Appendix P1. Fire Protection Plan

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REVISED FANITA RANCH
FIRE PROTECTION PLAN

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AME	Approved Maintenance Entity
AMSL	Above Mean Sea Level
CAL FIRE	California Department of Forestry and Fire Protection
CBC	California Building Code, Chapter 7A
CFC	California Fire Code
CSD	Community Services District
EDU	Equivalent Dwelling Unit
FAHJ	Fire Authority Having Jurisdiction
FMZ	Fuel Modification Zone
FPP	Fire Protection Plan
FRAP	Fire and Resources Assessment Program
HOA	Homeowner's Association
IFTSA	International Fire Service Training Association
ISO	Insurance Services Office
NFPA	National Fire Protection Association
Proposed Project	Fanita Ranch Planned Community
PSI	Pounds Per Square Inch
RAWS	Remote Automated Weather Station
SFD	Santee Fire Department
SDCFA	San Diego County Fire Authority
SDG&E	San Diego Gas & Electric
USGS	U.S. Geological Survey
VHFHSZ	Very High Fire Hazard Severity Zone
VTM	Vesting Tentative Map
WUI	Wildland Urban Interface

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Executive Summary

This Fire Protection Plan (FPP) addresses fire safety, prevention, and protection for the Fanita Ranch Project (Proposed Project) and for neighboring communities in Santee, San Diego County, California. This FPP provides measures for fire protection that meet and exceed the City of Santee Municipal Code and Ordinance 570. The Proposed Project would be required to meet the adopted codes at time of construction unless the requirements herein are more restrictive.

This FPP identifies the fire risk associated with the Proposed Project's planned land uses, and identifies requirements for fuel modification, building design, construction, and other pertinent development infrastructure criteria for fire protection. The primary focus of this FPP is to provide an implementable framework for suitable protection of the planned structures and the people living and using them, as well as for minimizing potential project-caused fire ignitions. Tasks completed in the preparation of this FPP include data review, code review, site fire risk analysis, land use plan review, fire behavior modeling, and review of a previous site FPP.

Where possible, this FPP incorporates principles of sustainability that are important components of the Proposed Project. Preservation and conservation of resources, including native plant communities, energy and water, along with conservation and maintenance of the site's aesthetics, are important components of the Proposed Project. These principles have been duly considered and integrated into this FPP, with priority assigned to fire protection and safety.

The Project Area is approximately 2,638 acres, of which approximately 987 acres are proposed for the development of a master-planned, residential community and the remaining acreage (1,651 acres) set aside as open space preserve. The Fanita Ranch Project is comprised of three villages: Fanita Commons, Orchard Village, and Vineyard Village. At build-out, the Proposed Project would include single-family and multi-family residential, mixed-use, commercial uses, a public safety site with a fire station, a school site, park and recreation facilities, and related water, sewer, electrical and roadway infrastructure necessary within a master planned community.

The structures in the Proposed Project would be built to ignition-resistant standards per the California Fire and Building Codes and the Santee Municipal Code in effect at the time of building permit issuance. Chapter 7-A of the California Building Code and Santee Municipal Code focuses on structure ignition resistance from flame impingement and flying embers in areas designated high fire hazard areas. All of the site's structures (residences, commercial and retail buildings) could be utilized for temporary refuge during a wildfire. In addition, there would be several designated structures and protected open-air areas that would be enhanced to serve as temporary sheltering sites as a contingency plan if evacuation is considered undesirable. These sites would be designated with input from SFD and may include schools, village core, large parks, or other protected areas. The site's fire hardened structures would be complemented by improved water availability, capacity, and delivery system; firefighting resources on site; fire department access throughout the developed areas; monitored and customized defensible space/fuel modification; interior, automatic fire sprinkler systems in all structures; and other components that would provide a high level of Proposed Project fire ignition resistance. This system of protections provides a redundant and layered fire hardening that has the dual benefit of minimizing on-site ignitions and fire spread, which in turn minimizes the potential for off-site ignitions.

In addition, the Project includes a comprehensive evacuation plan to educate residents and visitors. The evacuation plan also includes evacuation scenario traffic models that indicate that the Project and neighboring residents can be evacuated within 19 minutes for the highest probability evacuation and from 1.1 hours to 1.9 hours, depending on the evacuation area for far less likely scenarios, an acceptable time frame as supported by FEMA (Rhode & Associates 2019 - 2021).

The site fire risk analysis resulted in the determination that wildfire has occurred and would likely occur in the Project vicinity again. It is this reality that resulted in the extensive and redundant fire protection system that will be provided to directly address wildfire hazards and reduce fire risk to residents and the surrounding community to acceptable levels. Among the fire protection features comprising the system of protections is site-wide ignition resistant landscape and structures, providing generous structure setbacks from wildland fuels, which will provide firefighters with needed defensible space. Wildfire in the preserved open space areas is likely to occur periodically, and the Proposed Project has been designed to withstand the potential fire effects. The Fanita Ranch community would be built to withstand significant fire, provide residents at least 2 evacuation routes that lead to at least 3 major roadways, and offer the contingency option to emergency planners and responders of temporarily sheltering persons on site, if considered safer than evacuating.

Based on modeling and analysis of the Project area to assess its unique fire risk and fire behavior, it was determined that the California and Santee Fire Code requirement of a minimum of 100-foot-wide FMZs would be sufficient. However, the Project's FMZ would exceed the Santee Code requirement, including fuel modification zones (FMZs) of a minimum 115 feet (including rear- and side-yards). FMZs would be extended to 165 feet in some areas to provide a greater level of protection based on the modeled and studied fire behavior that may occur in the fuels adjacent to portions of the developed areas.

FMZs, when properly maintained, have proven effective at minimizing structure ignition from direct flame impingement or radiant heat, especially for structures built to the latest ignition resistant codes. The FMZs for Fanita Ranch would be maintained in perpetuity by the homeowner, homeowner's association (HOA), Habitat Preserve Organization, a funded Community Services District (CSD), or similarly funded entity.

Maintenance would occur throughout the year and would be monitored and enforced by the HOA. The HOA would hire a 3rd party FMZ inspector and a 3rd party landscape plan reviewer to ensure that the required fuel reduction work occurs and the FMZs remain functional. The 3rd party FMZ inspector and landscape plan reviewer would inspect the site and prepare reports twice a year (June and late September) that document the functional condition of all HOA maintained property and provide the reports to the HOA and the Santee Fire Department (SFD). If the findings in a report indicate that any of the HOA maintained properties are out of compliance, then the HOA would be responsible to bring the property into compliance. The HOA would hire an "Approved Maintenance Entity" (AME) to perform the maintenance in all HOA maintained property.

Fire service would be provided by the SFD. The anticipated Project population and number of calculated emergency calls would affect the response capabilities of SFD's nearest existing stations. Additionally, the calls from the Project would not be responded to within the City's response time goals from existing stations. As such, the Project would include a SFD-approved, on-site station upon first occupancy that is capable of responding to all of the Proposed Project's buildable lots within the City's General Plan six minute overall response time standard (four minutes travel time). Additionally, the off-site effective fire fighting force (3 engines, 14 firefighters, and battalion chief) can be on site within 8 minutes, consistent with National Fire Protection Association (NFPA) 1710 standard.

1 Introduction

Preparation of this Fire Protection Plan (FPP) has been required for the Fanita Ranch Project (Proposed Project) by the Santee Fire Department (SFD). The FPP's purpose is to evaluate potential impacts resulting from wildland fire hazards and identify project design features necessary to adequately address those risks consistent with City and industry thresholds. Additionally, this FPP generates and memorializes the fire safety requirements of the SFD, which is the Fire Authority Having Jurisdiction (FAHJ). Requirements and recommendations detailed in this FPP are the result of site-specific assessments, fire environment characteristics, and applicable code requirements, and incorporate input from the project applicant and the FAHJ.

This plan has considered, amongst other site factors, the property location, topography (including terrain-formed saddles, chutes, and chimneys), geology, combustible vegetation (fuel types), climatic conditions, and fire history. The plan addresses water supply, access (including secondary/emergency access where applicable), structural ignitability and fire resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, vegetation management, regional wildfire response resources, and evacuation and contingency planning.

This FPP identifies and prioritizes existing fuel reduction treatments and recommends the types and methods of treatment that would provide a suitable wildfire protection buffer between open space and Fanita Ranch persons, property, and infrastructure. The plan requires measures that the Proposed Project's homeowner's association (Fanita Ranch HOA, or similar) would implement to minimize the possibility that wildfire would encroach upon the developed portions of the Project.

The following primary tasks were performed toward completion of this FPP:

- Gathering site specific fire environment (climate, terrain, fuels, fire history) data;
- Collecting site photographs and mapping fuel conditions using 200-scale aerial images. Field observations were utilized to augment existing digital site data in generating the fire behavior models and formulating the recommendations presented in this FPP. Appendix A provides representative photographs of existing site conditions.
- Processing and analyzing the data using the latest Geographical Information System technology;
- Predicting fire behavior using scientifically based fire behavior models, comparing with actual wildfires in similar terrain and fuels, and experienced judgment;
- Analyzing and guiding design of proposed infrastructure;
- Analyzing the existing SFD emergency response capabilities and potential impacts from the Proposed Project;
- Evaluating regional firefighting and emergency medical resources;
- Assessing the risk associated with the Proposed Project and site;
- Analyzing the latest fire safety research and after-fire lessons learned; and
- Preparing this FPP detailing how potential wildfire risk would be addressed through a fire protection system with a redundant layering of fire protection features, materials and methods that would minimize wildfire vulnerability.

