4.18 Wildfire

The prior Wildfire Section has been replaced in its entirety and revised in this section to address the deficiencies found in the evacuation analysis identified in the trial court's ruling. This revised Wildfire Section presents the results of the evacuation analyses and modeling completed for the proposed project. The revised Wildfire Section also clarifies and corrects evacuation routes available to project occupants and the surrounding community, including adding back into the project the Magnolia Avenue extension from its existing terminus at Princess Joann Road to Cuyamaca Street as an available evacuation route. This revised section further explains that Mast Boulevard does not directly connect to SR-67 to the east but is available as an evacuation route through the use of several connecting streets (Figure 4.18-1, Evacuation Routes).

Wildfire and evacuation-related threshold criteria set forth in Appendix G of the California Environmental Quality Act (CEQA) Guidelines have been included in this revised Wildfire Section. In response to the trial court's ruling, this revised section specifically evaluates the significance criterion, namely whether the project would "[e]xpose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires."

The Fire Protection Plan (FPP) in Final Revised Environmental Impact Report (EIR) Appendix P1, prepared by Dudek (2022), has been replaced in its entirety and revised to address the deficiencies in the evacuation analysis identified in the trial court's ruling. In response to the trial court's ruling, Appendix P1 now includes analysis of whether the project would "[e]xpose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires."

Appendix P2, Wildland Fire Evacuation Plan, has been replaced in its entirety and revised to address the deficiencies in the evacuation analysis identified in the trial court's ruling. In response to the trial court's ruling, Appendix P2 includes modeling of reasonable evacuation scenarios to address whether those seeking to be evacuated are able to do so and to demonstrate that the City fully considered the implications of project occupants' and the surrounding community's ability to safely evacuate in a wildfire event. Appendix P2 also clarifies and corrects evacuation routes available to project occupants and the surrounding community, including adding back into the project the Magnolia Avenue extension from its existing terminus at Princess Joann Road to Cuyamaca Street as an available evacuation route. Appendix P2 explains that Mast Boulevard does not directly connect to SR-67 to the east but is available as an evacuation route through the use of several connecting streets.

The City's Emergency Operations Plan (EOP) and Chen Ryan Associates' Fire Evacuation Analysis – Technical Memorandum are included in Appendix P2.

Appendix Q is a new appendix containing the trial court ruling, judgment, and writ of mandate.

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. Section 4.10, Land Use and Planning, describes the surrounding and on-site land uses. In addition, the proposed project's revised FPP (Appendix P1) describes how topography influences fire risk and includes a brief description of the project's topography in relation to wildfire risk.

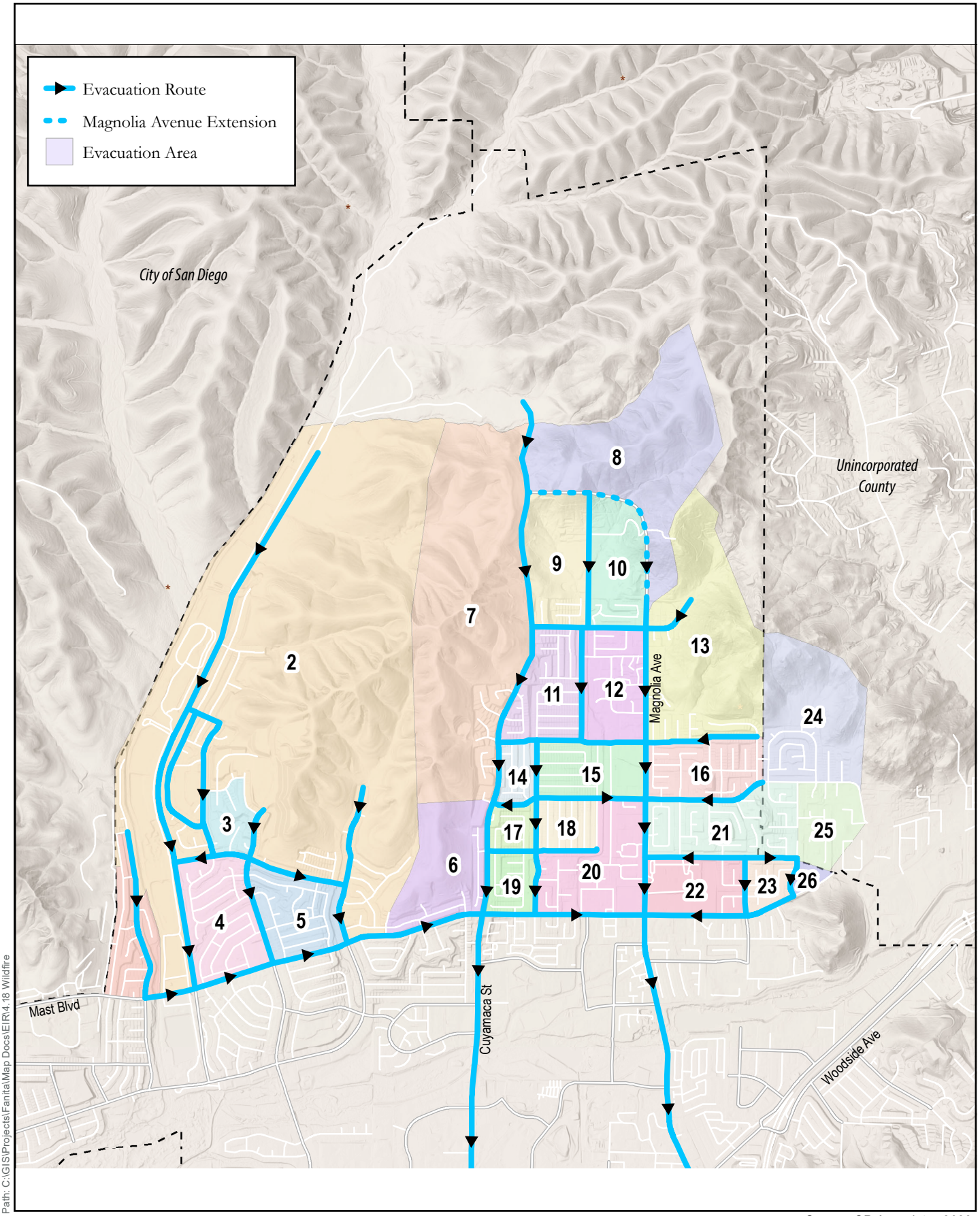
4.18.1.1 Climate

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 (ºF). 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 92ºF 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 mapped by biologists and included in Appendix D, Biological Resources Technical Report. The proposed 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.



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Source: CR Associates 2022.

Harris & Associates

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Figure 4.18-1

Evacuation Routes

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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 the 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 20th 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, 15 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 California 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). Notably, roughly 70 percent of San Diego County is designated as VHFHSZ. The areas that have not received this designation are primarily the urbanized areas. The

fact that an area is designated as a VHFHSZ does not preclude development, but indicates that additional measures are required to address the increased likelihood of wildfire.

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 EOP 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 City's EOP was 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 Santee Fire Department (SFD) and San Diego County Sheriff's Department (SDCSD) 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 SDCSD, 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.

4.18.3 Thresholds of Significance

Appendix G of the CEQA Guidelines, Section IX, Hazards; Section XV, Public Services; Section XVII, Transportation; and Section XX, Wildfire, set forth significance criteria for wildfire-related impacts, including fire protection. In summary, the significance criteria are as follows:

- **Threshold 1:** Substantially impair an adopted emergency response plan or emergency evacuation plan (see also Threshold 5, below).
- **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.
- **Threshold 5:** Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- **Threshold 6:** Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.
- **Threshold 7:** Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection.
- **Threshold 8:** Result in inadequate emergency access.

4.18.4 Method of Analysis

This section 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, including, among other topics, the analysis of wildfire risk from adding new project residents (see Appendix P1). 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 Appendix P1 and 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 (including impair implementation of or physical interfere with such adopted plans)?

Impact: Implementation of the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan, nor impair implementation of or physically interfere with such adopted plans.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

This threshold was previously addressed in Section 4.8, Hazards and Hazardous Materials, under Section 4.8.5.6. This EIR section replaces and revises that discussion in its entirety herein.

The proposed project's Wildland Fire Evacuation Plan (Appendix P2) was prepared based on the 2018 Unified San Diego County Emergency Services Organization and County of San Diego Operational Area (OA) Emergency Operations Plan (County EOP), its Evacuation Annex Q (Evacuation Annex Q), and the 2020 City of Santee Emergency Operations Plan (City EOP), which references the County EOP for purposes of evacuation planning. These plans provide a framework for implementing well-coordinated emergency response and evacuations between many agencies, organizations, and jurisdictions. In the event of a wildfire or other emergency, the agencies follow these pre-plans and utilize experience, situational awareness, and available resources to move people from areas of higher, to areas of lower, potential risk.

