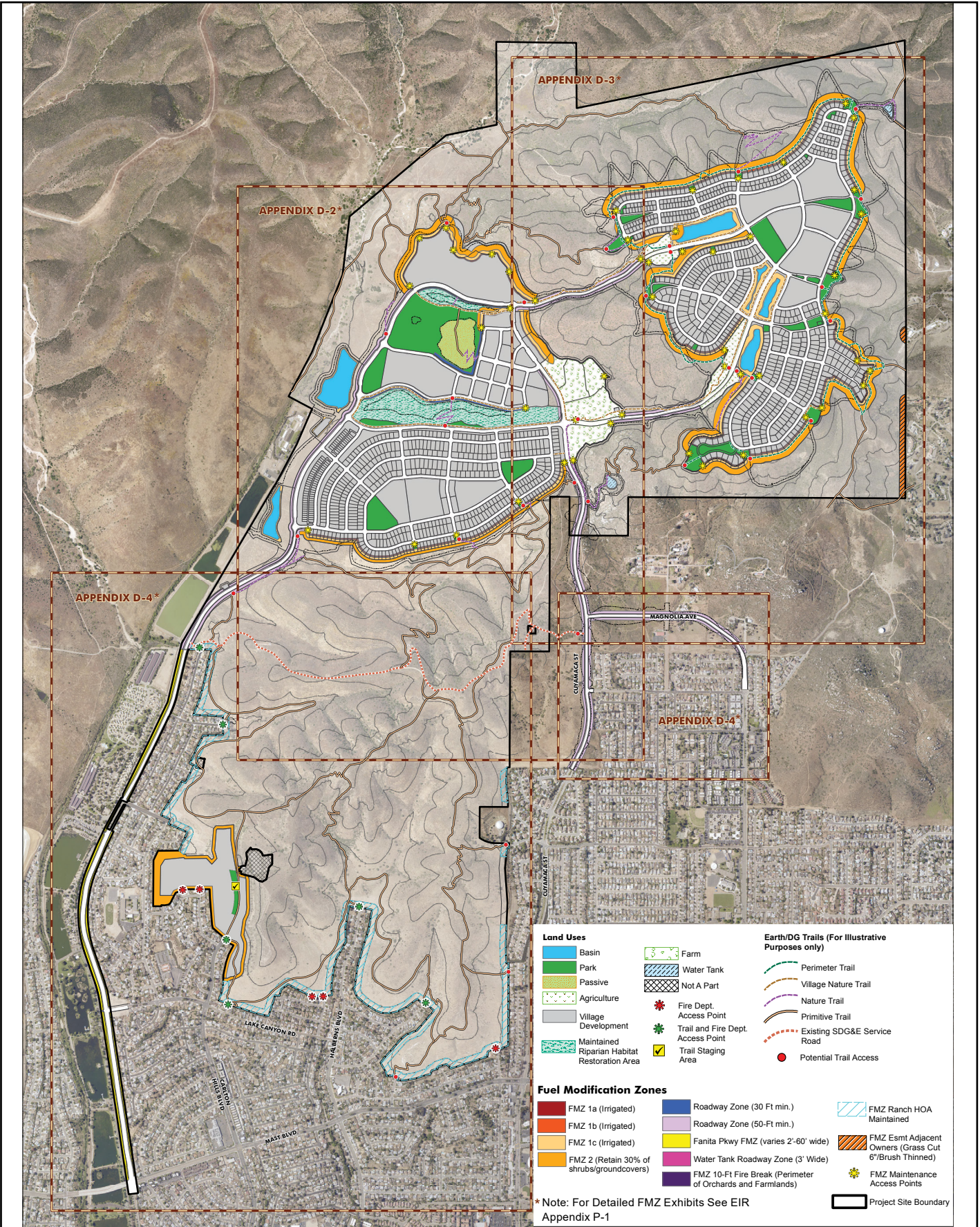
- Application of the latest adopted ignition-resistant building codes;
- Non-combustible or ignition-resistant exterior wall coverings;
- Multi-pane glazing with a minimum of one tempered pane;
- Ember resistant vents;
- Interior, automatic fire sprinklers for all structures;
- Modern infrastructure, access roads, and water delivery system;
- Maintained fuel modification areas; and
- Fire apparatus access roads throughout the proposed project.

#### **Effective Fuel Modification Zones**

Modified fuel areas separating wildland fuel areas from structures can reduce the number of fuel-related structure losses by providing separation between structures and heat generated by wildland fuels. Fuel modification zones (FMZs) provide appropriate buffers between native fuels and structures based on research indicating the type and width of FMZs that provide protection. As discussed in detail in Section 6.1 of Appendix P1, studies show that as little as 30 feet of fuel modification provides significant buffering from off-site fuels due to heat dissipation rates across distances. As identified in the FPP, the proposed project's FMZs would be initially inspected by a third-party landscape plan reviewer and then inspected bi-annually by a homeowners association (HOA)-funded third-party FMZ inspector who would specify where maintenance is required for all zones. Once these inspections are completed, certification would be provided to SFD that the entire FMZ meets the FPP's requirements.

The proposed FMZs are designed to minimize wildfire encroaching upon the community and minimize the likelihood that an on-site ignition would spread into the Habitat Preserve areas. The proposed FMZs would provide separation from the unmaintained vegetation occurring outside the FMZs. The FMZs would include low-fuel, maintained vegetation, including 65 feet of irrigated zone, resulting in high vegetation moisture, which is ignition resistant (Appendix P1). The FMZs would provide a buffer of reduced fuel densities, lack of fuel continuity, and a reduction in the receptiveness of the landscape to ignition and fire spread. Refer to Figure 4.18-1, Fire Management Zones Plan, for a depiction of the various fire management conditions on the project site.

Path: C:\Users\Randy\Desktop\Projects\_Cloner\FanitalMap Docs\EIR\Project\_Description



Source: Dudek 2020.