1.1 Proposed Project Summary

1.1.1 Location

The Proposed Project is located along the northern portion of the City of Santee (City) in eastern San Diego County (County), California. The City is located approximately 18 miles east of downtown San Diego and the Pacific Ocean. Figure 1 illustrates the Proposed Project's regional location.

The Project lies within Township 15 South, Range 1 West in the southeastern portion of Section 8, central portion of Sections 17 and 20, northwestern portion of Sections 16 and 21, and portions of Sections 3, 4, 9 and 10 of the Poway, La Mesa, El Cajon, and San Vicente Reservoir U.S. Geographical Survey 7.5-minute quadrangle maps, respectively.

Specifically, the Fanita Ranch site encompasses approximately 2,638 acres of vacant land with its most southerly property boundary approximately 0.2 miles north of Mast Blvd (Figure 2, Vicinity Map). The Proposed Project site is bordered on the east by residential development in the unincorporated San Diego County communities of Lakeside and Eucalyptus Hills and to the south by City of Santee residential neighborhoods. The East Elliott portion of Marine Corps Air Station Miramar and the City's Sycamore Landfill are located to the west of the Fanita Ranch Site. The Proposed Project is bordered to the north and west by the County's Goodan Ranch Regional Park and Sycamore Canyon Open Space Preserve.

Fanita Ranch is located on the following Assessor Parcel Numbers:

374-030-02, 374-050-02, 374-060-01, 376-010-06, 376-020-03, 376-030-01, 378-020-46, 50 and 54, 378-030-08, 378-210-01, 04, 10 and 11, 378-220-01, 378-381-49, 378-382-58, 378-391-59, 378-392-61 and 62, 380-031-18, 380-040-43 and 44, and 378-210-03.

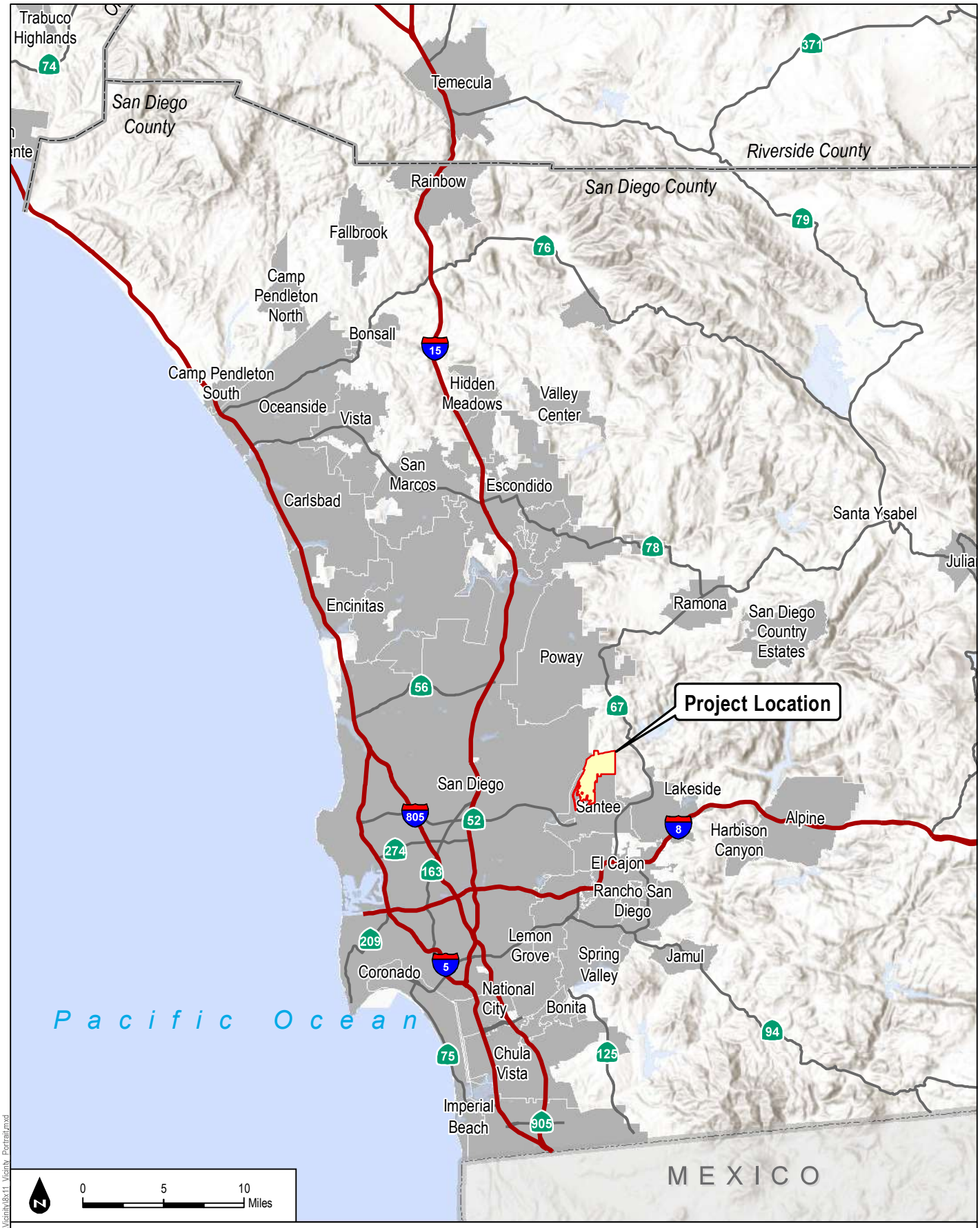

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FIGURE 1

Regional Location Map

FANITA RANCH FIRE PROTECTION PLAN

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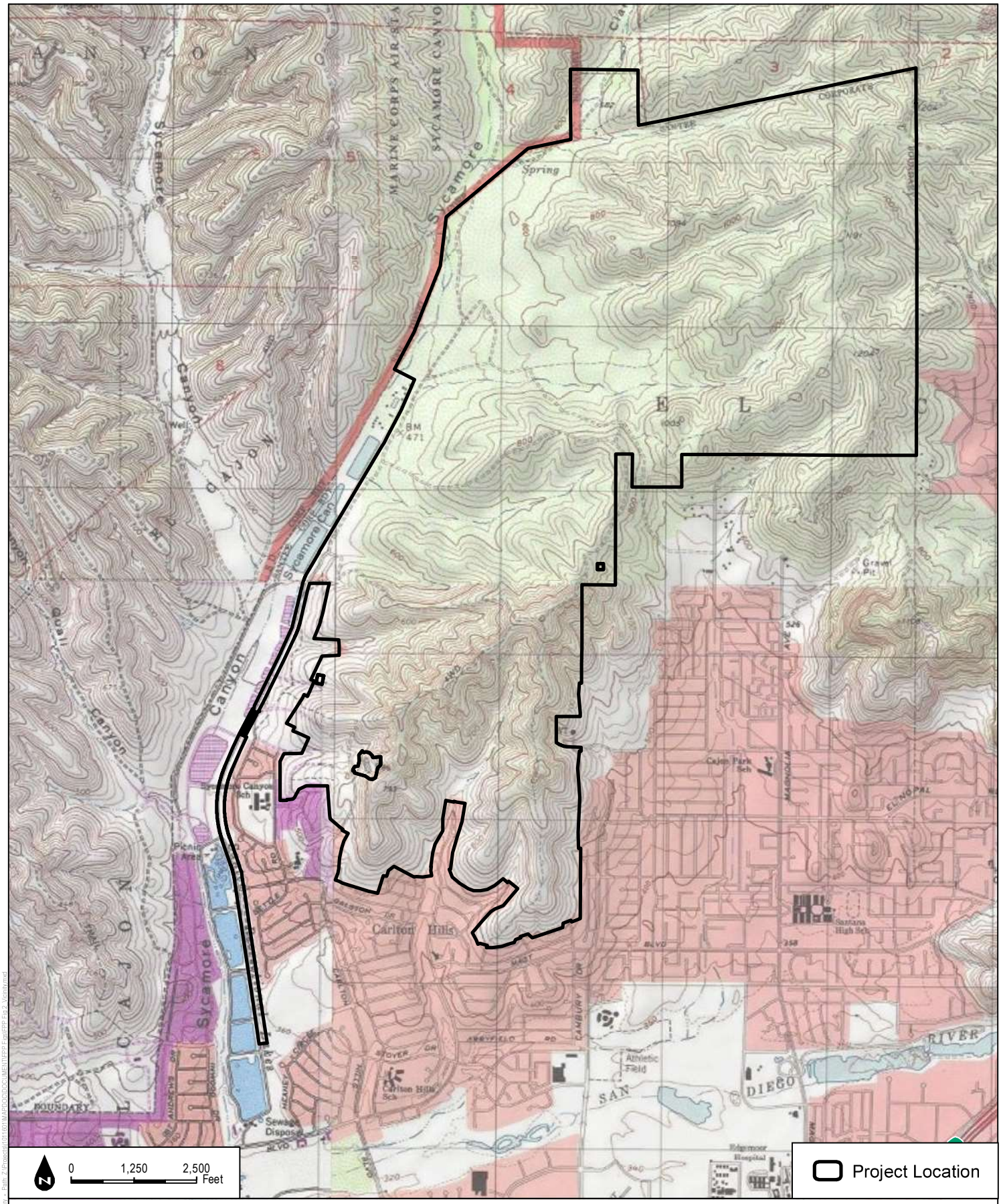

SOURCE: SOURCE: USGS 7.5-Minute Series San Vicente Reservoir, Poway, El Cajon, & La Mesa Quadrangles

FIGURE 2
Vicinity Map

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FANITA RANCH FIRE PROTECTION PLAN

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1.1.2 Fanita Ranch Project Description

Fanita Ranch is a master-planned community consisting of up to 2,949 homes[1], generating an estimated population of up to 9,498 people, up to 80,000 square feet of commercial uses, a school site, parks, open space and agricultural uses. The Proposed Project will preserve more than 60 percent of the project site as a permanent Habitat Preserve (approximately 1,651 acres).