The proposed project would provide supplemental project-specific information to these plans and inform area residents of what they can anticipate during an evacuation event. In the event of an actual wildfire emergency, law enforcement and fire agencies charged with managing evacuations likely would not refer to a project-specific evacuation plan but would rely on the protocols established by these pre-plans (EOPs and Evacuation Annex Q) as a "playbook" to use for guiding anticipated evacuation timeframes under the most probable scenarios. In an actual wildfire emergency, unified command would take into account numerous factors including wind speeds and direction, humidity, topography, fuel loading, emergency access routes, evacuation routes, shelter-in-

place options, time needed to evacuate, fire-hardening of structures (or lack thereof), and other variables, and issue specific evacuation or shelter-in-place directives consistent with the process and protocols outlined in the City and County's EOPs.

However, the proposed project's Wildland Fire Evacuation Plan (Appendix P2) acts as a site-specific supplement to the EOPs, describing the "playbook" for evacuation of the project site based on and consistent with the County and City EOPs.

During the project's construction phase, appropriate actions would be implemented to maintain evacuation routes so that they are available if needed. Temporary road closures or detours during construction would be coordinated with SFD and others, as necessary, and an alternate route provided so that evacuations and emergency responses would not be significantly impacted.

The project site is located within the SFD's jurisdiction with the closest existing station (Fire Station 5) located at 9130 Carlton Hills Drive in the City of Santee. Fire department response from Fire Station 5 to the furthest lot in the northeast corner of Orchard Village was calculated at 9 minutes and 49 seconds, according to the Insurance Service Office travel time formula. The City of Santee's Quality of Life Standard encourages all new development to be located within the response time of 6 minutes or less 90 percent of the time from the closest fire station responsible for serving the parcel. Accordingly, the Fanita Ranch project proposes to include a new fire station, which is analyzed in the EIR (Fire Station 20). The new fire station would be fully staffed and equipped to operate 24 hours a day, 7 days a week. The new fire station would be able to respond to all of the proposed project's buildable lots within a 4-minute travel time, compliant with the City's goal of 6 minutes or less. Additionally, an off-site fire force (3 engines, 14 firefighters, and battalion chief) would be able to be on site within 8 minutes to assist the initial response. Providing a new fire station would assist in, not impair, emergency response.

The project would meet or exceed the Code requirements for access roads, including the 2019 California Fire Code, Appendix D and Santee's local amendments to the California Fire Code. The proposed project would provide internal roads for emergency access and evacuation access throughout the site. Internal streets would provide residents the option to evacuate from at least two points in two different directions from each neighborhood. The roadways are designed to meet or exceed Fire Code requirements, including unobstructed travel lane widths consistent with the Fanita Ranch Development Plan standards, unobstructed travel lanes, adequate parking, 28-foot inside radius, grade maximums, and signals at intersections. Two external points of ingress/egress are provided to/from the project – Fanita Parkway and Cuyamaca Street – which can be used for a combination of evacuation and emergency access. These two routes would lead to three main arteries traveling south off site (Fanita Parkway, Cuyamaca Street, and Magnolia Avenue) and numerous east/west connections off site during an emergency evacuation event. The project would

not cut off or impair existing evacuation routes. It would also provide roadway improvements to improve existing evacuation conditions.

The internal roadways from the residences to existing and planned off-site travel routes would be fuel-modified passageways. Project access roads that traverse areas of natural vegetation (consistent with current fuels) would provide a minimum of 50 feet of modified fuel areas along both sides of the road. These 50-foot buffers would reduce ignitions from vehicle-related causes (catalytic converter, brake-related, tossed cigarette, etc.) and provide a set back from wildland fuels.

The project's Wildland Fire Evacuation Plan (Appendix P1) is consistent with the County EOP and City EOP, which serve as the roadmap for emergency response, including wildfire emergencies in Santee. In response to the trial court's ruling, the Fanita Ranch Wildland Fire Evacuation Plan provides important population, education and preparedness information and a sophisticated evacuation modeling approach. The modeling and analysis portion of the Wildland Fire Evacuation Plan focus on ensuring the project and surrounding community can be evacuated within a reasonable time frame and that contingency plans are available to emergency managers. Wildfire evacuations from the site would be focused on early relocation from the project site long before a fire would threaten the project or its access routes.

Evacuations would follow the "Ready, Set, Go!" model, which is the model adopted by most emergency agencies in California. Fanita Ranch would provide emergency decision makers with the contingency option of temporarily refuging people on site, in their homes, at the designated Village core areas, or other protected spaces that would be available in the project's developed areas. These areas may be determined to be safer than evacuating in some fire scenarios.

A condensed version of the Wildland Fire Evacuation Plan would be provided to homeowner's, renters, business owners and employees, and other persons regularly at the project site. In addition, the Wildland Fire Evacuation Plan would be posted on the community's website with regular reminders so that all residents are aware of the evacuation routes, of the fluidity of wildfire events, and of the options (including evacuation routes, temporarily sheltering on site) that may be presented to them by responding law enforcement and/or fire personnel, Reverse 911, or other officials. An annual evacuation awareness program would be conducted as well as on-line access to fire awareness educational material on the communities' website.

In addition to these emergency response and evacuation-specific actions, the project would incorporate redundant measures to improve fire prevention and defensibility at the project site and adjacent properties, which would improve the Fire Department's ability to respond to and extinguish fires promptly in order to keep them from spreading. While these measures do not directly address emergency response and evacuation, they show the numerous features that would reduce the need for emergency response and evacuation in the first place.

Based on the reasons described above, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

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 (including impairing implementation of or physically interfering with such adopted plans). 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

As stated, 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 construction equipment (e.g., tractors, graders, bulldozers, trucks, etc.) or other small gas-powered equipment (e.g., 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 FPP (Appendix P1), prepared in compliance with the requirements of the Santee Municipal Code and Ordinances, 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). Further, the project's Construction Fire Prevention Plan (CFPP) (Appendix P1) provides guidance for such management and pre-planning for Fanita Ranch to increase the probability that any construction-cause fires are prevented or extinguished promptly.

Additionally, the proposed project would use construction measures as identified in the FPP to avoid construction-related wildfire impacts. These measures include having adequate water available to service construction activities, implementing the CFPP and the FPP provisions (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 Ordinances, 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 described further below. For greater detail see Appendix P1 (FPP).

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, 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 assessments of structure losses and saves 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 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 the FPP (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. The project's FMZs would be extensive and include code-exceeding 115-to-165-foot-wide FMZs, up to 50 feet of roadside FMZ and provisions for a 100-foot wide FMZ adjacent to neighboring residential areas to the south. To ensure that the FMZs are installed correctly and maintained in perpetuity, they would be initially inspected by a third-party landscape plan reviewer and then inspected twice per year 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 4.18-2, Fire Management Zones Plan, for a depiction of the various fire management conditions on the project site.

Ignition Sources

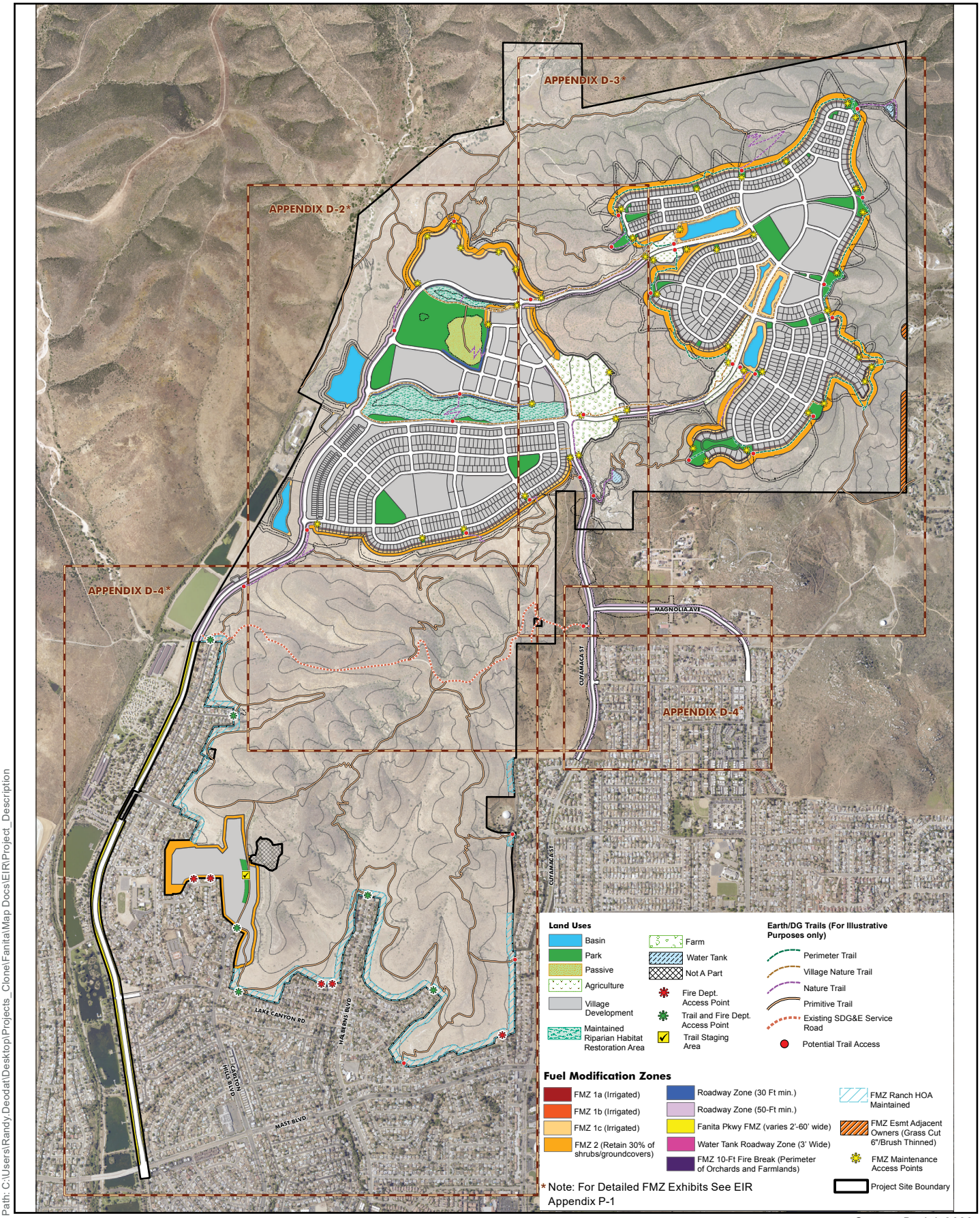
The types of potential ignition sources that currently exist in the project area include overhead power lines, vehicles, roadways (SR-67), and off-site residential neighborhoods. The proposed project would introduce potential ignition sources, particularly more people in the area. While it is true that humans are the cause of most fires in California, equipment and powerlines are the predominant human fire causes in San Diego County, followed by roadway ignitions (Romero-Calcerrada et al. 2008). There is no data available that links increases in wildfires with the development of ignition-resistant communities such as 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 would provide protections from on-site fire spreading to off-site vegetation. The landscape throughout the 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 project population would provide a heightened early wildfire detection network for the City and surrounding areas.