Harris & Associates

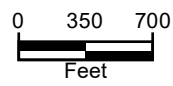


Figure 4.18-1

Fire Management Zones Plan

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## Ignition Sources

The types of potential ignition sources that currently exist in the project area include overhead power lines, vehicles, roadways (SR-67), and off-site residential neighborhoods. The proposed project would introduce potential ignition sources, particularly more people in the area. While it is true that humans are the cause of most fires in California, there is no data available that links increases in wildfires with the development of ignition-resistant communities like the proposed project. The proposed project would include a robust fire protection system, as described previously and detailed further in the FPP (Appendix P1). This same robust fire protection system provides protections from on-site fire spreading to off-site vegetation. The landscape throughout the proposed project and on its perimeter would be highly maintained and much of it irrigated (all zone 1 setback areas, common areas throughout the community and private yards), which would further reduce its ignition potential (Appendix P1). Structures would be highly ignition resistant on the exterior and the interiors would be protected with automatic sprinkler systems, which have a very high success rate for confining fires or extinguishing them. Therefore, accidental fires within the proposed project's landscape areas or on-site structures would have limited ability to spread.

The proposed project would be fire adapted with a strong resident outreach program that raises fire awareness among its residents, as defined further in the Wildland Fire Evacuation Plan (Appendix P2). The proposed project population would provide a heightened early wildfire detection network for the City and surrounding areas.

The proposed project would convert nearly 988 acres of ignitable fuels to lower flammability landscape and hardscape, include better access throughout the site, provide managed and maintained landscapes, and place more fire aware individuals on the ground that would reduce the likelihood of arson, off-road vehicles, shooting, or other non-authorized recreational-based activities that cause fires, some of which is currently occurring on the undeveloped project site. In addition, the proposed project would include a fire station equipped with trained firefighters that would be able to respond quickly to reported fires.

Fires originating off site would not have continuous fuels across the development footprint and would therefore be expected to burn into the provided FMZs with reduced intensity until starved of fuels, well away from the site's structures. Burning vegetation embers may land on proposed project structures, but are not likely to result in ignition based on ember decay rates and the types of non-combustible and ignition-resistant materials that would be used (Appendix P1). Ember resistant venting would be used on all structures within the proposed project, addressing one of the biggest causes of wildfire structure losses. Ongoing inspections and maintenance that would occur in the proposed project's landscape and fuel modification areas would assure that the FMZs continually meet the requirements of the SFD and the proposed project's FPP (Appendix P1).

### Fire Protection Features that Lower Wildfire Ignition Risk

Each of the fire protection features provided as part of the code requirements or customized for the proposed project are based on the FPP's evaluation work to protect the site, its structures, and its occupants from wildfires. These features have a similar positive impact on the potential for wildfire ignitions caused by the proposed project and its inhabitants.

The ignition-resistant landscapes and structures and the numerous specific requirements would minimize the ability for an on-site fire to spread to off-site fuels, as follows:

- **Ignition-resistant, planned, and maintained landscape.** Site landscaping of common areas and FMZs would be subject to strict plant types that are lower-ignition plants, with those closest to structures requiring irrigation to maintain high plant moistures that equate to difficult ignition. These areas would be closest to structures, where ignitions would be expected to be highest, but would be prevented through these ongoing maintenance efforts.
- **Wide FMZ around perimeter of proposed project.** The wide FMZ, between 115 and 165 feet wide, includes specifically selected plant species, very low fuel densities (only 30 percent retention of native plants in outer zones and irrigated inner zones), and ongoing HOA-funded and applied maintenance, resulting in a wide buffer between the developed areas and the off-site native fuels.
- **Twice-annual FMZ inspections.** The HOA would have a contracted, third-party, SFD-approved FMZ inspector perform two inspections per year to ensure that FMZs are maintained in a condition that is consistent with the City's and FPP's requirements and would provide a benefit of a wide barrier separating wildland fuels from on-site ignitions.
- **Ignition-resistant structures.** Structures would be built to the California Building Code, Chapter 7A, ignition-resistant requirements that have been developed and codified as a direct result of after-fire save and loss assessments. These measures would result in homes that are designed, built, and maintained to withstand fire and embers associated with wildfires. The wide FMZs would not result in wildfire directly next to these structures. Homes and buildings can be built in the VHFHSZs and WUI areas when they are part of an overall approach that considers wildfire and provides design features that address the related risks. A structure in a VHFHSZ that is built to these specifications can be at lower risk than an older structure in a non-FHSZ. The ignition resistance of on-site structures would result in a low incidence of structural fires, further minimizing the potential for project-related wildfires.
- **Interior fire sprinklers.** Sprinklers in residences would be designed to provide additional time for occupants to escape the residence. Sprinklers in multi-family and commercial structures would be designed to provide structural protection. The common benefit of fire sprinklers is that they are successful at assisting responding firefighters by either



- extinguishing a structural fire or containing the fire to the room of origin and delaying flash over. This benefit also reduces the potential for an open space vegetation ignition by minimizing the possibility for structure fires to grow large and uncontrollable, resulting in embers that are blown into wildland areas.
- **Fire access roads.** Streets provide access for firefighting apparatus. Proposed project streets would provide code-consistent access throughout the community, including access from existing dead-end streets south of the proposed project. Better access to wildland areas may result in faster wildfire response and continuation of the fire agencies' successful control of wildfires at small sizes.
  - **On-site fire station.** The on-site fire station would result in fast response and additional resources for the SFD. Fires, whether on site or in the open space, would receive fast response, which is important for successful containment and, in the case of fires occurring during extreme fire weather, for fast size up and additional resource requests.
  - **Water.** Providing firefighting water throughout the proposed project with hundreds of fire hydrants accessible by fire engines is a critical component of both structural and vegetation fires. The proposed project would provide firefighting water volume, availability, and sustained pressures to the satisfaction of the SFD. Water accessibility helps firefighters control structural fires and helps protect structures from and extinguish wildfires.