Development is clustered within three villages: Fanita Commons, Orchard Village and Vineyard Village (Figure 3a, Fanita Ranch Community Site Map – North Half). Each village is defined by its unique design theme, location, physical characteristics and mix of housing types and land uses. In addition to the villages, the Proposed Project includes a 31.9-acre Special Use Area located in the southwest portion of the project site (Figure 3b, Fanita Ranch Community Site Map – South Half). The Proposed Project provides approximately 78.5 acres of public and private parks distributed throughout the three villages, including the 31.4-acre community park, 30.8 acres of neighborhood parks and approximately 16.3 acres of mini-parks and paseos. The farm is approximately 27.3 acres, with an additional 10.9 acres of agricultural land uses. Approximately 255.2 acres of open space, outside of the Habitat Preserve, includes manufactured open space slopes, fuel modification areas, trails, water quality/hydromodification basins, pump stations, and water tanks.

Fanita Ranch is anticipated to be developed in four phases over a 10 to 15-year period. Phases may overlap or vary depending on market conditions and may be broken down into smaller sub-phases. Construction is anticipated to begin in 2023. The Special Use Area is not tied to development phasing and may be developed anytime during project build-out.

Each village area and key project components are summarized below.

1.1.2.1 Fanita Commons

Fanita Commons is in the northwest portion of the project site and is planned as the primary activity center for Fanita Ranch. Fanita Commons includes a mixed-use village center, an active-adult neighborhood, a K-8 school site, a community park, a working farm and two preserved natural drainages with an adjoining linear park. With the farm as its focal point, orchards, vineyards, fields and a barn for community events define this village. The mixed-use village center allows for up to 40,000 square feet of commercial uses and residential, recreation and civic uses, including a site for a new City fire station. A 15-acre school site could accommodate 700 students. If the Santee School District does not acquire the school site, the underlying Medium Density Residential (MDR) land use designation may be implemented. In that case, the maximum total number of units permitted in the Development Plan would increase by 59 units for 3,008 units. Fanita Commons includes a total of 768 residential units, including 445 Active Adult homes and 323 homes within the mixed-use village center.

1.1.2.2 Orchard Village

The Orchard Village is located south of Fanita Commons and consists of residential land uses, neighborhood and mini-parks and a centrally located mixed-use village center. The Orchard Village provides a total of 855 residential units, including 454 Low Density Residential (LDR) homes, 368 MDR homes and 33 homes within the mixed-use village center. Open space and a linear riparian area geographically and topographically separate the Orchard

[1] If the school site is not utilized for school purposes, the school site may be developed with residential uses and the total authorized units would be increased to 3,008 homes and the estimated on-site population would decrease to 8,886 persons.

Village from Fanita Commons. Roadways, trails and a pedestrian bridge connect the Orchard Village to Fanita Commons. A neighborhood-serving village center includes up to 10,000 square of retail, office and commercial uses. The Orchard Village also includes neighborhood parks and mini-parks.

1.1.2.3 Vineyard Village

The Vineyard Village is in the northeastern portion of the project site. The Vineyard Village is separated from the other two villages by an open space/wildlife corridor within the Habitat Preserve. Two local streets connect the Vineyard Village to Fanita Commons and the Orchard Village. The Vineyard Village provides a total of 1,326 residential units including, 749 LDR homes, 498 MDR homes and 79 homes within the mixed-use village center. The neighborhood-serving village center includes up to 10,000 square feet of retail and office uses. The Vineyard Village also features agricultural land planned for vineyards, as well as neighborhood parks and mini-parks.

1.1.2.4 Habitat Preserve

The Habitat Preserve is comprised of approximately 1,651 acres of permanently preserved open space. Open space within the Habitat Preserve will be dedicated to the Santee Multiple Species Conservation Program (MSCP) Subarea Plan Preserve currently being prepared by the City of Santee to ensure permanent preservation and management. A Habitat Management Plan will be adopted for the Habitat Preserve to direct the long-term management of biological resources and meet the requirements of the MSCP Subarea Plan. A trail system through the Habitat Preserve will be designed to provide public access, consistent with the MSCP Subarea Plan.

1.1.2.5 The Farm

The Farm is the community focal point for Fanita Ranch. The approximately 27-acre Farm is located along the eastern edge of Fanita Commons and the Orchard Village, near the center of Fanita Ranch. An event barn featuring iconic agrarian architecture will set the theme for the community and provide a venue for special events and farming operations. The working Farm is planned to include terraced vegetable fields, pasture lands, limited housing for employees, raised gardens, limited animal keeping and up to 20,000 square feet of commercial uses. A Community Supported Agriculture program is planned for the Farm. Food grown on the Farm may be distributed to local schools, restaurants and other institutional facilities such as the congregate care and assisted living facilities. Agricultural uses have an underlying open space (OS) land use designation in the Fanita Ranch Development Plan. The Development Plan also includes an "Agricultural Overlay" which provides details regarding permitted agricultural uses.

1.1.2.6 Special Use Area

The Special Use area is comprised of approximately 33 acres in the south portion of the project site. Potential uses may include a solar farm, recreational vehicle and boat storage, above ground agriculture, such as greenhouses or similar uses. Access to the Special Use Area is provided via Carlton Hills Boulevard.

1.1.2.7 Parks, Trails and Recreational Facilities

The Fanita Ranch project includes a coordinated system of parks and non-motorized use trails that connect to the three villages, regional trails and surrounding open space areas, including the Habitat Preserve. The trail system connects to existing off-site trails in Sycamore Canyon Open Space Preserve, Goodan Ranch Regional

Park, Mission Trails Regional Park and Santee Lakes Recreation Preserve. Approximately 78.5 acres of public and private parks are distributed throughout the three villages. The Community Park, located in Fanita Commons, provides for both active and passive recreation opportunities. Neighborhood parks are planned in key locations to provide recreational opportunities within walking distance of all homes. Mini-parks provide trail heads, overlooks and passive and active recreational opportunities. A series of trails and paths connect the Farm to the Fanita Ranch villages.

1.1.2.8 Mobility (On-site)

The Fanita Ranch Development Plan establishes an on-site roadway network and street cross sections designed as a system of complete streets that support motorists, pedestrians, bicyclists and transit users. On-site streets are generally two lanes and include traffic calming measures such as gateways, roundabouts, narrowed travel lanes, on-street bike facilities and parking, a chicane, raised crosswalks and intersection pop-outs. On-site streets that cross open space areas are designed to minimize impacts to sensitive habitat and to accommodate wildlife crossings.

1.1.2.9 Mobility Improvements

Mobility improvements include the extension of three roadways identified in the Santee General Plan Mobility Element, including: 1) Fanita Parkway improvements from Mast Boulevard to the current northern limit; 2) Cuyamaca Street improvements from Mast Boulevard to the current northern limit; 3) the extension of Fanita Parkway from Ganley Road through the project site; 4) the extension of Cuyamaca Street from north of Chaparral Drive through the project site; and 5) the extension of Magnolia Avenue from Princess Joann Road to Cuyamaca Street.

1.2 Applicable Codes/Existing Regulations

This FPP demonstrates that the Proposed Project would comply with applicable portions of the City of Santee Municipal Code and Ordinance No. 570). The Proposed Project would also be consistent with 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 City of Santee. Future construction will comply with the most current adopted codes and ordinances in effect at the time of building permit issuance.

Chapter 7-A of the California Building Code (CBC) focuses primarily on preventing ember penetration into homes, a leading cause of structure loss from wildfires. Thus, it is an important component of the requirements of this FPP given the Proposed Project's wildland urban interface (WUI) location that is within an area statutorily designated a Very High Fire Hazard Severity Zone (VHFHSZ) by CAL FIRE (FRAP 2018). Fire hazard designations are based on topography, vegetation, and weather, amongst 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. It should be noted that roughly 70 percent of San Diego County is designated as very high fire hazard severity zone (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. The Project incorporates all of the required measures and provides for a comprehensive wildfire protection approach that has been shown to perform well in wildfires.

As described in this FPP, the Proposed Project would meet or exceed all applicable Code requirements for building in these higher fire hazard areas. These codes have been developed through decades of after-fire structure evaluations to determine what causes building losses and building saves during wildfires. The resulting fire codes focus on addressing former structural vulnerabilities through construction techniques and materials so that the buildings are resistant to ignitions from direct flames, heat, and embers, as indicated in the currently adopted 2019 California Building Code (Chapter 7-A, Section 701A Scope, Purpose and Application; California Building Standards Commission 2019).