The proposed project would convert nearly 986 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 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. Once fires reach the FMZs, they would be expected to progressively reduce in intensity until starved of fuels, which would occur well away from the site's structures. Burning vegetation embers may land on project structures, but are not likely to result in ignition based on ember decay rates and the types of non-combustible and ignition-resistant construction materials that would comprise project buildings. 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).



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Fire Management Zones Plan

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Fire Protection Features that Lower Wildfire Ignition Risk

Each of the fire protection features provided as part of 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 FMZs around perimeter of proposed project.** The wide FMZs, between 115 and 165 feet wide, include 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 Ordinances) and 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 within 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

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 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 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 3 hours of fire flow for single-family and multi-family residential and 3,500 gallons per minute for 4 hours of fire flow for commercial areas 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 Development 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 (Appendix P1). 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 FMZ 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 the 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 3 hours of fire flow for single-family and multi-family residential and 3,500 gallons per minute for 4 hours of fire flow for commercial areas 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 streets 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. 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 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. 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 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 powerlines and natural gas lines would be installed below ground. During construction activities associated with electrical power and natural gas line undergrounding, the 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 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 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 City conditions. 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.

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 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 within the FPP (Appendix P1) 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 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; and 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).

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 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.

4.18.5.5 Threshold 5: Emergency Response and Evacuation Plans

Would implementation of the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact: The proposed project would not impair or interfere with an adopted emergency response or evacuation plan.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

The proposed project would have a significant impact if it were to interfere with the City's adopted EOP (2020). The City's EOP addresses the planned response to extraordinary emergency situations associated with natural and human-caused disasters. The plan describes the overall responsibilities of government entities, as well as the Santee Emergency Management Organization for protecting life and property in the City. In addition, the Unified San Diego County Emergency Services Organization and County Operational Area EOP – Evacuation Annex was formed in the 1960s to assist the cities and the County in developing emergency plans by providing strategies, procedures, recommendations, and organizational structures that can be used to implement a coordinated evacuation effort in the County Operational Area (County of San Diego 2018).

The project's Wildland Fire Evacuation Plan (Appendix P2) is based on the City's EOP. According to the SFD, the project would not interfere with current evacuation and emergency plans (Appendix M). Additionally, the project has developed new project-specific evacuation and emergency responses plans, including the FPP (Appendix P1) and Wildland Fire Evacuation Plan (Appendix P2).

The project's interior street network and the existing regional street system that it connects with would provide multi-directional primary and secondary emergency evacuation routes consistent with, or exceeding, most communities in this area (Appendix P2, Wildland Fire Evacuation Plan). Further, the only proposed through routes on the project site would loop between Fanita Parkway and Cuyamaca Street on site and would not affect emergency response and evacuation plans elsewhere in Santee. Consistent with County Operational Area EOP – Evacuation Annex (County of San Diego 2018), major ground transportation corridors in the area would be used as primary evacuation routes during an evacuation effort. The street systems were evaluated to determine the best routes for fire response equipment and "probable" evacuation routes for relocating people to designated safety areas.

The primary roadways that would be used for evacuation from the project site are Fanita Parkway and Cuyamaca Street, the latter of which would connect to the proposed extension of Magnolia Avenue. Note that the Magnolia Avenue extension would be constructed by the certificate of occupancy for the 1,500th equivalent dwelling unit. The available evacuation routes prior to the Magnolia Avenue extension (Fanita Parkway and Cuyamaca Street) would meet the 2019 California Fire Code, Appendix D, and the Santee Municipal Code and Ordinances for multiple access points; and, therefore, are considered adequate for emergency purposes for the interim period until the certificate of occupancy of the 1,500th equivalent dwelling unit. These streets 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). Refer to Figure 4.18-1 for a depiction of the Wildland Fire Evacuation Plan from the project site.

During an emergency evacuation from the project site, the primary and secondary roadways may serve as egress for those leaving the project site and as ingress for responding emergency vehicles. Because the roadways are designed to meet or exceed the County's Consolidated Fire Code requirements, including unobstructed travel lane widths consistent with the Fanita Ranch Development Plan standards, unobstructed travel lanes, adequate parking, 28-foot inside radius, grade maximums, signals at intersections, and extremely wide roadside FMZs, potential conflicts that could reduce the roadway efficiency are minimized, allowing for smooth evacuations. Additionally, the streets would provide residents the option to evacuate from at least two points in two different directions from each neighborhood.

The project site's primary evacuation routes would be accessed through a series of internal neighborhood roadways, which connect with the primary ingress/egress streets that intersect off-site primary and major evacuation routes. Based on the existing street network, the community would evacuate to the north (once off site), south, east, and west depending on the nature of the emergency.

There are at least two ingress/egress routes for the proposed project (see Figure 3-7, Vehicular Circulation Plan, in Chapter 3):

- **Southwest corner of the community:** Fanita Parkway provides access to Mast Boulevard and Carlton Oaks Road, both of which would offer travel options west and east in the City or onto the SR-52 or SR-67 on-ramps.
- **South central portion of the community:** Cuyamaca Street, the proposed project's primary access, provides access to Mast Boulevard, Mission Gorge Road, and the SR-52 on-ramp.
    - **East/southeastern portion of the community:** Magnolia Avenue provides access to Mast Boulevard, Mission Gorge Road, SR-52 on-ramp, and SR-67 on-ramp. Both Mast Boulevard and Mission Gorge Road connect to SR-52 to the west.

Depending on the nature of the emergency requiring evacuation, the majority of the community traffic would exit the proposed project via Cuyamaca Street or Magnolia Avenue via Cuyamaca Street. These are the most direct routes for the project site. Fanita Parkway may be used by the western portion of the project site, depending on the time available for evacuation and the need for additional movement via the southerly route. In a typical evacuation that allows several hours or more time (as experienced for most areas during the 2003, 2007, 2014, 2016, and 2017 wildfires), all traffic may be directed to the south and out Cuyamaca Street and/or Magnolia Avenue. If less time is available, fire and law enforcement officials may direct some neighborhoods to temporarily shelter in their residences. For further information, please refer to the project's Wildland Fire Evacuation Plan (Appendix P2).

An evacuation of any area requires significant coordination among numerous public, private, and community/nonprofit organizations. Among the most important factors for successful evacuations in urban settings is control of intersections downstream of the evacuation area. If intersections are controlled by law enforcement, barricades, signal control, or other means, potential backups and slowed evacuations can be minimized. Another important aspect of successful evacuation is a managed and phased evacuation declaration. Evacuating in phases, based on vulnerability, location, or other factors, enables subsequent traffic surges on major roadways to be smoothed over a longer time frame and result in traffic levels that flow better than when mass evacuations include large evacuation areas at the same time (Appendix P2).

The following emergency response operations could occur under an evacuation order:

Evacuation Points and Shelters. When the SDCSD implements an evacuation order, they coordinate with the responding fire agency, the Emergency Operation Center, and others to decide on a location to use as a temporary evacuation point. The SDCSD Office Dispatch Center would use the AlertSanDiego system to direct evacuees to the established temporary evacuation point or shelter. These evacuation points would serve as temporary safe zones for evacuees and would provide basic needs such as food, water, and restrooms. If residents are unable to evacuate and need transportation assistance to get to a temporary evacuation point or shelter, the SDCSD may establish transportation points to collect and transport people without transportation resources to evacuation points. These points would be large, well known sites such as shopping centers, libraries, and schools. Transportation would be accessible to all populations, including people with disabilities and other access and functional needs.