The proposed project would comply with and, in some cases, exceed the applicable fire and building codes (2019 California Fire and Building Codes and Santee Municipal Code and Ordinance 570) and would include a layered fire protection system inclusive of site-specific measures that would result in a community that is less susceptible to wildfire than surrounding landscapes and that would facilitate firefighter and medical aid response. Tables 7 and 8 of the FPP (Appendix P1) summarize the code-required safety measures as well as proposed measures that exceed code requirements. These project features, combined with the proposed ignition-resistant construction materials, would be consistent with the adopted the SFD Fire and Building Codes and would not exacerbate or expose project occupants to unacceptable wildfire risk.

### **Occupant Exposure**

As discussed in Section 4.13, Population and Housing, the proposed project has identified a population of approximately 7,974 residents under the preferred land use plan with school and 8,145 residents under the land use plan without school. Given the proposed project site's location in a VHFHSZ, several fire protection systems have been included in the proposed project design, or are otherwise required by relevant codes and standards. Fire protection systems for the proposed project that serve to minimize occupant exposure to wildfire impacts are described below and detailed further in Section 6 of the FPP (Appendix P1).

A public water system would be installed with a redundant or looped water supply for fire protection and system reliability in the event of a large-water-demand fire. The public water system would provide a minimum fire flow of 2,500 gallons per minute for 2 hours with 300-foot spacing between hydrants, a dedicated fire water pipeline system, and appropriate hose connections.

Construction of proposed project structures would comply with the latest ignition-resistant building codes found in Chapter 7A of the California Building Code, as adopted by City, and any additional restrictions or requirements adopted locally by the SFD.

Sprinklers designed by a licensed fire protection engineer or fire sprinkler contractor would be installed in all structures for each occupancy type. A private booster pump and secondary power source would be installed for approximately 21 single-family residences in Vineyard Village where the area experiences residual pressures of less than 40 pounds per square inch during peak-hour demand conditions.

Defensible space areas (FMZs) would be installed and maintained along the southern edge of the project site and interior open space areas of 115 feet wide. The proposed project's FMZs on the northern and eastern edges of the project site would be extended to 165 feet in width because these areas are adjacent to native landscapes in the Habitat Preserve that produce higher flame lengths. Both FMZs would reduce the potential for extreme fire behavior adjacent to developed areas and provide a working area for firefighters to conduct suppression activities.

Unobstructed travel lanes to the SFD's satisfaction would be installed for on-site access roads and vehicle turnarounds, meeting appropriate loading standards per the Fanita Ranch Specific Plan. Roadways adjacent to natural areas would provide 50 feet of fuel modification area on each side of the street. The proposed project would further provide at least two routes that lead to at least three main arteries for evacuation. If evacuation is not considered the preferred approach, such as during a short-notice evacuation, the proposed project would offer a contingency option of temporarily sheltering on site.

As described throughout this section, the proposed project has been designed to adhere to the most recent ignition-resistant building codes applicable to developments in VHFHSZs, including defensibility features, and would not result in the exposure of project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire due to slope, prevailing winds, or other factors. Therefore, impacts from operation of the proposed project would be less than significant.

#### **Risk from Adding New Residents**

In addition, the FPP for the proposed project (Appendix P1) analyzed the wildfire risk associated with adding new residents to a previously undeveloped area. Human-related activities are responsible for the majority of California wildfires. Certain human activities can result in sparks, flames, or heat that may ignite vegetative fuels without proper prevention measures in place. These

ignitions predominantly occur as accidents but may also be purposeful, such as arson. Roadways are a particularly high source for wildfire ignitions due to high usage and vehicle-caused fires (catalytic converter failure, overheated brakes, dragging chains, tossed cigarette, and others). In Southern California and the County, the population living at, working in, or traveling through the WUI is vast and provides a significant opportunity for ignitions every day. However, it is a relatively rare event when a wildfire occurs and an even rarer event when a wildfire escapes initial containment efforts. Approximately 90 to 95 percent of wildfires are controlled below 10 acres (Appendix P1).

Research indicates that the type of dense, master planned developments, like the proposed project, are not associated with increased vegetation ignitions. During preparation of the FPP (Appendix P1), a summary of the wildfire ignitions included in the CAL FIRE FRAP database was reviewed, dating back over 100 years. It found that, in the County, equipment-caused fires were the most numerous, and these also accounted for most of the area burned, followed closely by the area burned by power line fires. Ignitions classified as equipment-caused frequently resulted from exhaust or sparks from power saws or other equipment with gas or electrical motors, such as lawn mowers, trimmers, or tractors and associated with lower density housing. In the County, ignitions were more likely to occur close to streets and structures and at intermediate structure densities.

Housing density directly influences susceptibility to fire because, in higher density developments, there is one interface (the community perimeter) with the wildlands. Lower density development creates more structural exposure to wildlands, less or no ongoing landscape maintenance (an intermix rather than interface), and consequently, more difficulty for limited fire resources to protect well-spaced homes (refer to Figures 6 through 8 in Appendix P1). The intermix includes housing amidst the unmaintained fuels, whereas the proposed project would convert fuels within the footprint and provide a wide, managed fuel modification zone separating homes from unmaintained fuel areas and creating a condition that makes defense easier.

The research reviewed during preparation of the FPP (Appendix P1) concludes that lower density housing poses a higher ignition risk than higher density communities. A vast WUI already exists in the area adjacent to the project site, dominated by older, more fire-vulnerable structures, constructed before stringent fire code requirements were imposed on residential development, with varying levels of maintained fuel modification buffers. As discussed in detail throughout the FPP, the proposed project is an ignition-resistant community designed to include professionally managed and maintained fire protection components, modern fire code-compliant safety features, and specific measures provided where ignitions are most likely to occur (such as roadways). Therefore, the development of the proposed project would not be expected to materially increase the risk of vegetation ignitions.