LEGEND

- Specific Plan Boundary
- Village Boundary
- Low Density Residential
- Medium Density Residential
- Active Adult
- Village Center
- Community Park / Neighborhood Park
- Mini-Park (31 Total within Specific Plan Area)*
- School Overlay
- Open Space
  - Open Space - Basin
  - Open Space - Pump Station
  - Open Space - Water Tank
- Agriculture Overlay
- Habitat Preserve

**There is a total of 8 mini-parks in M-9.*

Vineyard Village
Fanita Commons
Orchard Village
HP
AC-1
Fanita Parkway
CP-1
S-1
NP-8
NP-3
OS
Street "A"
Street "V"
Street "W"
OS-PS
OS-B
OS-WT
NP-4
NP-5
NP-6
NP-7
M-1
M-2
M-3
M-4
M-5
M-6
M-7
M-8
M-9
R-2
R-3
R-4
R-5
R-6
R-7
R-8
R-9
R-10
R-11
R-12
R-13
R-14
R-15
R-16
R-17
R-18
R-19
R-20
R-21
R-22
R-23
R-24
R-25a
R-25b
A-1
A-2
A-3
A-4
A-5
A-6
A-7
A-8
A-9
VC-1
VC-2
VC-3
VC-4
VC-5
VC-6
VC-7
VC-8
VC-9
VC-10
VC-11
VC-12
VC-13
VC-14
VC-15
VC-17a
VC-17b
VC-16a
VC-16b
VC-18
NP-1
NP-2
Cuyamaca St.
Magnolia Ave.
Existing SDG&E Easement to Remain
not to scale

Match Line: See Figure 3b

SOURCE: SPECIFIC PLAN 2019

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FIGURE 3a
Fanita Ranch Community Site Map—North Half

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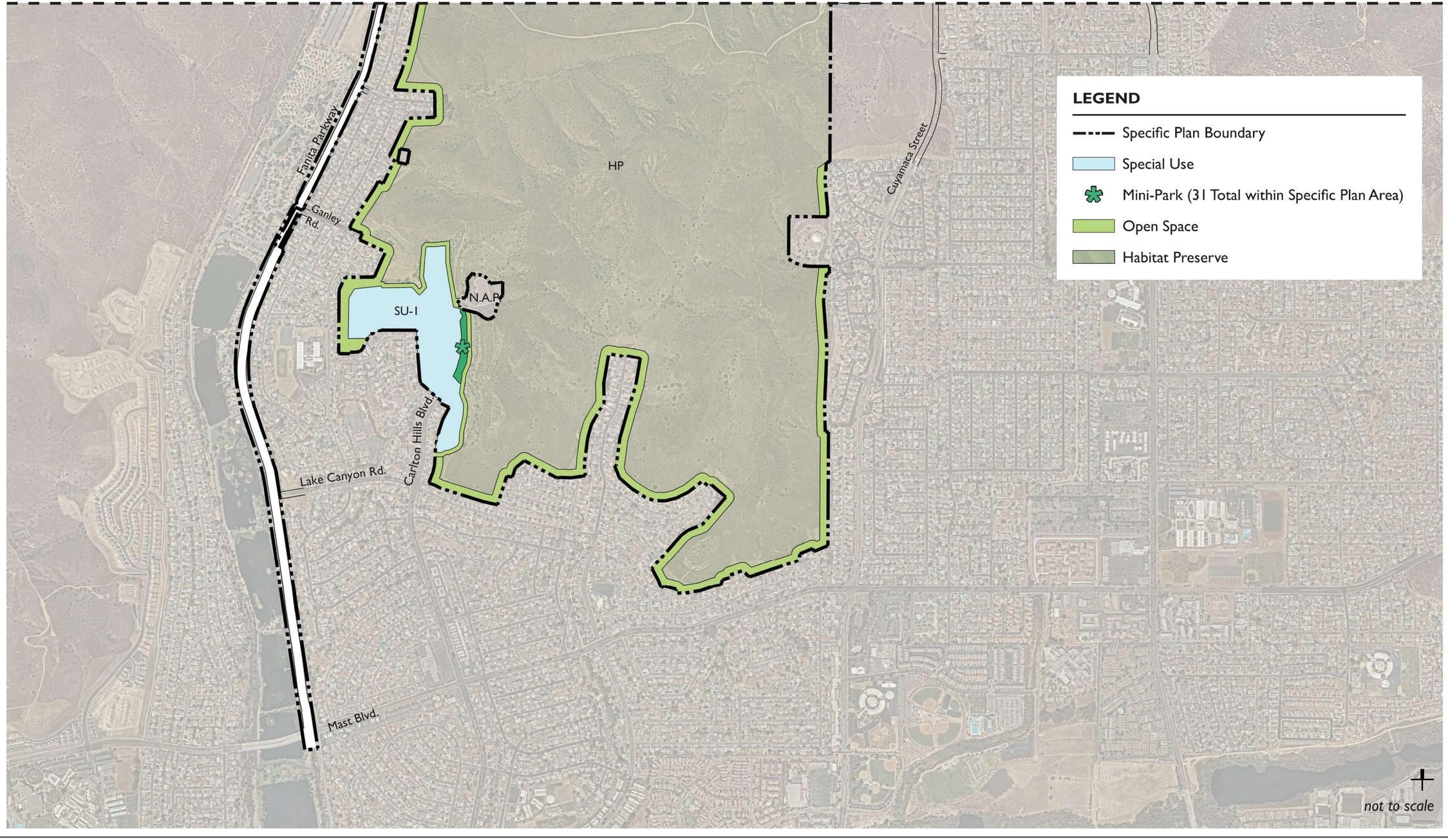
Match Line: See Exhibit 3a



SOURCE: SPECIFIC PLAN 2019

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FIGURE 3b
Fanita Ranch Community Site Map—South Half

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2 Proposed Project Site Risk Analysis

2.1 Field Assessment

Following extensive review of available digital site information, including topography, vegetation types, fire history, and the Proposed Project's site plan, Dudek fire protection planners conducted field assessments of the Fanita property and the neighboring region during August 2016, in order to confirm digital data and fill any identified data gaps.

Among the field tasks that were completed are:

- Vegetation estimates and mapping refinements
- Fuel load analysis
- Topographic features documentation
- Photograph documentation
- Confirmation/verification of hazard assumptions
- Ingress/egress documentation.

Site photographs were collected (Appendix A: Photograph Log) and fuel conditions were mapped using aerial images. Field observations augmented existing site data in generating the fire behavior models and formulating the requirements this FPP details.

The site has not experienced notable change in terms of vegetation (fuel) or terrain since the 2016 site assessment. Additionally, the fire behavior analysis conducted within this FPP (Section 4) was based on the site's climax vegetation condition (i.e., extreme conditions) in order to simulate a worst-case fire scenario. Designing and planning community protection features on worst-case fire conditions is important, particularly if the site will include the capability of temporary on-site sheltering of residents.

2.2 Site Characteristics and Fire Environment

The following sections discuss the characteristics of the Proposed Project site at a regional scale. The intent of evaluating conditions at this macro-scale is to provide a better understanding of the regional fire environment, as wildfires occurring within the vicinity of the Proposed Project would not be constrained by property boundary delineations or individual developments and could, in some instances, burn into the Fanita Ranch Preserve areas.

2.2.1 Topography

Topography influences fire risk by affecting fire spread rates. Typically, steeper terrain results in faster fire spread up-slope and slower spread down-slope. Terrain that forms a funneling effect, such as chimneys, chutes or saddles on the landscape can result in especially intense fire behavior. Conversely, flat terrain tends to have little effect on fire spread, resulting in fires that are driven primarily by vegetation and/or wind.

The Proposed Project's surrounding topography varies including prominent ridgelines with large rock outcroppings and steeper hillsides to the east and north. The Fanita Ranch property is characterized by two primary drainages (Sycamore Canyon and Clark Canyon) and their associated sub-drainages. Both canyons intersect just outside the northwestern corner of the property and drain along its western boundary exiting the property into the Santee Recreational Lakes.

On-site elevations range from 417 feet above mean sea level (AMSL) in the southeast corner of the property to 1,215 feet AMSL near the northeast corner of the property. The majority of the terrain is moderate and steep hillsides and ridges that separate the site's sub-drainages. Large rock outcroppings commonly occur throughout the property's slopes. The slopes and drainages are generally trending east to west and are in alignment trending with the extreme Santa Ana wind events, which can influence fire spread by creating wind-driven fires.

2.2.2 Existing Land Use

The project area is largely undisturbed and the dominant vegetation types are chaparral, grasslands, and Diegan coastal sage scrub. A number of dirt roads and trails crisscross the project site. Over the years, portions of the property have been used for various unauthorized land uses, including horseback riding, hiking, mountain biking, off-roading, motorcycling, and occasional dumping. Accessible areas on the property are fenced and gated to inhibit unauthorized vehicular use, although trespassing recreational uses continue.

2.2.3 Climate

Inland San Diego County and the project area'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" (WRCC 2017). Wet winters and dry summers with mild seasonal changes characterize the Southern California climate. This 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 area during July is around 88°F. Precipitation typically occurs between December through April with 12 inches of rain per year[2]. 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 (mph) 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% 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 this site, include 92°F temperatures in summer and winds of up to 50 mph during the fall based on worst-case conditions from San Diego County data sets during the Cedar Fire. Relative humidity of 12% or less is possible during fire season.