Shelter-in-Place. Sheltering-in-place is the practice of going or remaining indoors during or following an emergency event. This procedure is recommended if there is little time for the public to react to an incident and it is safer for the public to stay indoors for a short time rather than travel outdoors. Sheltering-in-place also has many advantages because it can be implemented immediately, allowing people to remain in their familiar surroundings and providing individuals

with everyday necessities such as telephones, radios, televisions, food, and clothing. However, the amount of time people can stay sheltered-in-place is dependent upon availability of food, water, medical care, utilities, and access to accurate and reliable information.

The decision on whether to evacuate or shelter-in-place is carefully considered with the timing and nature of the incident. Sheltering-in-place is the preferred method of protection for people who are not directly impacted or in the direct path of a hazard. This would reduce congestion and transportation demand on the major transportation routes for those who have been directed to evacuate by law enforcement or fire personnel. The proposed project would incorporate ignition-resistant construction and wide FMZs and provide defensibility throughout the site. Therefore, responding fire and law enforcement personnel would be able to direct project residents to temporarily refuge in their homes in the rare situation where that alternative is determined to be safer than evacuating.

As discussed, the proposed project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts are considered less than significant.

Mitigation Measures

The proposed project would have a less than significant impact associated with the impairment of an adopted emergency response plan or emergency evacuation plan. Therefore, no mitigation measures are required.

4.18.5.6 Threshold 6: Wildland Fires

Would implementation of the proposed project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fire?

Impact: Implementation of the proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fire.	**Mitigation**: No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

The wildland fire risk and features prescribed in the FPP (Appendix P1) have been analyzed and developed to reduce risk to acceptable levels at Fanita Ranch by applying comprehensive guidelines developed by a technical panel of 17 professional fire prevention officers and fire protection specialists and planners. These guidelines are referred to as the San Diego County Guidelines for Determining Significance – Wildland Fire and Fire Protection (County of San Diego 2010). These guidelines have become a standard for FPPs in numerous fire agency jurisdictions because they use a holistic approach to understanding a site's fire hazards,

understanding how a project complies with safety requirements, and understanding where additional fire protection is needed, allowing the FPP to require more robust or equivalent alternative protections to Code requirements.

Wildfires may occur in undeveloped landscapes that surround the proposed project, but the number of fires would not be significantly increased in frequency, duration, or size with construction of the project due to implementation of many fire protection and prevention features. Construction activities can lead to increased potential for vegetation ignitions; however, the project addresses this potential risk through its focused CFPP (Appendix P1). The CFPP's fire prevention and safety measures, along with its limitations on work activities during fire weather, address the potential for ignitions and would not expose people to increased fire risk during the construction period. The project would include conversion of fuels from existing flammable fuels to highly ignition-resistant structures and maintained urbanized landscapes with designated SFD review. It would also include substantial FMZs, a funded entity to manage and maintain the FMZ, and third-party FMZ inspections twice per year to confirm the FMZ areas are maintained as designed and, therefore, would function as intended. As such, the development footprint would be largely converted from ignitable fuels to ignition-resistant landscape and structures that are provided with defensible space consistent with and exceeding the strictest Code standards. A 100-foot FMZ at the site perimeter adjacent to the existing neighborhood to the south would also be provided, monitored, and maintained as part of the proposed project to further reduce fire risk to those older homes. In addition, the project would provide for fast firefighter response on and off site (4-minute travel time to anywhere on site), would include an on-site fire station, and access for firefighters, early evacuations, water and fire flow to code, and other fire protection features described throughout this FPP.

In addition, as shown in the Wildland Fire Evacuation Plan (Appendix P2), the project would provide two major routes for ingress and egress during an emergency (Fanita Parkway and Cuyamaca Street), would not cut off or modify existing evacuation routes, and provide numerous roadway improvements in the City that would improve evacuation over existing conditions (including the Magnolia Avenue extension). Evacuation modeling shows that, under the most likely wildfire evacuation scenario, it would take approximately 19 minutes to perform a surgical evacuation of the project and targeted, existing communities. Under a much less likely and conservative scenario, assuming all the project's residences would be occupied and evacuated, it would take approximately 53 minutes to 1.5 hours. First responders would account for evacuation timing to adjust the lead time given in issuing evacuation orders, to better phase evacuation orders, and to adjust evacuation traffic control methods (such as controlling downstream traffic lights or officers directing traffic) to ensure project occupants and the surrounding community are able to safely evacuate.

In the event evacuation is not recommended as a result of the increased risk of evacuating, the project's fire prevention features and shelter-in-place contingency would further mitigate risks to public safety. The project's fire protection features would result in a redundant and layered fire protection system consistent with fire agency-designated shelter-in-place communities (e.g., Rancho Santa Fe shelter-in-place communities of (1) The Bridges, (2) The Crosby, (3) Cielo, (4) 4S Ranch, and (5) The Lakes; and the Santa Clarita Valley's Stevenson Ranch community). Because of these fire protection features, maintenance, and enforcement requirements, it would be an option, and in some scenarios, the preferred option, for emergency managers to direct residents and visitors to temporarily shelter in their homes or designated shelter sites. This is based on the project's ability to buffer wildfire and related heat away from the community's structures and infrastructure, and protect against burning ember intrusion, while providing firefighters with safe areas and defensible space on site. The project's redundant fire protection features, quick emergency response, evacuation routes and plans, and the contingency option of sheltering on site in protected spaces would ensure that people and structures would not be exposed to a significant risk of loss, injury or death involving wildland fires.

Ignition-Resistant Structures

The best mitigation to reduce a project's potential to start on-site and off-site fires is to reduce the likelihood that the project's structural elements would ignite (Gorte 2011; Maranghides & Mell 2012; Zhou 2013; Calkin et al. 2014; Mockrin et al. 2020). Incorporation of the latest structural ignition-resistant features and construction methods minimize the possibility that structures would ignite. Each facet of a building's exterior construction and appendages are addressed within Chapter 7A of the California Building Code, with a primary focus on requiring homes that can withstand heat, flame, and embers.

For example, the 2007 Witch Creek Fire was one of the most destructive fires in California's history and destroyed thousands of homes in San Diego County. Years before the fire, Rancho Santa Fe was a community vulnerable to wildfire damage, as it was set into steep rolling hills covered in chaparral and at one point considered unsafe. However, in 1996, the community made strides to adapt to a very high fire hazard environment. The community implemented modern fire codes, developed defensible space rules, required home hardening measures, and imposed vegetation restrictions. Through this system-based approach, Rancho Santa Fe was able to transform into a fire-adapted community. As a result, when the Witch Creek fire spread to Rancho Santa Fe, no fire-hardened home was lost (Sommer 2019). San Diego County's "after-action" investigation of the Witch Creek Fire concluded that "the fires demonstrated unequivocally that defensible space around homes works" and that "newer homes, built in accordance with new fire-safe building codes, withstood the fire better than older homes built to less stringent codes" (Appendix P1). These findings support the success of fire-hardening buildings and use of FMZs.

They also support the available option of hardened communities to offer temporary sheltering as a contingency plan when evacuation is considered undesirable, as discussed further below.

Newer master-planned communities constructed in accordance with modern fire-safe development standards also survived the 2003 Simi Fire, the 2008 Freeway Complex Fire, and the 2020 Silverado Fire, with no homes lost (Appendix P1).

These recent examples demonstrate the protective value of ignition-resistant structures and modern fuel management techniques, both of which are discussed in greater detail below. Once a fire-hardened community is planned and built with fire- and ignition-resistant materials and infrastructure, long-term protection of the community and surrounding areas is dependent on ongoing maintenance (Sommer 2019). In addition to its numerous wildfire prevention measures, the project would include a homeowners association (HOA) responsible for long-term funding and maintenance of private roads and fire protection systems. This includes responsibility for fuel modification and vegetation management for all common areas of the project site, including roadside clearance areas and FMZs. HOAs are an effective fire protection feature as they can enforce defensible space compliance and increase wildfire risk awareness through education. In comparison, many non-HOA communities have lower wildfire risk awareness and are less likely to implement defensible space and fire hazard reduction techniques on private properties or through the community (Steffey et al. 2020). The project's HOA would also enforce homeowner compliance with the project's fuel management plan on an ongoing basis. In addition, the HOA would provide project residents and occupants with ongoing education regarding wildfires so they may maintain an increased awareness of wildfire risk and the possibility that they may be directed to remain in their homes or moved to another on-site location during a wildfire. These educational materials would include information on the need to timely maintain the landscape and structural components according to the applicable fire-safe standards. Moreover, the SFD would review and approve all HOA wildfire educational material and programs before printing and distribution. HOA oversight and community engagement were credited as one of the reasons why Rancho Santa Fe was able to survive the Witch Creek fire in 2007 (Sommer 2019).

Code-Required Fire Safety Features that Facilitate Sheltering in Place

Most of the primary components of the proposed project's layered fire protection system are required by Santee Fire and Building Codes, because they have been tested in the lab and in real-time wildfires and found to result in saved structures. They have been proven effective for minimizing structural vulnerability to wildfire. They also make shelter-in-place possible as an evacuation contingency option when evacuation is not possible.