Moreover, frequent fires and lower density housing growth may lead to the expansion of highly flammable exotic grasses that can further increase the probability of ignitions. This is not the case with

the proposed project because the landscapes would be managed and maintained to remove exotic fuels that may establish over time.

As discussed previously, research indicates that it is less likely for higher density developments to be impacted by wildfires than lower density developments. The same protections that starve wildfires of fuels and minimize or prevent wildfires from transitioning into a higher density community such as the proposed project also serve to minimize or prevent on-site fires from transitioning into wildlands. Further, the proposed project's requirement that structures include interior fire sprinklers would significantly reduce the likelihood that a building fire would spread to the point of flashover, where a structure burns beyond control and produces embers. Interior sprinklers are very efficient, keeping fires to the room of origin or extinguishing the fire before the responding firefighters arrive. Similarly, the irrigated FMZs are positioned throughout the development areas and the first zones on the perimeter of the proposed project. Irrigated zones include plants with high internal moisture and spacing between plants and plant groups that make it difficult to ignite and spread from plant to plant. Lastly, the proposed on-site fire station and additional humans on the site would result in fast detection of fires and firefighter response, a key in limiting the growth of fires beyond the incipient stage.

Currently, trails exist in and around the proposed project's development footprint and are frequented by a myriad of locals for hiking, mountain biking, horseback riding, and motorcycle and all-terrain vehicle use. If a wildfire were to ignite from human activity on these trails today, fire detection and response could be delayed due to the remoteness of the area, which is not directly visible from populated areas. Delayed detection would contribute to delayed response to the scene due to the lack of site access. Fire size up (determining the needed firefighting resources) and requests for additional resources, including aerial support, would also be delayed in comparison to post-construction of the proposed project. With the proposed project, motorized activities on the trails would be prohibited and enforced. If a hiker or mountain biker were to start a fire, detection and response would be anticipated on a fast timeline due to the residents living in the proposed community who would have the ability to detect fires throughout the property. The quick detection and call to 911 would result in a fast response from the on-site fire station, which would be located, staffed, and equipped to reach anywhere on the project site in 6 minutes or less travel time. If a fire is detected and cannot be accessed by a responding fire engine, it would be sized up, and additional aerial and other support would be requested quickly.

Therefore, based on the factors discussed previously, the addition of new residents on the previously undeveloped project site would not exacerbate the spread of wildfire. Impacts would be less than significant.

## Mitigation Measures

The proposed project would have a less than significant impact related to exacerbating wildfire risks and exposing project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire; therefore, no mitigation is required.

### 4.18.5.3 Threshold 3: Installation or Maintenance of Associated Infrastructure

*Would the proposed project 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?*

**Impact:** The proposed project would require the installation and maintenance of infrastructure (such as streets, fuel breaks, emergency water sources, power lines, or other utilities) and would implement fire prevention construction and maintenance measures outlined in the CFPP and FPP such that it would not exacerbate fire risk or result in temporary or ongoing impacts to the environment.

**Mitigation:** No mitigation is required.

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

**Significance After Mitigation:** Less than significant.

## Impact Analysis

Infrastructure required for development of the proposed project, including water, sewer, stormwater, electrical power and natural gas, fire protection, fuel management zones, and roadways, is discussed in detail in Chapter 3, Project Description, and environmental impacts from construction and operation of this infrastructure are analyzed in Sections 4.1 through 4.17 of this EIR. The following discussion identifies proposed project infrastructure and its contribution to wildfire risk.

### **Potable Water Supply**

The proposed project would be provided water by Padre Dam Municipal Water District (PDMWD) and sufficient water supplies would be available to serve the proposed project (Appendix O3, Water Supply Assessment). The potable water system for the proposed project would include transmission and distribution pipelines, two storage reservoirs, and two pump stations. The proposed water system would be designed to provide a minimum of 2,500 gallons per minute for 2 hours of fire flow with fire hydrants spaced on average every 300 feet, consistent with the SFD hydrant spacing requirements (City of Santee 1991). For more detail regarding the fire flow requirements for the proposed project, refer to Section 4.17, Utilities and Service Systems. The proposed water system would be a public water system throughout the project site, designed and installed per PDMWD and SFD requirements. PDMWD provided a water availability/will serve form to the proposed project (Appendix P1).

As discussed in Section 4.18.5.2, the proposed project would implement construction measures outlined in the CFPP to avoid construction-related wildfire impacts from installation of potable water supply infrastructure. These measures would include but not be limited to having adequate water available to serve construction activities and providing proper wildfire awareness, reporting, and suppression training to construction personnel. Maintenance of potable water supply infrastructure would adhere to policies proposed in the FPP, including implementation of fuel treatment areas along project streets and fire-safe maintenance practices (Appendix P1). In addition, water storage reservoirs and access roads would have minimum 3-foot-wide FMZs on either side. The potable water storage reservoirs would also serve as emergency water storage facilities. Fire hydrants would be spaced along Fanita Parkway, Cuyamaca Street, and Magnolia Avenue per the SFD design standards. Fire hydrant spacing on neighborhood street would be 300 feet apart. Therefore, installation and maintenance of the proposed potable water supply system would not exacerbate wildfire risk. Impacts would be less than significant.

### ***Sanitary Sewer System Management***

PDMWD would provide sanitary sewer service for the proposed project. A new gravity sewer system, consisting of 8-inch, 10-inch, and 12-inch pipes, would be constructed on the site to collect and convey wastewater to a 15-inch trunk sewer. Ultimately, the wastewater would be conveyed by a gravity system west of Orchard Village on PDMWD property through a 15-inch diameter pipe to a headworks facility that would provide screening and grit removal for the proposed project's sanitary flows or would be conveyed by gravity to the existing 18-inch and 24-inch City of San Diego Metropolitan Wastewater Interceptor. The new gravity sewer system would be installed to existing code standards and PDMWD requirements. As discussed in Section 4.18.5.2, the proposed project would implement construction measures outlined in the CFPP to avoid construction-related wildfire impacts from installation of sanitary sewer system infrastructure. These measures would include but not be limited to having adequate water available to serve construction activities and providing proper wildfire awareness, reporting, and suppression training to construction personnel. Maintenance of sanitary sewer system infrastructure would adhere to policies proposed in the FPP, including implementation of fuel treatment areas along project streets and fire-safe maintenance practices (Appendix P1). Therefore, with implementation of the measures described previously, the installation and maintenance of the proposed sanitary sewer system would not exacerbate wildfire risk. Impacts would be less than significant.