2.2.4 Fuels (Vegetation)

The Proposed Project footprint and preserve areas are currently undeveloped and are comprised of 28 vegetation communities and/or land cover types that were mapped by Dudek biologists (Dudek 2020a). Extensive vegetation

[2] http://www.bestplaces.net/climate/city/california/santee

type mapping is useful for fire planning because it enables each vegetation community to be assigned a fuel model, which is used by a software program and interpreted by experienced fire planners to predict fire characteristics, as discussed in Section 4 and Appendix B. Vegetative fuels and land cover types on site include chaparral (granitic southern mixed chaparral); Diegan coastal sage scrub, which includes disturbed and restored versions as well as other varieties (coastal sage scrub – valley grassland (including disturbed), coastal sage scrub – baccharis dominated, disturbed coastal sage scrub – non-native grassland); marsh and swamp (coastal and valley freshwater marsh (including disturbed) and cismontane alkali marsh); native grassland; non-native grassland; vernal pools; coast live oak woodland; riparian and wetland (arundo-dominated riparian, southern arroyo willow riparian forest, southern willow scrub (including disturbed), mulefat scrub, southern sycamore-alder riparian woodland, and non-vegetated channel); and disturbed and developed areas (including disturbed wetland) (Figure 4, Vegetation Map and Table 1, Vegetation Communities and Land Covers within the Fanita Ranch Project Area (including Off-Site Areas)). More detailed information regarding the site's plant communities and land cover types is provided in Dudek's Biological Resources Technical Report for the Fanita Ranch Project (2020a).

The native vegetation is adapted to periodic wildfire events. Fire history information evaluated in relation to Fanita Ranch, as described in section 2.2.7, indicates that a majority of the site's vegetation last burned in 2003. As such, the property's vegetation is considered in ecological succession, with younger plants and reduced fuel loading, but over time, without ecological or man-made disturbances, would be expected to increase in biomass.

Table 1. Vegetation Communities and Land Covers within the Fanita Ranch Project Area (including Off-Site Areas)

General Vegetation Community/Land Cover Category	Vegetation Type (Holland/ Oberbauer Code)	On Site	Off Site	Total
Disturbed and Developed Areas (10000)	Disturbed Habitat (11300)	115.21	5.43	120.64
	Disturbed Wetland[2] (11200)	0.09	—	0.09
	Non-native Vegetation (11000)	6.05	—	6.05
	Urban/Developed (12000)	9.88	3.50	13.37
	Disturbed and Developed Areas Subtotal[1]	*131.23*	*8.93*	*140.15*
Scrub and Chaparral (30000)	Diegan Coastal Sage Scrub[2] (32500)	1,017.13	6.26	1,023.39
	Diegan Coastal Sage Scrub (disturbed)[2] (32500)	259.85	11.99	271.84
	Diegan Coastal Sage Scrub (restored)[2] (32500)	9.57	0.17	9.74
	Diegan Coastal Sage Scrub/Valley Needlegrass Grassland[2] (32500/42110)	63.79	0.10	63.89
	Diegan Coastal Sage Scrub/Valley Needlegrass Grassland (disturbed)[2] (32500/42110)	51.10	2.38	53.47
	Diegan Coastal Sage Scrub/Non-native Grassland (disturbed)[2] (32500/42200)	27.47	—	27.47
	Diegan Coastal Sage Scrub–Baccharis-dominated[2] (32530)	21.60	—	21.60
	Granitic Southern Mixed Chaparral[2] (37121)	601.06	—	601.06
	Scrub and Chaparral Subtotal[1]	*2,051.57*	*20.90*	*2,072.47*
Grasslands, Vernal Pools, Meadows, and Other Herb Communities (40000)	Valley Needlegrass Grassland[2] (42110)	113.82	—	113.82
	Valley Needlegrass Grassland (disturbed)[2] (42110)	64.14	—	64.14

Table 1. Vegetation Communities and Land Covers within the Fanita Ranch Project Area (including Off-Site Areas)

General Vegetation Community/Land Cover Category	Vegetation Type (Holland/ Oberbauer Code)	On Site	Off Site	Total
	Non-native Grassland[2] (42200)	211.65	2.72	214.36
	Non-native Grassland/Non-native Vegetation (42200/11000)	14.96	—	14.96
	Vernal Pool (44000)[2,3]	0.80	0.01	0.81
Grasslands, Vernal Pools, Meadows, and Other Herb Communities Subtotal[1]		*405.37*	*2.73*	*408.10*
Bog and Marsh (50000)	Cismontane Alkali Marsh[2] (52310)	0.40	—	0.40
	Coastal and Valley Freshwater Marsh[2] (52410)	0.02	—	0.02
	Coastal and Valley Freshwater Marsh[2] (disturbed) (52410)	0.12	—	0.12
Bog and Marsh Subtotal[1]		*0.54*	—	*0.54*
Riparian and Bottomland Habitat (60000)	Southern Arroyo Willow Riparian Forest[2] (61320)	1.54	—	1.54
	Southern Sycamore-Alder Riparian Woodland[2] (62400)	3.23	—	3.23
	Mulefat Scrub[2] (63310)	1.86	—	1.86
	Southern Willow Scrub[2] (63320)	0.86	—	0.86
	Southern Willow Scrub (disturbed)[2] (63320)	0.48	—	0.48
	Non-vegetated Channel or Floodway[2] (64200)	9.82	0.05	9.88
	Arundo-Dominated Riparian[2] (65100)	1.93	—	1.93
Riparian and Bottomland Habitat Subtota[1]		*19.73*	*0.05*	*19.78*
Woodland (70000)	Coast Live Oak Woodland[2] (71160)	29.63	—	29.63
Woodland Subtotal[1]		*29.63*	—	*29.63*
Sensitive Vegetation Subtotal[2]		*2,506.92*	*23.68*	*2,530.60*
Grand Total[1]		**2,638.06**	**32.60**	**2,670.66**

Notes:
1 Totals may not sum due to rounding.
2 Sensitive vegetation community in the Draft Santee MSCP Subarea Plan (City of Santee 2018).

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 less flammable, but would burn under certain, more intense fire conditions. The Proposed Project footprint would be converted to roads, structures, and maintained landscape vegetation. Native vegetative fuels allowed to remain within the outer thinning FMZs and riparian areas would be modified as a result of development. The modification would include altering current densities, distributions, and species composition. The vegetation outside the Proposed Project's perimeter FMZs are the primary wildfire concern for Fanita Ranch. These areas would be preserved as open space and would continue to be dominated by chamise-chaparral, southern mixed chaparral, Diegan coastal sage scrub, and non-native grassland fuel beds. The Proposed Project's fire protection features, including the code-exceeding FMZs, were designed to be fire-hardened for the type of wildfire these areas could produce and provide a system of fire protection, as described throughout this FPP.

Project Boundary

Vegetation Communities and Land Cover Types

- ARU, Arundo-Dominated Riparian
- CAM, Cismontane Alkali Marsh
- CLOW, Coast Live Oak Woodland
- CSS, Diegan Coastal Sage Scrub
- dCSS, Disturbed Diegan Coastal Sage Scrub
- rCSS, Restored Diegan Coastal Sage Scrub
- dCSS/NNG, Disturbed Diegan Coastal Sage Scrub/NNG
- CSS/VGL, Diegan Coastal Sage Scrub/VGL
- dCSS/VGL, Disturbed Diegan Coastal Sage Scrub/VGL
- CSSB, Diegan Coastal Sage Scrub: Baccharis-dominated
- DEV, Developed Land
- DH, Disturbed Habitat
- DW, Disturbed Wetlands
- FWM, Freshwater Marsh
- dFWM, Disturbed Freshwater Marsh
- GSMX, Granitic Southern Mixed Chaparral
- HW, Herbaceous Wetlands
- dHW, Disturbed Herbaceous Wetlands
- MFS, Mule Fat Scrub
- NNG, Non-Native Grassland
- NNG/NNV, Non-Native Grassland/Non-native Vegetation
- NNV, Non-native Vegetation
- NVC, Non-Vegetated Channel or Floodway
- OW, Open Water
- SARW, Southern Sycamore-Alder Riparian Woodland
- SWRF, Southern Arroyo Willow Riparian Forest
- SWS, Southern Willow Scrub
- dSWS, Disturbed Southern Willow Scrub
- VGL, Valley Needlegrass Grassland
- dVGL, Disturbed Valley Needlegrass Grassland
- VP, Vernal Pool

0 700 1,400 Feet

SOURCE: Bing Maps, 2017

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FIGURE 4

Vegetation Map

FANITA RANCH FIRE PROTECTION PLAN

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2.2.5 Fuel Load

Unmaintained, native vegetation within approximately 300 feet of the outer fuel modification zones is the area of highest concern for determining what effects wildfire may have on the Proposed Project's landscape and structures. It is these fuels, which if ignited, would burn toward the provided fuel modification zones that are designed to reduce flame length, fire spread, and fire intensity as fire moves closer to the built portions of the Proposed Project.