Even though current Building and Fire Codes require these measures, at one time, many of them were used as mitigation measures for buildings in fire hazard areas, because they were known to reduce structure vulnerability to wildfire. These measures were adopted into the 2007 California

Building Code and have been retained and enhanced in code updates since then. The following project features are required for new development in fire hazard areas and form the basis of the system to provide adequate access by emergency responders and provide the protection necessary to minimize structural ignitions:

- Application of the latest adopted ignition-resistant building codes.
- Nonflammable roofs, which would be Class "A" listed and fire-rated roof assembly, installed per manufacturer's instructions, to approval of the City. Roofs would be made tight with no gaps or openings on ends or in valleys, or elsewhere between roof covering and decking, in order to prevent intrusion of flame and embers. Any openings on ends of roof tiles would be enclosed to prevent intrusion of burning debris. When provided, roof valley flashings would not be less than 0.019 inch (No. 26 gage galvanized sheet) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of 72 pound ASTM 3909 cap sheet running the full length of the valley.
- Exterior wall coverings are to be non-combustible or ignition resistant.
- Multi-pane glazing with a minimum of one tempered pane.
- Ember-resistant vents (recommend BrandGuard, O'Hagin, or similar vents).
  - No vents in soffits, cornices, rakes, eaves, eave overhangs or between rafters at eaves or in other overhang areas. Gable end and dormer vents to be at least 10 feet from property line or provided alternative design resistant to ember penetration. Vents in allowed locations to be protected with wire mesh having no openings greater than 0.125 inch. Vent openings would not exceed 144 square inches. Vents would be designed to resist the intrusion of any burning embers or debris.
  - Vents would not be placed on roofs unless they are approved for Class "A" roof assemblies (and contain an approved baffle system (such as Brandguard or O'Hagin vents) to stop intrusion of burning material) or are otherwise approved.
  - Turbine vents would be prohibited.
- Interior, automatic fire sprinklers to code for occupancy type.
- Eaves and soffits would meet the requirements of SFM 12-7A-3 or be protected by ignition-resistant materials or non-combustible construction on the exposed underside, per City Building Code.
- There would be no use of paper-faced insulation or combustible installation in attics or other ventilated areas.
- There would be no use of plastic, vinyl (with the exception of vinyl windows with metal reinforcement and welded corners), or light wood on the exterior.

- Any vinyl frames to have welded corners and metal reinforcement in the interlock area to maintain integrity of the frame certified to ANSI/AAMA/NWWDA 101/I.S 2 97 requirements.
- Skylights to be tempered glass.
- Rain gutters and downspouts to be non-combustible. They would be designed to prevent the accumulation of leaf litter or debris, which can ignite roof edges.
- Doors to conform to SFM standard 12-7A-1, or would be of approved non-combustible construction or would be solid core wood having stiles and rails not less than 1 3/8 inches thick or have a 20-minute fire rating. Doors to comply with City Building Code, Chapter 7-A. Garage doors to be solid core 1.75-inch-thick wood or metal, to comply with code.
- Decks and their surfaces, stair treads, landings, risers, porches, balconies to comply with language in City Building Code, Chapter 7-A and be ignition-resistant construction, heavy timber, exterior approved fire retardant wood, or approved non-combustible materials.
- Decks or overhangs projecting over vegetated slopes are not permitted. Decks to be designed to resist failing due to the weight of a firefighter during fire conditions. There would be no plastic or vinyl decking or railings. The ends of decks to be enclosed with the same type of material as the remainder of the deck.
- There would be no combustible awnings, canopies, or similar combustible overhangs.
- No combustible fences to be allowed within 5 feet of structures on any lots. The first 5 feet from a structure would be non-combustible or meet the same fire-resistive standards as walls.
- All chimneys and other vents on heating appliances using solid or liquid fuel, including outdoor fireplaces and permanent barbeques and grills, to have spark arrestors that comply with the City Fire Code. The code requires that openings would not exceed 1/4-inch. Arrestors would be visible from the ground.
- Any liquid propane gas (LPG) tanks (except small barbecue and outdoor heater tanks), firewood, hay storage, storage sheds, barns, and other combustibles would be located at least 30 feet from structures, and, within the FMZ, 30 feet from flammable vegetation. There would be no flammable vegetation under or within 30 feet of LPG tanks, or tanks would be enclosed in an approved ignition-resistant enclosure with 10 feet clearance of flammable vegetation around it. In no case would a tank be closer than 10 feet from the structure. City Fire Code requires 10 feet of clearance of native vegetation, weeds, and brush from under and around LPG tanks.
- Storage sheds, barns, and outbuildings to be constructed of approved non-combustible materials, including non-combustible Class A roofs and would be subject to the same restrictions as the main structure on lot.

- Modern infrastructure, access roads, and water delivery system.
- Maintained FMZs.
- Fire apparatus access roads throughout the project's developed areas.

Notably, interior fire sprinklers, which would be provided in all structures (required by code since 2010), have an extremely high reliability track record (Appendix P1) of controlling fire in 96 percent of reported fires, and statistics indicate that fires in homes with sprinklers resulted in 82 percent lower property damage and 68 percent lower loss of life (Hall 2013). Although not designed for wildland fire defense, should embers succeed in entering a structure, sprinklers provide an additional layer of life safety and structure protection.

Effective Fuel Modification Zones

Provisions for modified fuel areas of at least 100 feet separating wildland fuels from structures have reduced the number of fuel-related structure losses by providing separation between structures and radiant heat generated by wildland fuels. FMZs of 100 feet in width that are correctly designed, installed, and maintained over time have been shown to provide effective defensible space. The project's FMZs have been customized dependent on the anticipated adjacent fire behavior to exceed this 100-foot standard. The project provides FMZs of a minimum of 115 feet and, in areas where the potential wildfire hazard was determined to be higher, the FMZs around the project have been extended to 165 feet wide. A 100-foot FMZ at the site perimeter adjacent to the existing neighborhood to the south would also be provided, monitored, and maintained as part of the project to further reduce fire risk to those older homes.

The FMZs are designed to minimize wildfire encroaching upon the community and minimize the likelihood that an ignition from the developed area spreads into the open space by separating the natural vegetation occurring outside the FMZs from the development. FMZs include reduced fuel densities, lack of fuel continuity, and a reduction in the receptiveness of the landscape to ignition and fire spread. Vegetation within the FMZs would be maintained as required by SFD and Development Plan. Irrigated zones provide a high plant/fuel moisture, making it more difficult to ignite (USFS 2015). Positioning the low plant density, irrigated zone directly adjacent to structures provides a significant buffer between a house or other landscape fire and native vegetation. This type of green barrier can have the same benefit of buffering preserved open space areas (and adjacent communities) from accidental on-site ignitions, while also providing positive ecological impacts by preventing/blocking surface fire and crown fires, serving as green ember catchers, and reducing overall erosion impacts (Wang et al. 2021).

The entire project site would represent a large fire break. Fires from off site would not have continuous fuels across the development footprint and, therefore, would be expected to burn around and/or over the developed landscape via spotting. Burning vegetation embers may land on 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 and venting that would be used within the project, and the ongoing inspections and maintenance that would occur in the project's landscaped areas and FMZs. Fuel treatments and landscape design protect homes and also serve as a buffer for natural areas and surrounding communities. FMZs were originally implemented by CAL FIRE to protect natural resources from urban area ignition sources. Over the years, FMZs have become essential to setting urban areas back from wildland areas serving the dual purpose of protecting structures and people while buffering natural areas from urban ignitions, thus reducing the potential for urban fires to spread into wildland areas. Research shows reducing structural exposure to wildland vegetation through the implementation of defensible space practices can address a wide range of highly valued resources, including critical habitat, vegetation conditions, and watershed health (Scott et al. 2016.) As a result, master-planned communities can be hardened against fire and reduce off-site impacts to wildfire, including existing communities.

Research has indicated that the closer a fire is to a structure, the higher the level of heat exposure (Cohen 2000). However, studies indicate that given certain assumptions (e.g., 10 meters of low-fuel landscape, no open windows), wildfire does not spread to homes unless the fuel and heat requirements (of the home) are sufficient for ignition and continued combustion (Cohen 1995; Alexander 1998). Construction materials and methods can prevent or minimize ignitions. Similar case studies indicate that with nonflammable roofs and vegetation modification from 10–18 meters (roughly 32–60 feet) in Southern California fires, 85–95 percent of the homes survived (Appendix P1; Foote and Gilless 1996).

These results support Cohen's (2000) findings that if a community's homes have a sufficiently low home ignitability (i.e., Santee Municipal Code, City Ordinance No. 570), the community can survive exposure to wildfire with minor fire impacts. This provides the option of addressing the wildland fire threat to structures at the residential location without excessive wildland fuel reduction, including within adjacent open space areas. Rather, focusing the effort in the landscapes nearest the project footprint would provide the best fire protection. Cohen's (1995) studies suggest, as a rule-of-thumb, larger flame lengths and widths require wider FMZs to reduce structure ignition. For example, valid structure ignition assessment modeling (SIAM) results indicate that a 20-foot-high flame has minimal radiant heat to ignite a structure (bare wood) beyond 33 feet (horizontal distance). By contrast, a 70-foot-high flame may require about 130 feet of clearance to prevent structure ignitions from radiant heat (Cohen and Butler 1996). This study utilized bare wood, which is far more combustible than the ignition-resistant exterior walls that would be used for the project.