### ***Stormwater Management***

The proposed project would install a series of swales, catch basins and culverts that direct stormwater to hydromodification/water quality basins. Operation of these stormwater features are static, do not generate heat/sparks, and would not impede site access or otherwise hinder evacuation or emergency response efforts. As discussed in Section 4.18.5.2, the proposed project would implement construction measures outlined in the CFPP to avoid construction-related

wildfire impacts from installation of stormwater management infrastructure. These measures would include but not be limited to having adequate water available to serve construction activities and providing proper wildfire awareness, reporting, and suppression training to construction personnel. Maintenance of stormwater management infrastructure would adhere to policies proposed in the FPP, including implementation of fuel treatment areas along project streets and fire-safe maintenance practices (Appendix P1). Therefore, with implementation of the measures listed above, installation and maintenance of the proposed stormwater management features would not exacerbate wildfire risk. Impacts would be less than significant.

### ***Electrical Power and Natural Gas Infrastructure***

The proposed project power and natural gas lines would be installed below ground. During construction activities associated with electrical power and natural gas line undergrounding, the proposed project would implement construction measures outlined in the CFPP to avoid construction-related wildfire impacts from installation of underground power and natural gas line infrastructure. These measures would include but not be limited to having adequate water available to serve construction activities and providing proper wildfire awareness, reporting, and suppression training to construction personnel. Maintenance of underground power and natural gas line infrastructure would adhere to policies proposed in the FPP, including implementation of fuel treatment areas along project streets and fire-safe maintenance practices (Appendix P1). Because the proposed project power and natural gas lines would be below ground, operation of the power lines would not exacerbate wildfire risk. Therefore, with implementation of the mitigation measures listed previously, the installation and maintenance of the proposed electrical and natural gas infrastructure would not exacerbate wildfire risk. Impacts would be less than significant.

### ***Fire Protection Infrastructure***

The proposed project would designate a 1.5-acre site for a new fire station, apparatus, and trained firefighters in Fanita Commons to serve the project site and ensure adequate emergency response times. A temporary or permanent on-site fire station would be operational prior to the first residential occupancy, and a permanent station would be operational in accordance with the approved Development Agreement. Additional fire protection infrastructure would include installation of a fire hydrant network, a dedicated fire water pipeline system to provide adequate fire flow to the project site, and fire department hose connections throughout the project site. Water reservoirs would also serve as emergency water storage. These features are static, do not generate heat or sparks, and would not impede site access or otherwise hinder evacuation or emergency response efforts. The availability of the on-site fire suppression network and water supply would reduce potential wildfire impacts.

As discussed in Section 4.18.5.2, the proposed project would implement construction measures outlined in the CFPP to avoid construction-related wildfire impacts from installation of fire

protection infrastructure. These measures would include but not be limited to having adequate water available to service construction activities and providing proper wildfire awareness, reporting, and suppression training to construction personnel. Maintenance of fire protection infrastructure would adhere to policies proposed in the FPP, including implementation of fuel treatment areas along project streets and fire-safe maintenance practices (Appendix P1). Therefore, installation and maintenance of the proposed fire protection infrastructure would not exacerbate wildfire risk. Impacts would be less than significant.

### ***Fuel Modification Zones***

Fuel modification for the proposed project would be implemented along the entire exterior perimeter, roadways, and interior landscaped areas adjacent to natural Open Space. FMZs are passive measures and would not impede site access or otherwise hinder evacuation or emergency response efforts. Presence of FMZs would reduce fuel volumes, moderate fire behavior near structures, and reduce potential wildfire impacts. Fuel modification in the proposed project would be governed by the FPP (Appendix P1). FMZs would be designated depending on location. Vegetation management would be completed twice per year. Property owners and private lot owners would be responsible for vegetation management on their lots. Open Space would be owned, maintained and managed by the HOA in compliance with the FPP.

Installation of FMZs would not result in additional temporary or permanent impacts beyond those identified in this EIR. Vegetation management requirements during construction would be implemented at commencement and throughout each construction phase. Vegetation management would be performed pursuant to the FPP and the SFD requirements on building locations prior to the start of work and prior to any import of combustible construction materials. Adequate fuel breaks, as approved by the SFD, would be created around grading, site work, and other construction activities in areas where there is flammable vegetation. Fuel breaks would range between 50 and 150 feet around grading activities, depending on available space.

Maintenance of FMZs may require heat- or spark-generating equipment; however, the proposed project would implement fire-safe maintenance practices and fuel treatment areas detailed in the CFPP and FPP to avoid wildfire impacts (Appendix P1). These measures would include but not be limited to having adequate water available to service construction activities and providing proper wildfire awareness, reporting, and suppression training to construction personnel. Additionally, the proposed project would exceed fire prevention regulations by providing a CFPP, code-exceeding FMZs, FMZ inspections, fire-resistant landscaping plan, and HOA wildfire education and outreach. Refer to Tables 7 and 8 in the FPP for a full list of project fire safety features (Appendix P1). Therefore, installation and maintenance of the proposed FMZs would not exacerbate wildfire risk. Impacts would be less than significant.



### ***On- and Off-Site Roadway Improvements***

The proposed project would improve and construct new segments of three of the Santee General Plan Mobility Element streets: Fanita Parkway, Cuyamaca Street, and Magnolia Avenue. Improvements would also occur at the terminus of Carlton Hills Boulevard and at existing dead-end streets that terminate at the project site boundary.