The importance of vegetative cover on fire suppression efforts is its role in affecting fire behavior. For example, while fires burning in grasslands may exhibit lower flame lengths than those burning in chaparral fuels, fuel flammability and fire spread rates in grasslands are often much more rapid than those in other vegetation types.

Fuel loading in non-native grassland is estimated to be 0.4 ton/acre, while that in chaparral-sage scrub is estimated between 8.4 – 8.6 tons/acre (Brown 1982, Scott 2005, Weise 1997)[3]. The fuel load is the amount of fuel available to wildfire. Shrub dominated plant communities tend to include higher fuel loads than grass dominated plant communities due to the accumulated woody material and duff. Tree dominated communities may include higher fuel loads than shrub dominated landscapes. However, there are many other facets of fire behavior that govern fire ignition and spread. Therefore, because an area may include higher fuel loads, it does not necessarily mean that it presents a higher fire risk.

2.2.6 Vegetation Dynamics

Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (bark thickness, leaf size, branching patterns), and overall fuel loading. For example, the native shrub species that compose the chaparral communities on site are considered to be less likely to ignite, but would exhibit higher potential hazard (higher intensity heat and flame length) than grass dominated plant communities (fast moving, but lower intensity) if ignition occurred. The corresponding fuel models for each of these vegetation types are designed to capture these differences. Additionally, vegetative cover influences fire suppression efforts through its effect on fire behavior. For example, while fires burning in grasslands may exhibit lower flame lengths and heat outputs than those burning in native shrub habitats, fire spread rates in grasslands are often more rapid.

As described, vegetation plays a significant role in fire behavior, and is an important component to the fire behavior models discussed in this report. A critical factor to consider is the dynamic nature of vegetation communities. Fire presence and absence at varying cycles or regimes disrupts plant succession, setting plant communities to an earlier state where less fuel is present for a period of time as the plant community begins its succession again. In summary, high frequency fires tend to convert shrub lands to grasslands or maintain grasslands, while fire exclusion tends to convert grasslands to shrub lands over time as shrubs sprout back or establish and are not disturbed by repeated fires.

Manipulating vegetation growth through maintenance is a key component in the overall establishment and maintenance of the proposed FMZs on site. The FMZs on this site would consist of irrigated and maintained landscapes as well as thinned native fuel zones that would be subject to regular "disturbance" in the form of maintenance and would not be allowed to accumulate excessive biomass over time, which results in reduced fire ignition, spread rates, and intensity.

[3] Fuel load estimates are based on fuel model characteristics and not actual field sampling of dead and down woody debris at the project site.

Conditions adjacent to the Proposed Project's footprint (outside the FMZs), where the wildfire threat would exist post-development, are currently classified as low to moderate fuel loads due to the higher percentage of grasslands intermixed with sparse stands of chamise chaparral and coastal sage scrub fuels. However, climax vegetation state (undisturbed brush stands that are not disturbed for an extended period of 50 years or more) includes more uniform and dense stands of sage scrub-chaparral fuels, which were employed for a cautious modeling approach to represent worst-case (i.e., max fuels) wildfire scenarios around the perimeter of the Project.

2.2.7 Fire History

Fire history is an important component of an FPP. Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources, amongst others. Fire history represented in this FPP utilizes the Fire and Resource Assessment Program (FRAP) database. FRAP summarizes fire perimeter data dating to the late 1800's, but which is incomplete due to the fact that it includes only fires over 10 acres in size and has incomplete perimeter data, especially for the first half of the 20th century (Syphard and Keeley 2016). However, the data does provide a summary of recorded fires and can be used to show whether large fires have occurred in the project area, which indicates whether they may be possible in the future.

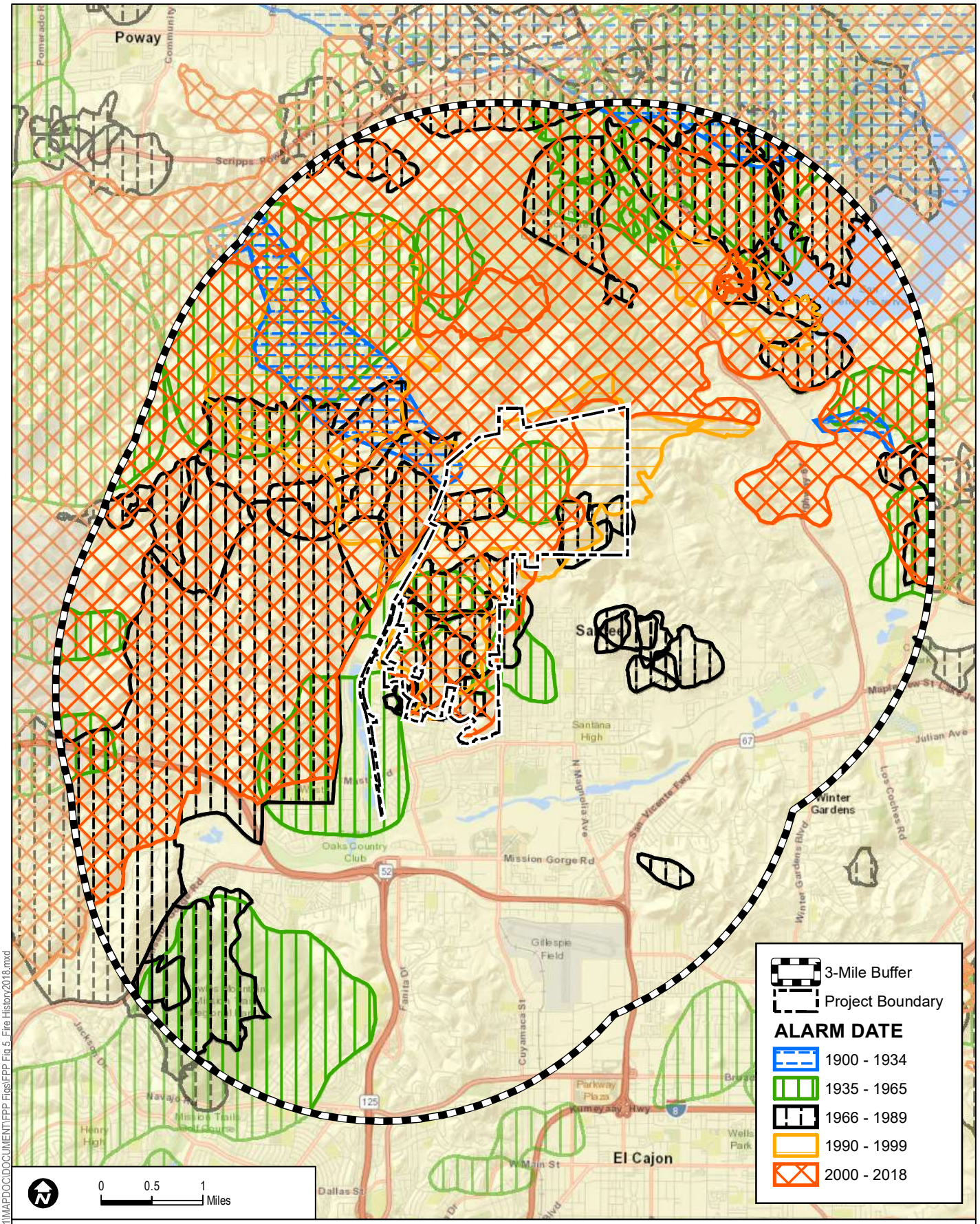
Within three miles of Fanita Ranch, there have been 65 fires recorded by CAL FIRE since 1910 (FRAP 2018). A total of 15 fires, ranging from 25 acres (un-named 1974 fire) to 280,278 acres (Cedar Fire) are noted to have burned through the project site dating back to 1910. Recorded fires since 1910 that have burned onto the site are listed in Table 2. The most notable fire (Cedar fire) occurred during October and November 2003, and burned large areas of central San Diego County, including a large portion of the Fanita Ranch. 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[4]. Figure 5, Fire History Map presents a graphical view of the project area's recorded fire history.

Table 2. Fanita Ranch Vicinity Fire History (three mile radius)

Fire Year[1]	Fire Name	Total Area Burned (acres)
1910	Un-named	1,315
1941	Un-named	406
1942	Un-named	1,221
1943	Un-named	292
1950	Quarry	281
1966	Carlton Hills	330
1974	Un-named	155
1974	Un-named	68
1974	Un-named	25
1975	Un-named	25
1980	Assist #69	745
1981	Assist #72	696
1987	Assist #38	380
1989	Magnolia	46,291
2003	Cedar	280,278

Note:
Based on polygon GIS data from CALFIRE's Fire and Resource Assessment Program (FRAP), which includes data from CAL FIRE, USDA Forest Service Region 5, BLM, NPS, Contract Counties and other agencies. The data set is a comprehensive fire perimeter GIS layer for public and private lands throughout the state and covers fires 10 acres and greater between 1878–2018.