Based on scientifically modeled fire behavior calculations for the site, flame lengths under the most extreme fire weather conditions within the natural open space areas to the north and east of the project could approach 66 feet in height. Under normal summer weather conditions, flame lengths could approach 19 to 28 feet in height along the southern and western edges of the project site, respectively. As such, FMZs along the southern edge and interior open space areas are

typically 115 feet wide, whereas the project's FMZs on the northern and eastern edges in areas adjacent to the higher flame length producing native landscapes were extended to 165 feet in width. This results in fire buffers that are between 3 and 5 times the predicted longest flame lengths directly adjacent the fuel modification area under typical weather conditions and approximately 2 to 3 times as wide as predicted adjacent flame lengths under extreme weather conditions.

Based on the studies referenced above, the proposed FMZ distances would be sufficient to prevent structure ignitions at the project even under the most extreme fire weather conditions (Appendix P1).

In addition, internal roadways and off-site travel routes (Fanita Parkway, Cuyamaca Street, and the Magnolia Avenue extension) would be fuel-modified passageways. This means that proposed project access roads that traverse areas of natural vegetation would, in addition to consisting of inflammable asphalt/hardscape with ignition-resistant landscaping, provide a minimum of 50-foot buffer of modified fuel areas along both sides of the road. These 50-foot FMZ adjacent to roadways would further reduce ignitions from vehicle-related causes (catalytic converter, brake-related, tossed cigarette, etc.), provide a setback from wildland fuels, improve evacuation safety, and act as a further fire break in a wildfire event.

Ember Protection

Embers are frequently formed from burning vegetation and become lofted in the air through convective columns and wind. As wildfire fronts advance through landscapes or communities on the ground, the embers also are thrown ahead of the flaming front, launching thousands of glowing embers into the air. Also known as firebrands, these specks of burning debris can glide for up to 40 kilometers (approximately 24 miles) before landing and can cause up to 90 percent of home and business fires during wildfires (Bouvet et al. 2021).

Embers have been the focus of some local building codes since the 1990s; but, became a statewide focus when Chapter 7A of the building code was adopted, which focuses on building ignition resistance, including protecting against embers. Embers can ignite new fires when they land in favorable fuel beds. Urbanized landscapes that are hardened against fire through careful plant selection, irrigation and maintenance along with roads, ignition-resistant buildings, and other hardscape do not provide embers with readily ignitable fuel.

The project's fire hazard assessment includes the potential exposure to airborne embers. Proposed fire protection features would include requirements to address embers and minimize the potential for ember-caused structure damage or loss. Specifically, (1) ember-resistant vents would be included in all structures; (2) all structures would include interior fire sprinklers, which are highly successful and provide an additional layer of protection should embers succeed in entering a structure; and (3) landscaping would be planted and maintained as ember-resistant. With

implementation of these fire protection features, the proposed project would not be vulnerable to embers, and structures would resist ember penetration and ignition.

Evacuation

Mass evacuation during wildfires is no longer used in Santee or San Diego County. Instead, populated areas are evacuated in phases based on proximity to the event and risk levels. For example, the project's wildfire evacuations would likely include the relocation of perimeter residents, either to on-site shelter sites or off site rather than mass evacuating the entire community (Appendix P1).

The wildfire evacuation scenarios selected for analysis were based on a comprehensive approach that included consultation with the SFD, review of fire history, analysis of Cedar Fire evacuations in Santee, fire behavior science, area topography, fuel types and the evolved approach to evacuations, which is targeted/surgical instead of areawide. Accordingly, given the highest probability wildfire scenarios that would result in evacuation, the perimeter populations in certain locations may be targeted for evacuation. The entire project would provide significant protection against exposure to wildfire. However, some perimeter units, based solely on their closer proximity to native fuels, may be selected for occupant relocation as a precautionary measure. This may be combined with targeted evacuations of perimeter populations within existing communities to the south of the project, as indicated in the evacuation modeling analysis (Appendix P2).

Targeted evacuation is consistent with County/City Annex Q (Evacuation) and with management of recent San Diego County wildfires (for example, the 2017 Lilac Fire) where the phased/surgical evacuation practice was implemented with success. The result of this type of evacuation is that residents in locations closest to a wildfire burning in open space areas are temporarily moved from the vicinity and vehicle congestion on evacuation routes is minimized, enabling a more efficient evacuation. Under the most probable evacuation scenario, the project evacuees, along with neighboring community residents could be evacuated to designated safety areas within 19 minutes (Appendix P2). If they were relocated to other internal project areas, the evacuation time would be even lower and have no impact on existing off-site communities, except for up to approximately 25 percent of evacuees who decided to leave the area despite not being asked to evacuate off site, known as shadow evacuees (Sorenson and Vogt 2006).

The evacuation modeling conducted for the project site and Santee vicinity utilizes larger, mass evacuation scenarios as well as more realistic, targeted or phased evacuation scenarios. San Diego County experienced large wildfires in 2003, 2007, and 2010. The experience gained from these large wildfire evacuations resulted in hundreds of millions of dollars in investment into better technology, communication, predictive modeling, coordination, and response resources. The County and jurisdictions within the County now benefit from all of these investments, and the most relevant to the project modeling is the investment in evacuation technologies. The 2007

Witch Fire resulted in a mass evacuation of nearly 500,000 people due to the approach used at that time (San Diego County Grand Jury 2007–2008). It was realized afterward that a more accurate system was needed that relied on real-time fire behavior information along with area pre-plans. San Diego County's EOP Evacuation Annex (Annex Q) specifically addresses new capabilities for phased evacuations.

Phased Evacuation

The purpose of a phased evacuation is to reduce congestion and transportation demand on designated evacuation routes by controlling access to evacuation routes in stages and sections. This strategy can also be used to prioritize the evacuation of certain communities in proximity to the immediate danger. A phased evacuation effort would need to be enforced by law enforcement agencies and coordinated with the Operational Area Emergency Operations Center and affected jurisdictions.

Evacuations in Santee and throughout San Diego County are now managed by a system that enables emergency managers to designate small areas in a surgical approach that can target neighborhoods, blocks, or streets for alert messaging. This system was utilized with success in the 2017 Lilac Fire in northern San Diego County. In this evacuation, a larger area of approximately 44,000 households, was given a message via the wireless emergency alert system that evacuations may be declared and residents should be prepared to leave when notified. Following this mass notification, numerous targeted evacuation notices were sent via the AlertSanDiego system, in a staggered approach and based on real-time fire behavior and spread rates, road congestion, and other factors. This phased approach to evacuation notices resulted in a successful evacuation and use of available resources (CAL FIRE/San Diego County Fire 2017).

The Department of Homeland Security (Appendix P1) provides supporting data for why jurisdictions have moved to the targeted/surgical evacuation approach that leverages the power of situational awareness to support decision-making. According to its "Planning Considerations: Evacuation and Shelter in Place" document, the Department indicated that delineated zones provide benefits to the agencies and community members. Evacuation and shelter-in-place zones promote phased, zone-based evacuation targeted to the most vulnerable areas, which allows jurisdictions to prioritize evacuation orders to the most vulnerable zones first and limit the need to evacuate large areas not under the threat. The zones help:

- Jurisdictions to understand transportation network throughput and capacity, critical transportation and resource needs, estimated evacuation clearance times, and shelter demand.
- Planners to develop planning factors and assumptions to inform goals and objectives.
- Community members to understand protective actions to take during an emergency.
- Shelters to limit traffic congestion and select locations suitable for the evacuated population.

As shown in the Wildland Fire Evacuation Plan (Appendix P2), the project would provide two major routes for ingress and egress during an emergency (Fanita Parkway and Cuyamaca Street), would not cut off or modify existing evacuation routes, and provide numerous roadway improvements in the City that would improve evacuation over existing conditions (including the Magnolia Avenue extension). Further, internal roadways and off-site travel routes (Fanita Parkway, Cuyamaca Street, and the Magnolia Avenue extension) would be fuel-modified passageways, consisting of inflammable asphalt/hardscape with ignition-resistant irrigated landscaping with an additional minimum 50-foot buffer of modified fuel areas along both sides of the road. These fuel-modified passageways would improve evacuation safety and act as a further fire break in a wildfire event.

In addition, evacuation modeling conducted by Chen Ryan Associates (Appendix P2) shows that, conservatively assuming all the project's residences would be occupied and evacuated, it would take approximately 53 minutes to 1.5 hours for all vehicles to exit the site. In a more realistic evacuation event where a portion of the project site and a portion of the existing area residents are evacuated, which would focus on those within approximately ¼ mile of unmaintained open space areas, the evacuation time would be up to approximately 1.3 hours, which is considered a reasonable time frame (Rohde & Associates 2019–2021; SFD 2022; Appendix P1).

Further, the most probable wildfire evacuation scenario, which would follow the latest evacuation strategies of targeted/surgical evacuations, would move certain perimeter residents from the project and the existing community and is modeled to be accomplished within 19 minutes (Appendix P2). First responders would account for evacuation timing to adjust the lead time given when issuing evacuation orders, to better phase evacuation orders, and to adjust evacuation traffic control methods (such as controlling downstream traffic lights or officers directing traffic) to ensure proposed project occupants and the surrounding community are able to safely evacuate in the primary evacuation scenario.