Roadway improvements would also include construction of new internal systems of public and private streets. Residential collector streets of various types would connect the three villages. East of Cuyamaca Street, two residential collectors (Street “V” and Street “W”) would provide access to Vineyard Village. Residential streets would include conventional two-way streets with parallel parking and 5-foot-wide sidewalks on both sides. In certain areas of the proposed development, split residential streets would occur. Split residential streets would be one-way streets separated by a median or park with parallel parking and 5-foot-wide sidewalks on both sides. Private streets would be composed of local two-way streets with parallel parking and a 5-foot-wide sidewalk on one side and a 5-foot-wide street tree easement on the other side. Private driveways are anticipated in Orchard Village.

All on- and off-site roadway improvements would adhere to the construction measures outlined in the CFPP and FPP to reduce risk of ignition from construction activities (Appendix P1). These measures would include but not be limited to having adequate water available to service construction activities and providing proper wildfire awareness, reporting, and suppression training to construction personnel. Maintenance of on- and off-site roadways would adhere to policies proposed in the FPP, including implementation of fuel treatment areas along project streets and fire-safe maintenance practices (Appendix P1). Therefore, installation and maintenance of proposed on- and off-site roadway improvements would not exacerbate wildfire risk. Impacts would be less than significant.

### **Mitigation Measures**

The proposed project would have a less than significant impact; therefore, no mitigation is required.

#### **4.18.5.4 Threshold 4: Flooding or Landslides**

***Would the proposed project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope stability, or drainage changes?***

**Impact:** 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 stability, or drainage changes.

**Mitigation:** No mitigation is required.

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

**Significance After Mitigation:** Less than significant.

## Impact Analysis

Wildfires can greatly reduce the amount of vegetation from hillsides. Plant roots stabilize the soil and aboveground plant structures slow water, allowing it to percolate into the soil. Removal of surface vegetation as a result of a wildfire reduces the ability of the soil surface to absorb rainwater and can allow for increased runoff that may include large amounts of debris. If burned or exposed soil conditions exist post-fire, the rate of surface water runoff is increased as water percolation into the soil is reduced. The potential for surface runoff and debris flows increases significantly for areas recently burned by large wildfires (Moench and Fusaro 2012).

As presented in Section 4.6, slope failures, mudflows, and landslides are common in areas where steep hillsides and embankments are present, and such conditions would be exacerbated in a post-fire environment where vegetative cover has been removed. The proposed project's hillsides are moderately steep in many areas and may be susceptible to erosion, landslides, and debris flow, particularly following wildfire. However, CAL FIRE mapping data indicates low to moderate erosion potential on the proposed project's hillside areas (Appendix P1). Areas of low erosion potential on the proposed project site are associated with lower elevations where proposed development is concentrated. Erosion potential increases on the slopes surrounding the proposed development area.

However, the irrigated and maintained landscaping in the proposed project would be ignition resistant and not expected to be burned or removed entirely should a fire occur on the project site, unlike post-fire conditions in native vegetation where complete removal is common. Considering these project site features and characteristics, post-fire conditions are not expected to increase risks associated with runoff and erosion. As discussed in Section 4.9, Hydrology and Water Quality, the proposed project would conform to design requirements associated with proper site preparation and grading practices and would implement surface drainage improvements and erosion-control measures and construction best management practices (BMPs). During construction, BMPs would be implemented throughout work areas in quantities and design as necessitated by grade and conditions. Areas of non-native vegetation and unvegetated areas within the construction footprint would receive erosion-control BMPs. Construction BMPs (e.g., fiber rolls, gravel bags) would be used on and around the grading operations as specified in the stormwater pollution prevention plan to stabilize graded slopes. In addition, the proposed project does not propose development in areas adjacent to existing structures or people. The proposed development would not occur below slopes that are not stabilized or manufactured; therefore, the risk of a landslide would be low.

The proposed project's slopes would manage runoff through various required measures and BMPs designed specifically to shed water from slopes in a controlled manner. The proposed project would install interceptor drainage ditches on hillsides throughout the developed areas to deliver upland surface runoff around buildings, retaining walls, roadways, and other built structures. To manage potential debris flows and landslide impacts, water quality and detention basins are also proposed at

locations adjacent to proposed development sites. The water quality and detention basins would be constructed adjacent to proposed roadways, parking lots, or maintenance paths to facilitate inspection and maintenance. Implementation of these project features would minimize potential flooding, runoff, or slope instability impacts that may occur post-fire. Therefore, potential impacts associated with post-fire flooding, runoff, or slope instability would be less than significant.

## Mitigation Measures

The proposed project would have a less than significant impact; therefore, no mitigation is required.

### 4.18.6 Cumulative Impacts and Mitigation Measures

*Would implementation of the proposed project have a cumulatively considerable contribution to a cumulative wildfire impact considering past, present, and probable future projects?*

Cumulative Impact	Significance	Proposed Project Contribution
<b>Threshold 1:</b> Emergency Response Plan or Evacuation Plan	Less than significant	Not cumulatively considerable
<b>Threshold 2:</b> Pollutant Concentrations	Less than significant	Not cumulatively considerable
<b>Threshold 3:</b> Installation or Maintenance of Associated Infrastructure	Less than significant	Not cumulatively considerable
<b>Threshold 4:</b> Flooding or Landslides	Less than significant	Not cumulatively considerable

#### 4.18.6.1 Cumulative Threshold 1: Emergency Response Plan or Evacuation Plan

This cumulative impact has been adequately addressed in Section 4.8 under Section 4.8.6.6. The geographic context for the analysis of cumulative impacts regarding impairing an emergency response plan or evacuation plan is the areas in the City surrounding the project site, where these plans would apply. Cumulative impacts from multiple projects within the SFD’s jurisdiction can cause fire response service decline and impede emergency evacuation plans. For example, several cumulative projects presented in Table 4-2, Cumulative Projects, in Chapter 4, Environmental Impact Analysis, are projects within the SFD’s jurisdiction that would have the potential to result in impacts to emergency response and evacuation plans. These projects include the GA Development subdivision, Carlton Oaks Country Club, Walker Trails, and others. Development of the proposed project, in combination with these cumulative projects, would result in a potentially significant cumulative impact if it is not consistent with the County’s Emergency Operations Center emergency response plans and evacuation plans, including the City’s Emergency Operations Plan.