[4] https://en.wikipedia.org/wiki/Cedar_Fire_(2003)



ESRI 2018; FIRE DATA-CALFIRE FRAP DATA 2018

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FIGURE 5
Fire History Map

FANITA RANCH FIRE PROTECTION PLAN

Path: Z:\Projects\10116001\MAPDOC\DOCUMENT\FPP Figs\FPP Fig 5_Fire History2018.mxd

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Based on Fanita Ranch fire history data for the project vicinity, fire return intervals range between one and twenty-five years, indicating significant wildfire potential in the region and the potential for the Proposed Project site to be subject to occasional wildfire encroachment, most likely from the large expanses of open space to the north and east. Note that once the Proposed Project is built, the fire spread patterns on the Fanita Ranch would be modified as the Proposed Project would present a substantial fuel break, significantly interrupting the continuous fuels across the site. The Proposed Project would reduce wildfire intensity, speed, and exposure for communities nearby Fanita Ranch through ignition-resistant construction, removing fuels, providing ongoing maintenance (including at least 100 feet of Project-provided fuel modification adjacent to existing homes at the Project's edge), providing an onsite fire station, etc., as further described in Section 6.2.1.

2.2.8 Analysis of Wildfire Risk from Adding New Residents

Humans (i.e., human related activities or human created features, services (i.e., powerlines and electrical equipment), or processes) are responsible for the majority of California wildfires (Syphard et al. 2007, 2008; Romero-Calcerrada et al. 2008). Certain human activities 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 in the case of arson. Equipment and powerlines cause the most fires in San Diego County. After that, 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) (Romero-Calcerrada et al 2008)). In Southern California, and San Diego County, the population living at, working in, or traveling through the wildland urban interface 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 (CAL FIRE 2019; Santa Barbara County Fire Department 2019).

Research indicates that the type of dense, master planned developments, like Fanita Ranch, are not associated with increased vegetation ignitions. Syphard and Keeley (2015) summarize all wildfire ignitions included in the CALFIRE Fire and Resource Assessment Program (FRAP) database dating back over 100 years. They found that in San Diego County, equipment-caused fires were by far the most numerous -- and these also accounted for most of the area burned -- followed closely by the area burned by powerline 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 San Diego County, ignitions were more likely to occur close to roads and structures, and at intermediate structure densities.

As exhibits 1 through 3 illustrate, housing density directly influences susceptibility to fire because in higher density developments, there is one interface (the community perimeter) with the wildlands whereas 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. The intermix includes housing amongst the unmaintained fuels whereas the proposed project converts all fuels within the footprint and provides a wide, managed fuel modification zone separating homes from unmaintained fuel and creating a condition that makes defense easier. Syphard and Keeley go on to state that "The WUI, where housing density is low to intermediate is an apparent influence in most ignition maps," further enforcing the conclusion that lower density housing poses a higher ignition risk than higher density communities. They also state that "Development of low-density, exurban housing may also lead to more homes being destroyed by fire" (Syphard et al. 2013). A vast wildland urban interface already exists in the area adjacent to Fanita Ranch, 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 this FPP,

Fanita 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 Fanita Ranch would not be expected to materially increase the risk of vegetation ignitions.

Exhibit 1. Example higher density development that is ignition resistant and excludes readily ignitable vegetative fuels throughout and provides a perimeter fuel modification zone. This type of new development requires fewer fire resources to defend and can minimize the likelihood of on-site fires spreading off-site.

Exhibit 2. Exhibit 2. Example of moderate density development. Homes are located on larger properties and include varying levels of ignition resistance and landscape/fuel modification provision and maintenance. This type of development results in a higher wildland exposure level for all homes and does not provide the same buffers from wildfire encroaching onto the site, or starting at a structure and moving into the wildlands as a higher density project.

Exhibit 3. Example of "lower density" development where homes are interspersed amongst wildland fuels, are of varying ages, and include varying levels of fuel modification zone setbacks. Homes are exposed on most or all sides by flammable vegetation and properties rely solely on owners for maintenance, are often far distances from the nearest fire station, and have minimal buffer from on-site fire spreading to wildlands.

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 (Keeley et al. 2012). This is not the case with the Proposed Project as the landscapes are managed and maintained to remove exotic fuels that may establish over time.

As discussed above, 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 wildfire of fuels and minimize or prevent wildfire from transitioning into a higher density community such as Fanita Ranch also serve to minimize or prevent on-site fires from transitioning into the wildlands. Customized project FMZs are crucial as the strategic design and placement of fuels treatments can disrupt or slow fire spread, reduce fire intensity, and facilitate fire suppression within a landscape (Braziunas et al., 2021). This is true regardless of the direction a vegetation fire may be burning – whether toward a community or from within a community. The risk of a structure being destroyed is significantly lower when defensible space is implemented on both shallow and steep properties (Syphard et al., 2014). Even if just half the landscape is treated, the percentage of houses exposed to fire can decrease from 51% to 16% (Braziunas et al., 2021). Moreover, when FMZs are designed properly, they not only protect homes but also the surrounding environment. For example, when the Tahoe Basin experienced the Angora Fire in 2007, fuel treatments had the dual effect of saving homes and increasing forest survival. (Safford et al., 2009.) In areas where fuel management had been carried out prior to the Angora Fire, home loss was significantly reduced in the adjacent community and 85% of the trees survived, as compared to the 22% that survived in untreated areas. (Safford et al., 2009.) Fuel management treatments also facilitated the ecological benefit of reduced fire severity, including higher post-fire soil litter cover, higher herbaceous plant cover, higher diversity, and lower levels of invasive beetles. (Safford et al., 2009.) At a minimum, managing defensible space can reduce risk across multiple scales by damping fire risk, reducing the impact of fire, and in turn reducing annual fire risk. (Braziunas et al., 2021.)

Further, the requirement that all structures will include interior fire sprinklers significantly reduces the likelihood that a building fire spreads to the point of flashover, where a structure will burn beyond control and produce 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 fuel modification zones are positioned throughout the development areas as well as the first zones on the perimeter of the project. Irrigated zones include plants with high internal moisture and spacing between plants and plant groups that 1) make it difficult to ignite and 2) make it difficult for fire to spread plant to plant. Lastly, the on-site fire station and additional humans on the site result in fast detection of fires and fast firefighter response, a key in limiting the growth of fires beyond the incipient stage.

Trails exist today in and around the Fanita Ranch development envelope, and are frequented by a myriad of locals for hiking, mountain biking, horseback riding, and motorcycle/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 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, also are delayed in comparison to post-construction of the Fanita project. With the Project, motorized activities on the trails would be prohibited and enforced. If a hiker or mountain biker was to start a fire, detection and response would be anticipated on a fast timeline due to the residents that would be living within the Fanita Ranch community with the ability to detect fires throughout the property. The quick detection and call to 911 would result in faster response from the on-site fire station, which can reach anywhere within the project in 6 minutes or less travel time. The Project-provided trail would enable certain SFD vehicles access to facilitate fast response to various emergency scenarios. If a fire is detected and cannot be accessed by a responding fire engine, it can be sized up and additional aerial and other support requested quickly.

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3 Determination of Significance Thresholds

According to Appendix G of the CEQA Guidelines, if located in or near state responsibility areas or lands classified as VHFHSZ, a significant impact related to wildfire would occur if the project would:

1. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.
2. Substantially impair an adopted emergency response plan or emergency evacuation plan.
3. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
4. 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.
5. 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.

3.1 Expose People or Structures, either Directly or Indirectly, to a Significant Risk of Loss, Injury or Death involving Wildland Fires

The wildland fire risk and features prescribed in this FPP 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 the many fire protection and prevention features being applied. Construction activities can lead to increased potential for vegetation ignitions; however the Project addresses this potential risk through its focused Construction Fire Prevention Plan - CFPP (Appendix H). The CFPP's fire prevention and safety measures, along with its limitations on work activities during fire weather, address the potential for ignitions and therefore, 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 biannual FMZ inspections 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 in an effort to further reduce fire risk to those older homes. In addition, the Proposed Project would provide for fast firefighter response on and offsite (4-minute travel time to anywhere onsite), would include an onsite fire station, and provide 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 Fanita Ranch Wildland Fire Evacuation Plan, 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). 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 ultra 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 Proposed 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 Proposed Project's fire prevention features and shelter-in-place contingency would further mitigate risks to public safety. The Proposed Project's fire protection features result in a redundant and layered fire protection system that is 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, (5) The Lakes, and (6) Santa Clarita Valley's Stevenson Ranch). Because of these fire protection features, maintenance, and enforcement requirements, it will 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 Proposed 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 onsite. The Proposed Project's redundant fire protection features, quick emergency response, evacuation routes and plans, and the contingency option of sheltering on site in protected spaces will ensure that people and structures would not be exposed to a significant risk of loss, injury or death involving wildland fires.

3.1.1 Ignition-Resistant Structures

The best mitigation to reduce a project's likelihood to start on-site and off-site fires is to reduce the likelihood that the project's structural elements will 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 will 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. (Sommer, 2019.) 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 (Sommer, 2019). However, in 1996, the community made strides to adapt to a very high fire

hazard environment (Sommer, 2019). The community implemented modern fire codes, developed defensible space rules, required home hardening measures, and imposed vegetation restrictions (Sommer, 2019). 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, not a single 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" (San Diego County, 2007). 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 without a single home lost, as depicted by Exhibits 4, 5, and 6.

Exhibit 4. 2003 Simi Fire. Note the location within an open space preserve and the wide FMZs surrounding ignition resistant structures. No homes were lost during the 2003 wildfires that threatened the community, and residents remained on site during the event

Exhibit 5. Freeway Complex Fire. The Casino Ridge community, surrounded by vegetative fuels in open space survived with no homes lost or damaged, despite fire burning completely around the community.