In the event evacuation off site is not recommended because of the increased risk of evacuating, the project's fire prevention features and shelter-in-place contingency would further mitigate risks to public safety.

Temporary Refuge and Shelter-in-Place

The fire protection features detailed in the preceding sections that would be incorporated into the project make it a shelter-in-place-capable community. Wildfire would not be able to burn into the community due to perimeter FMZs and interior fire-resistant landscapes and hardscape, which would not readily facilitate fire ignitions or spread. Structures would be setback from unmaintained native fuels such that there would not be exposure to heat or flames. The structures would also include special vents that are ember resistant. Embers are the primary reason structures are lost in wildfires. Ember penetration into home attics or crawl spaces, for example, can ignite materials inside the home and go unnoticed for considerable periods of time until the structure is fully involved. Project

structures would meet the most stringent ember-resistant requirements established in the California Building Code. Further, all structures would include interior fire sprinklers to provide an additional layer of protection should embers succeed in entering a structure.

Structures that are built to withstand the impact of wildfire are buildings that can be used for temporary shelter-in-place. Sheltering in place or taking temporary refuge when evacuation is considered undesirable is not a new idea. Sheltering in place has been a useful tool in the emergency management toolbox since the 1950s. In some wildfire scenarios, temporarily sheltering in a protected structure is safer than evacuating. Huntzinger (2010) states that: "If sheltering in place can provide the community with the same level of protection from an emergency incident as mass evacuation, this will be the recommended practice to use." By contrast, many civilian deaths have occurred when residents evacuated late and were exposed to wildfire on unprotected roadways (Braun 2002; CFA 2004).

For example, the SDCSD indicated in multiple public hearings (Harmony Grove Village South Planning Commission Hearing, May 24 2018) that the reason people lost their lives on Highland Valley Road during the 2003 Cedar Fire, was that they initially ignored evacuation declarations and then decided to leave when the fire was too close (late evacuation). There are two primary ways to avoid this outcome: 1) the Ready, Set, Go! Evacuation model that results in prepared residents who are ready to go when given the message to leave; and 2) a shelter-in-place contingency which provides another option to a late evacuation where the evacuees risk being exposed to wildfires on roadways, project residents will be provided ongoing education and public outreach on Ready, Set, Go! and could temporarily shelter on site, if directed.

One example of a fire-hardened community performing extremely well and not requiring evacuation includes the 3,500 home Stevenson Ranch in Santa Clarita Valley, California. A 2003 wildfire threatened the community under extreme weather conditions. However, due to community fire-hardening efforts, including FMZs, the fire burned around the community and did not require evacuation. There was no loss of life or property damage, and little fire service intervention (Foote 2004). The project has been designed with the same types of fire hardening to provide a shelter-in-place contingency and would perform similarly under wildfire conditions.

If all communities focused on shelter-in-place capability, similar to Stevenson Ranch and the project, most or all fire resources could focus on fire control instead of structure defense (Foote 2004). Thus, not only could project residents shelter-in-place safely while fire burns around the community, fire resources could be directed toward better controlling and fighting the fire as the community acts as a "fire break." Further, first responders could utilize resources to focus efforts on defense of less fire-resistant communities. Nasiatke (2003) points out that another advantage to sheltering in place is a substantial reduction in the number of evacuees that would need to be managed, which is a serious problem experienced in large or mass evacuations.

Shelter-in-place may be implemented in a manner where residents are instructed to remain in their homes while firefighters perform their structure protection function; or it would allow for partial relocation, whereby residents in perimeter homes on the north/west/east edges or within certain individual neighborhoods on site are temporarily relocated to internal areas or to the Fanita Commons Village Center. These areas represent the most fire-protected areas of the site in the event future residents are instructed not to evacuate.

The evidence shows that if emergency managers determine shelter-in-place is preferred for the proposed project, project residents would not be exposed to a significant risk of loss, injury or death from a wildland fire. The fire-safe site would act as a fire break within more ignition-prone fuels. The project's property/structures would likely survive, providing an opportunity for residents to shelter-in-place. Safety would also be improved by the project providing a contingency shelter-in-place option to late, unsafe evacuation practices. And the contingency for project residents to shelter-in-place may improve safety to off-site residences by freeing up fire resources elsewhere.

Summary and Expert Review

The project has been designed and planned by fire protection experts with over 100 years of fire protection and evacuation experience to meet or exceed the most stringent applicable fire protection requirements and provide for a highly defensible community. The planned approach incorporates redundant measures that would improve fire prevention and defensibility at the project site and adjacent properties including ignition-resistant structures, proven fire safety features, project-specific FMZs, and ember protection. The project would provide two major routes out of the site for ingress and egress during an emergency (Fanita Parkway and Cuyamaca Street), would not cut off or modify existing evacuation routes, and would provide numerous roadway improvements in the City that would improve evacuation over existing conditions (including the Magnolia Avenue extension). In addition, evacuation modeling by Chen Ryan Associates (Appendix P2) shows that under the most probable wildfire evacuation scenario, it would require approximately 19 minutes to evacuate the targeted areas of the project and the existing community. Under a more conservative scenario assuming all the project's residences would be occupied and evacuated, it would take approximately 53 minutes to 1.5 hours to safely evacuate all vehicles. In the event evacuation is not recommended for residents of the project during a wildfire event (i.e., because of inadequate lead time), the fire protection features detailed above describe why the project would be considered a shelter-in-place-capable community, which would safely provide homes and public spaces in which people may take temporary refuge.

The input of fire protection experts was integrated into the FPP (Appendix P1). The SFD has accepted the FPP and recognizes that the features incorporated into the project would result in a defensible community that does not substantially increase fire safety risks to life or property. For all these reasons, the proposed project would not increase exposure of people or structures to a significant risk of loss, injury or death from a wildland fire.

Mitigation Measures

Implementation of the proposed project would not increase exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury, or death from a wildland fire. No mitigation is required.

4.18.5.7 Threshold 7: Fire Protection Facilities

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

Impact: Implementation of the proposed project would include the development of a new fire station to offset its increase in demand for fire services and would not require additional new or physically altered facilities that could result in a significant physical impact to the environment other than what is already addressed in Sections 4.1 through 4.18.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

Under the preferred land use plan with school, the proposed project would develop 2,949 new residential units, which would generate approximately 7,974 residents. Under the land use plan without school, the proposed project would develop 3,008 residential units, and generate approximately 8,145 residents. Using the City's current per capita call generation factor of 100 calls per 1,000 persons, the project site is projected to add approximately 950 calls per year to the SFD's existing call load. Under the land use plan without school, the additional population would increase the annual calculated call volume to 889 calls per year.

Due to increased demand and larger service area, response times to emergencies may exceed established response time goals. The primary standard used in the City to determine adequate levels of service is response time. The Santee General Plan (City of Santee 2003) states the goal is to provide an average maximum initial response time of no more than 6 minutes for fire, rescue and emergency medical services with an average maximum response time of no more than 10 minutes for supporting paramedic transport units 90 percent of the time. Secondary to response time is the number of personnel necessary to perform critical tasks required to safely mitigate emergencies.

According to the Fire Service Letter prepared for the proposed project (Appendix M), fire stations and personnel within the City are currently operating at capacity. To accommodate the increased demand and larger service area, the proposed project designates a 1.5-acre site for a new fire station and requires firefighting apparatus and trained firefighters in Fanita Commons to serve the project site and ensure adequate response times. The new station specifications regarding size, staffing,

and layout would be determined through coordination between the applicant and the City (Appendix P1).

The SFD has indicated it can and would serve the project site with the addition of an adequately staffed and equipped fire station (Appendix M). The station design would comply with City building and design standards, including City Ordinance No. 457, Article 86, Amended – Fire Protection Plan Wildland-Urban Interface Areas. Either a permanent or a temporary fire station must be constructed prior to the occupancy of any residential units in the proposed project.

The project would provide a fully constructed and staffed permanent fire station. In addition, a temporary fire station site equipped with apparatus and personnel may be provided on site until a permanent fire station is complete. The temporary fire station must be in an area that would meet a response time maximum of no more than 6 minutes to all areas of the proposed project. The temporary fire station would be fully equipped and staffed 24 hours per day, 7 days per week. The final location must be approved by the Santee Fire Chief. The applicant may choose to provide a permanent fire station in lieu of a temporary station. The Santee Fire Chief confirmed the addition of the new fire station, equipment, and staff on the project site would adequately serve the project site while maintaining current response standards (Appendix M). Travel time from the new permanent station to the most remote (distant) lot on the project site is calculated at 3 minutes and 26 seconds. This would allow just under 2 minutes for dispatch and turnout and would meet the Santee General Plan response time goal of no more than 6 minutes (Appendix P1).