As discussed in Section 4.18.5.1, an FPP, a CFPP, and a Wildland Fire Evacuation Plan were prepared for the proposed project to ensure the community would be built to withstand significant fire, provide residents with at least two evacuation routes that lead to at least three major arteries, and offer the

contingency option to emergency planners and responders of temporarily refuging persons on site if considered safer than evacuating (Appendices P1 and P2). The proposed project Wildland Fire Evacuation Plan was developed to meet City and County requirements and prevent any conflicts with current evacuation plans. Details of the emergency access routes are described in the Wildland Fire Evacuation Plan (Appendix P2) prepared for the proposed project and were designed to comply with current and future population growth, roadway conditions, and access availability.

Furthermore, the only proposed through routes on the project site would loop between Fanita Parkway and Cuyamaca Street and would not, in combination with other projects, affect emergency response and evacuation plans elsewhere in the City. The project streets configuration and evacuation plan outlined in the Wildland Fire Evacuation Plan (Appendix P2) provides evacuation routes to the north (once off site), south, east, and west depending on the nature of the emergency. The roadways and evacuation routes designed for the proposed project would provide connections to major regional transportation corridors, including indirectly to SR-52 to the south, southwest, and southeast; SR-67 to the east and northeast; I-125 to the south; and I-15 to the west, to move residents out of the City, avoiding conflicts with emergency response or evacuation efforts in other areas of the City. Additionally, it is anticipated that future development projects would undergo CEQA review of potential impacts on adopted emergency response or evacuation plans, and would be required to implement measures necessary to mitigate potential impacts. As a result, cumulative impacts related to interference with adopted emergency response or evacuation plans would be less than significant. Therefore, the proposed project would not contribute to a significant cumulative impact associated with a conflict with an adopted emergency response or evacuation plan.

#### **4.18.6.2 Cumulative Threshold 2: Pollutant Concentrations**

The geographic context for the analysis of cumulative impacts in regard to exacerbating wildfire risks and exposing project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire is the project site and immediately surrounding area where the effects of potential pollutant exposure could occur. Cumulative impacts from multiple projects or large projects within the immediate area could exacerbate wildfire risk by exposing occupants to harmful pollutants, primarily during construction. For example, several cumulative projects presented in Table 4-2 in Chapter 4 are immediately adjacent to the project site that would have the potential to result in impacts to occupants from exposure to pollutant concentrations from a wildfire as a result of exacerbated fire risk. These projects include the GA Development subdivision, Santee View Estates, Calvary Chapel, and others. Similar to the proposed project, these cumulative projects would be required to comply with the latest ignition-resistant building codes found in Chapter 7A of the California Building Code, as adopted by City, and any additional restrictions or requirements adopted locally by the SFD.

The proposed project's FPP (Appendix P1) contemplated the slope and wind conditions of the project site and designed fire protection features that are site specific and focused on protecting the proposed project's buildings and residents while simultaneously minimizing the likelihood for on-site fire to burn off site into open space. As discussed in Section 4.18.5.2, the proposed project's fire protection features identified in the FPP would reduce potential impacts related to project occupant wildfire exposure due to slope, prevailing winds, and other factors.

As discussed in Section 4.18.5.2, the proposed project would use pre-planning techniques and construction measures, including implementing a CFPP (Appendix P1), providing proper wildfire awareness, reporting, and suppression training to construction personnel, which would avoid any construction-related wildfire impacts. In addition, the proposed project would be designed to adhere to the most recent ignition-resistant building codes applicable to developments in VHFHSZs, including defensibility features, fire protection systems, and emergency access routes. Therefore, cumulative projects, including the proposed project, would be constructed and designed to minimize wildfire risk and would not exacerbate wildfire risk resulting in the exposure of project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire. A significant cumulative impact would not occur, and the proposed project's contribution would not be cumulatively considerable.

#### **4.18.6.3 Cumulative Threshold 3: Installation or Maintenance of Associated Infrastructure**

The geographic context for the analysis of cumulative impacts from the project requiring the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment is the project site and immediately surrounding area. Cumulative impacts from multiple projects or large projects within the immediate area could exacerbate wildfire risk and expose occupants to environmental impacts from the infrastructure required to serve these projects. For example, several cumulative projects presented in Table 4-2 in Chapter 4 are projects located immediately adjacent to the project site that would have the potential to result in impacts from installation or maintenance of infrastructure that may exacerbated fire risk. These projects include the GA Development subdivision, Santee View Estates, Calvary Chapel, and others. Due to their proximity, an impact could occur if all of these projects were to install infrastructure that would exacerbate fire risk.

New infrastructure associated with the proposed project and other cumulative projects would be required to comply with the necessary regulations to minimize fire risks. These regulations include the Santee Municipal Code (Ordinance No. 570, Chapter 11.18, California Fire Code) or the current fire and building codes at the time of Vesting Tentative Map approval; the 2019 California Building Code, Chapter 7A; 2019 California Fire Code, Chapter 49; 2019 California Referenced Standards Code Chapter 1-7A; and 2019 California Residential Code, Section R327, as adopted by the City. These regulations require projects to construct ignition-resistant structures and provide FMZs, fire

apparatus access, water availability, and other requirements. In addition, the proposed project would exceed fire prevention regulations by providing a CFPP, code-exceeding FMZs, FMZ inspections, fire-resistant landscaping plan, and HOA wildfire education and outreach. Refer to Tables 7 and 8 in the FPP for a full list of project fire safety features (Appendix P1). Therefore, cumulative projects, including the proposed project, would not result in a significant cumulative impact associated with exacerbated fire risk from the installation or maintenance of infrastructure. The proposed project's contribution would not be cumulatively considerable.