As discussed in Section 4.17, Utilities and Service Systems, fire flow pressure would be required to be a minimum of 2,500 gallons per minute for 3 hours of fire flow for single-family and multi-family residential and 3,500 gallons per minute for 4 hours of fire flow for commercial areas. New construction in the City requires the installation of fire sprinklers, which would further reduce the potential for fire loss on the project site. Other fire protection mechanisms are discussed in Section 4.18, Wildfire. To address fire and life safety issues on new development, the City's Fire Marshal reviews proposed residential, commercial, and industrial projects through the City's Development Review process to ensure that adequate fire hydrant locations, water flow pressures, access for emergency vehicles, and other requirements are met, which would also reduce the need for fire protection services (City of Santee 2003).

The on-site fire station would be constructed to serve the increased development and population associated with the proposed project and would be a project component located within the boundaries of the project site. The physical environmental impacts associated with the proposed project's construction and operational activities are analyzed in Sections 4.1 through 4.18 of this EIR. Because the proposed project would provide an on-site fire station to serve the anticipated increase in development and population, it would not require construction or expansion of additional new fire protection facilities off site. Therefore, impacts associated with the need for

new or expanded fire facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection would not result in a new significant impact.

Mitigation Measures

The proposed project would not result in a new significant impact related to fire protection services; therefore, no additional mitigation is required.

4.18.5.8 Threshold 8: Inadequate Emergency Access

Would the proposed project result in inadequate emergency access?

Impact: The proposed project would not result in inadequate emergency access.	**Mitigation:** No mitigation required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

This impact is adequately addressed in Section 4.8, Hazards and Hazardous Materials, under Section 4.8.5.6. As discussed previously, the project site is currently undeveloped and there is no existing roadway infrastructure on site. The project proposes the extension of Fanita Parkway, Cuyamaca Street, and Magnolia Avenue to allow access to and from the project site with planned improvements on the existing segments and intersections to accommodate additional project traffic.

The project's FPP (Appendix P1) and Wildland Fire Evacuation Plan (Appendix P2) were prepared for the proposed project to address emergency access and evacuation in the case of a wildfire. The project would provide emergency access that would meet current City requirements throughout the proposed development areas. The proposed internal looped roadways would be built to the currently adopted California Fire Code and City Ordinance 545 (Sections 503.2.1, 503.2.3) requirements and provide travel lane widths consistent with the Fanita Ranch Development Plan standards, adequate parking, 28-foot inside radius, grade maximums, signals at intersections, and extremely wide roadside FMZs. Interior residential streets would be designed to accommodate a minimum of a 77,000-pound fire truck. All dead-end streets would meet SFD requirements. Additionally, the streets would provide residents the option to evacuate from at least two routes that lead to three main arteries.

The project site would have two points of primary access for emergency response and evacuation. Depending on the nature of the emergency, future residents would exit to the south on Fanita Parkway or Cuyamaca Street.

It is anticipated that the majority of the community traffic would exit the project site via Cuyamaca Street, which would also connect to the extension of Magnolia Avenue. These are the most direct routes to the project site. Both streets would include bike lanes that could be used as an additional emergency lane for first responders. These streets would provide access to major traffic corridors

including directly or indirectly to SR-52 to the south, SR-67 to the east, I-8 to the south, I-125 to the south, and I-15 to the west.

Fanita Parkway would be used for emergency access by the western portion of the proposed project development. The planned extension and improvements to Fanita Parkway, Cuyamaca Street, and Magnolia Avenue south of the project site would be sized to provide adequate access for fire equipment and personnel. The proposed project would not result in inadequate emergency access. Therefore, impacts would be less than significant.

Mitigation Measures

The proposed project would have a less than significant impact associated with inadequate emergency access. No mitigation measures are 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
Threshold 1: Emergency Response Plan or Evacuation Plan	Less than significant	Not cumulatively considerable
Threshold 2: Pollutant Concentrations	Less than significant	Not cumulatively considerable
Threshold 3: Installation or Maintenance of Associated Infrastructure	Less than significant	Not cumulatively considerable
Threshold 4: Flooding or Landslides	Less than significant	Not cumulatively considerable
Threshold 5: Emergency Response and Evacuation Plans	Less than significant	Not cumulatively considerable
Threshold 6: Wildland Fires	Less than significant	Not cumulatively considerable
Threshold 7: Fire Protection Services	Less than significant	Not cumulatively considerable
Threshold 8: Inadequate Emergency Access	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 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 EOP.

The project's FPP, CFPP, and Wildland Fire Evacuation Plan were prepared 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 (see Appendices P1 and P2). The project's 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) 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 described in the project's 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 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, Cumulative Projects, 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 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.

The proposed project would use pre-planning techniques and construction measures, including implementing the project's 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. As a result, no significant cumulative impact would occur, and the proposed project's contribution would not be cumulatively considerable under CEQA.

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, Cumulative Projects, 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 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 under CEQA.

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, Cumulative Projects, 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 under CEQA.

4.18.6.5 Cumulative Threshold 5: Emergency Response and Evacuation Plans

The geographic context for the analysis of cumulative impacts to emergency response plans or emergency evacuation plan is the City. Construction and operation associated with cumulative development could result in activities that could interfere with adopted emergency response or evacuation plans, such a temporary construction barricades or other obstructions that could impede emergency access. Cumulative impacts from multiple projects within the SFD's jurisdiction listed in Table 4-2, Cumulative Projects, in Chapter 4 can cause fire response service decline and impede emergency evacuation plans. These projects may 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 potentially impact and conflict with adopted emergency response plans and emergency evacuation plans.

The project's FPP, CFPP, and Wildland Fire Evacuation Plan were prepared to ensure the community would be built to withstand significant fire, provide residents multiple evacuation routes, 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 project's 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 Appendix P2 and were designed to comply with current and future population growth, roadway conditions, and access availability.

Further, the only proposed through routes on the project site would loop between Fanita Parkway and Cuyamaca Street on site and would not, in combination with other projects, affect emergency response and evacuation plans elsewhere in the City. The project street configuration and evacuation plan outlined in the project's 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 provide connections to major regional traffic 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, thereby 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 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's contribution would not be cumulatively considerable under CEQA.

4.18.6.6 Cumulative Threshold 6: Wildland Fires

The geographic context for the analysis of cumulative impacts to wildland fire risk is the City near the project site. Throughout the City, projects are required to comply with the California Fire Code and the California Building Code. These regulations help reduce the spread of wildfires in the City by providing for ignition-resistant construction of new buildings. New structures incorporate ignition-resistant features and construction methods to minimize the possibility that they ignite. Further, new development projects result in the removal of available flammable fuels for wildfire to consume and break up fuel continuity. The fire protection features of new projects render them less vulnerable to wildfire damage and give fire suppression resources greater opportunity to contain and control a wildfire than older unprotected structures. Evacuation of cumulative projects within the City would occur consistent with City and County evacuation practices, including County EOP Annex Q, which coordinate evacuation response and provide for targeted evacuation to minimize vehicle congestion.

The project has prepared an FPP (Appendix P1) that addresses the project's specific risk for wildfire impacts. The FPP describes that the project incorporates numerous features to reduce wildfire impacts through extensive FMZs, design features, ignition-resistant building construction, ember protection, landscaping standards, and operational evacuation and temporary refuge procedures. Additionally, the project is required to adhere to California and City Fire Code standards for construction and land development. Based on the FPP (Appendix P1), associated landscaping plans, and implementation FMZs, the project's contribution to a potential cumulative impact would be less than cumulatively considerable under CEQA.

4.18.6.7 Cumulative Threshold 7: Fire Protection Services

The geographic context for the analysis of cumulative impacts in regard to fire protection services is the City near the project site, where facilities that may serve the project site are located. A significant cumulative impact would occur if growth associated with cumulative projects would outpace the SFD's ability to expand and serve new development, resulting in adverse effects from increased response times, physical deterioration of existing facilities, or lack of funding for the development of future facilities. Population increases in the City can be anticipated to continue, even without the proposed project. The City's population increased over 8 percent from 2010 through 2019 (DOF 2019). Continued population increases are anticipated from cumulative project development and could, over time, impact the SFD's capacity to provide response within the City's response time standard. As the City continues to grow, additional fire response resources would become necessary.

As additional development occurs in the City, increases in the demand for fire protection would likely require improvements to fire protection services. However, these and other cumulative projects would undergo discretionary review by local agencies and would be required to conform with applicable adopted land use plans, which are used as the basis to plan for adequate fire protection services. In addition, fire protection facilities would be provided for new development through property taxes, developer agreements, and other general fund revenue sources. Therefore, cumulative projects would not result in a significant cumulative impact.

The project would provide a fully staffed and equipped fire station on site to serve the proposed project and neighboring areas of the City. The project would not result in the need for additional fire protection facilities off site. Therefore, the proposed project's contribution would not be cumulatively considerable under CEQA.

4.18.6.8 Cumulative Threshold 8: Inadequate Emergency Access

The geographic context for the analysis of cumulative impacts in regard to inadequate emergency access is the City and list of projects provided in Table 4-2, Cumulative Projects, in Chapter 4. This impact is adequately addressed in Section 4.18.6.5. As discussed in this section, cumulative projects would be required to undergo separate CEQA review to implement measures necessary to mitigate any potential impacts to emergency access. Therefore, a significant cumulative impact would not occur. In addition, the proposed project would provide adequate emergency access that meets the City's and County's requirements and standards. Therefore, the proposed project's contribution would not be cumulatively considerable under CEQA.

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 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
FMZ 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

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