#### **4.18.6.4 Cumulative Threshold 4: Flooding or Landslides**

The geographic context for the analysis of cumulative impacts that would 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, is the proposed project site and immediate surrounding area. Several cumulative projects in Table 4-2 in Chapter 4 are projects in the areas immediately surrounding the project site, such as the GA Development subdivision, Santee View Estates, Calvary Chapel, and others. Due to their proximity, a cumulative impact could occur if post-fire conditions, such as hillside instability on the project site or surrounding areas, caused a landslide or flooding to occur.

Construction of projects considered in the cumulative analysis would involve grading and other earthmoving activities that could result in temporary and short-term localized soil erosion or landslides. However, these site-specific impacts are not expected to combine with the effects of other surrounding project activities because cumulative projects would be required to comply with existing regulations, including adherence to stormwater management requirements, and associated BMPs. These required measures would control erosion and construction-related contaminants at each construction site.

After buildout, the irrigated and maintained landscaping in the proposed project would be ignition resistant and not expected to be burned or removed entirely should a fire occur on the proposed project site. Project development and associated design features would reduce the likelihood of flooding or landslides prior to or following a fire event because complete removal and exposure of erodible soils would be unlikely to occur. Considering these project site features and characteristics in combination with adherence to existing regulations, compliance with stormwater management requirements, and associated BMPs, post-fire conditions on the project site are not expected to combine with other cumulative projects and increase risks associated with runoff and erosion. Therefore, the proposed project impacts related to flooding or landslides as a result of fire would not be cumulatively considerable.

#### **4.18.7 Comparison of Proposed Project to 2007 Project**

The previously approved project (Barratt American Project) prepared an FPP in 2007. As part of the preparation of the currently proposed project's FPP, the 2007 FPP and subsequent court rulings

were reviewed. The currently proposed project's FPP evaluated the site's fire behavior and made important project design changes to address the identified hazards. Table 4.18-1 identifies the currently proposed project's fire protection features compared to the 2007 Barratt American Project. The currently proposed project's FPP requires customized, enhanced fire protection features that are more robust than the 2007 FPP. The result is a fire protection system that includes redundancies so that no single feature is relied on for fire protection and all features work together to provide a fire-adapted community. For more detailed information, refer to Section 9 of the FPP (Appendix P1).

**Table 4.18-1. Proposed Project Fire Protection Features Compared to 2007 Fire Protection Plan**

Fire Protection Features	Proposed Project	2007 FPP
FMZs	115 to 165 feet	100 to 130 feet
Roadside Fuel Modification	30 to 50 feet	Up to 20 feet
Fuel Modification for Existing Residences	100 feet required along project boundary with existing neighborhoods	Not required
Site Landscaping	Site-wide restrictions on flammable species	Fire-resistive landscaping
Fire-Resistive Landscape Plans	Plan check by qualified landscape plan checker required	No plan check required
Fuel Modification Zone Inspections	Two inspections annually	No inspections required
Preserve Area Fuels Management	Not proposed/necessary	Proposed
Ignition-Resistant Construction	Required with additional enhancements	Required
Interior Automatic Sprinklers	Required	Required
Evacuation Plan	Provided	Not provided

**Source:** Appendix P1.

**Notes:** FMZ = Fuel Modification Zones; FPP = Fire Protection Plan

#### 4.18.8 References

CAL FIRE (California Department of Forestry and Fire Protection). 2018. Strategic Fire Plan for California. August 22. Accessed May 2020. [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).

CAL FIRE. 2019. 2018 Statistics and Events – Fire Statistics. Accessed May 2020. <https://www.fire.ca.gov/stats-events/>.

City of Santee. 1991. Public Works Standards. Updated February 1988, reprinted September.

City of Santee. 2003. Santee General Plan. Adopted August 27.

City of Santee. 2010. Emergency Operations Plan.

County of San Diego. 2018. Unified San Diego County Emergency Services Organization and County of San Diego. Operational Area Emergency Operations Plan – Annex Q: Evacuation. September. Accessed May 2020. [https://www.sandiegocounty.gov/content/dam/sdc/oes/emergency\\_management/plans/op-area-plan/2018/2018-Annex-Q-Evacuation.pdf](https://www.sandiegocounty.gov/content/dam/sdc/oes/emergency_management/plans/op-area-plan/2018/2018-Annex-Q-Evacuation.pdf).

- FRAP (Fire and Resource Assessment Program). 2018. California Department of Forestry and Fire Protection. Accessed May 2020. <https://frap.fire.ca.gov/>.
- IBHS (Institute for Business and Home Safety). 2008. Megafires: The Case for Mitigation.
- Moench, R., and Fusaro, J. 2012. Soil Erosion Control after Wildfire. Factsheet No. 6.308. Colorado State University Extension. Accessed May 2020. [https://mountainscholar.org/bitstream/handle/10217/183596/AEXT\\_063082012.pdf?sequence=1&isAllowed=y](https://mountainscholar.org/bitstream/handle/10217/183596/AEXT_063082012.pdf?sequence=1&isAllowed=y).
- NOAA (National Oceanic and Atmospheric Administration). 2007. NOAA Watch Wildfires in Southern California 2007. Accessed May 2020. <https://www.ncdc.noaa.gov/sotc/fire/200710>.
- Smalley, J. 2008. “Wildfires and Climate Change: An American Perspective on a Global Issue.” Fire Interdisciplinary Research on Ecosystem Services (Seminar). June 24. Accessed May 2020. [http://www.fires-seminars.org.uk/downloads/seminar2/smalley\\_public\\_keynote.pdf](http://www.fires-seminars.org.uk/downloads/seminar2/smalley_public_keynote.pdf).