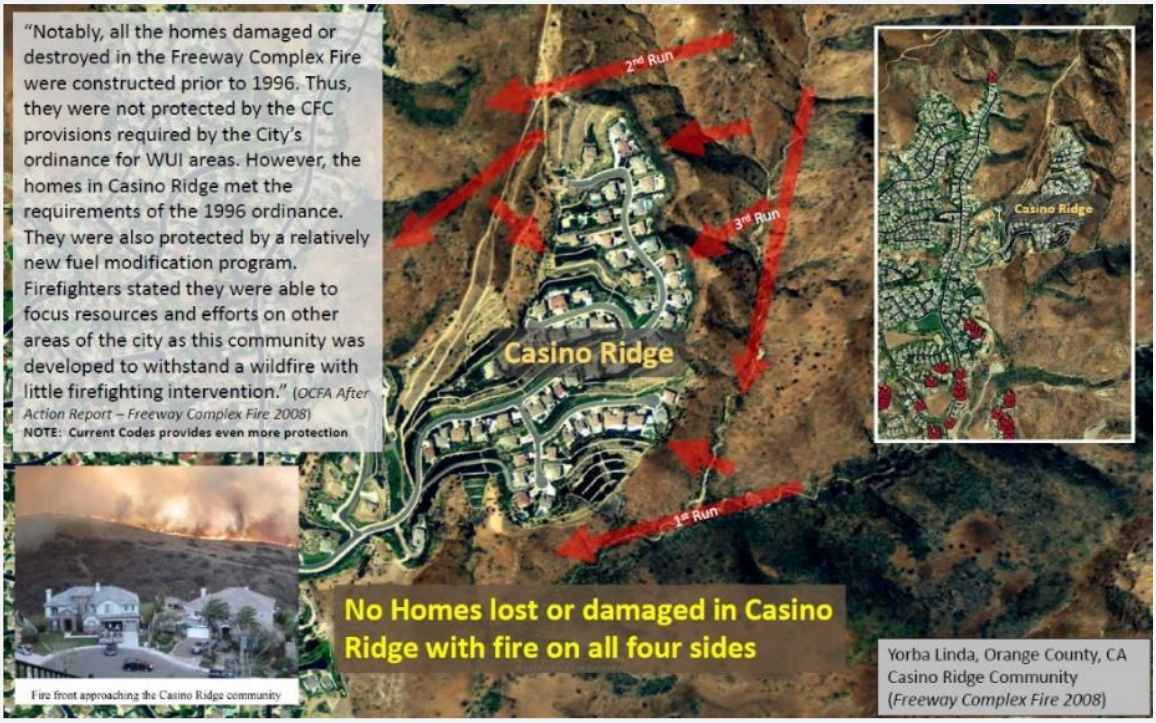

Exhibit 6. 2020 Silverado Fire. Despite extreme fire weather conditions and open space fuel, no homes were damaged or lost in the new, fire hardened community protected by perimeter FMZs and ignition resistant structures.

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 includes a Homeowner's Association (HOA) that would be 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 fuel modification zones. 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 Proposed Project's HOA will also enforce homeowner compliance with the Project's fuel management plan on an ongoing basis. In addition, the HOA will 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 being one of the reasons why Rancho Santa Fe was able to survive the Witch Creek fire in 2007 (Sommer, 2019).

3.1.2 Code-Required, Proven 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 are worth listing because 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 would 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;
- Non-flammable 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;

- Multipane 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 noncombustible 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.
- 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 Area'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 (NFPA 2021) of controlling fire in 96% of reported fires, and statistics indicate that fires in homes with sprinklers resulted in 82% lower property damage and 68% 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.

3.1.3 Effective Fuel Modification Zones

Provisions for modified fuel areas of at least 100 feet separating wildland fuels from structures have also 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. Fanita Ranch'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 Proposed 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 Proposed Project in an effort to further reduce fire risk to those older homes.

The FMZs are designed to not only minimize wildfire encroaching upon the community, but also to 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 the SFD and the 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 do not just protect homes. When they are incorporated into the place-based design of the fire-hardened community, such as the Project, they also serve as a buffer for natural areas and surrounding communities. In fact, FMZs were originally implemented by CAL FIRE in order to protect natural resources from urban area ignition sources and, over the years, have become essential to setting urban areas back from wildland areas so as to serve 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 not only be hardened against fire but can reduce off-site impacts to wildfire, including for existing communities.

The significance of the Project's FMZs is supported by research which 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% of the homes survived (Howard et al. 1973, 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 Proposed 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 Fanita Ranch 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 Proposed 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, these FMZ distances would be sufficient to prevent structure ignitions at the Proposed Project even under the most extreme fire weather conditions.

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.

3.1.4 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% of home and business fires during wildfires (Bouvet 2021). Embers have been the focus of some local building codes since the 1990's, 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. Fanita Ranch's fire hazard assessment included the potential exposure to airborne embers, and fire protection features have accordingly included requirements of the to address the ember issue and minimize the potential for ember-caused structure damage or loss. Specifically, (1) ember resistant vents will be included in all structures; (2) all structures will 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 will be planted and maintained as ember-resistant. Accordingly, the Proposed Project will not be vulnerable to embers, and structures will resist ember penetration and ignitions.

3.1.5 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, it is anticipated that wildfire evacuations of Fanita Ranch will likely include the relocation of perimeter residents, either to on-site shelter sites or off-site rather than mass evacuating the entire community (Santee Fire Department 2022). The wildfire evacuation scenarios selected for this analysis were based on a comprehensive approach that included consultation with the Santee Fire Department, review of fire history, review of Cedar Fire evacuations in Santee, fire behavior science, area topography, fuel types and the evolved approach to evacuations which is surgical instead of area wide. 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 Fanita Ranch Project is provided wildfire hardening and will 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 Fanita Ranch, as indicated in the modeling analysis. This type of 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 has been implemented with great 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 this evacuation approach, the Fanita Ranch evacuees, along with neighboring community residents could be evacuated to designated safety areas within 19 minutes. If they were relocated to other internal Project areas, the evacuation time would be even lower and would have no impact on existing off-site communities, except for up to approximately 25 percent of evacuees (Sorenson and Vogt 2006) who decided to leave the area despite not being asked to evacuate off-site, known as shadow evacuees.

The evacuation modeling conducted for the Fanita Ranch 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 Fanita Ranch 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 preplans. San Diego County's Emergency Operations Plan 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 that are in proximity to the immediate danger. A phased evacuation effort will need to be enforced by law enforcement agencies and coordinated with the OA EOC 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 great success in the 2017 Lilac Fire in north San Diego County. In this evacuation, a larger area of approximately 44,000 households, was given a message via the WEA 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 (Lilac Fire After Action Report 2017).

Dept of Homeland Security (2019) provides supporting data for why jurisdictions have moved to the surgical evacuation approach that leverages the power of situational awareness to support decision making. According to their Planning Considerations: Evacuation and Shelter in Place document, they indicate 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. 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 Fanita Ranch Wildland Fire Evacuation Plan, 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 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 (2022) 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 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 1.3 hours, which is considered a reasonable timeframe (Rohde & Associates 2019-2021, Santee Fire Department 2022, Dudek/Hunt Research Corp 2014). Further, under the most probable wildfire evacuation scenario, which would follow the latest evacuation strategies of targeted and surgical evacuations, would move certain perimeter residents from the Project and the existing community and is modeled to be accomplished within 19 minutes. 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 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 Proposed Project's fire prevention features and shelter-in-place contingency will further mitigate risks to public safety.

3.1.6 Temporary Refuge and Shelter-in-Place

The fire protection features detailed in the preceding sections that would be incorporated into the Fanita Ranch Project make it a shelter-in-place-capable community. Wildfire would not be able to burn into the community due to perimeter fuel modification zones 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. Fanita Ranch structures would all meet the most stringent ember resistant requirements as established in the California Building and Fire Codes. 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 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 1950's. 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, San Diego County Sherriff's Department 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, Fanita Ranch residents will be provided ongoing education and public outreach on Ready, Set, Go! and could temporarily shelter onsite, 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 fuel modification zones, 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). Fanita Ranch has been designed with the same types of fire hardening to provide a shelter-in-place contingency, and would be anticipated to perform similarly under wildfire conditions.

If all communities focused on shelter in place capability, similar to Stevenson Ranch and Fanita Ranch, most or all fire resources could focus on fire control instead of structure defense (Foote 2004). Thus, not only could 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 their efforts on defense of less fire-resistant communities. Nasiatke (2003) points out another advantage to sheltering in place in an appropriately protected community, namely, 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 onsite 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 residents were instructed not to evacuate.

The evidence shows that if emergency managers determine shelter-in-place is preferred for the Proposed Project, Fanita Ranch residents will 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 property/structures at Fanita Ranch 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 Fanita Ranch residents to shelter-in-place may improve safety to off-site residences by freeing up fire resources elsewhere.

3.1.7 Summary and Expert Review

The Fanita Ranch 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 Proposed 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 (2022) 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 much less likely overly conservative scenario and 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 the event evacuation is not recommended for residents of Fanita Ranch during a wildfire event (i.e., because of inadequate lead time), the fire protection features detailed above describe why Fanita Ranch 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 this FPP. The Santee Fire Department (SFD) has accepted this Plan and recognizes that the features incorporated into Fanita Ranch 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 persons or property to a significant risk of loss, injury or death from a wildland fire.

3.2 Substantially Impair an Adopted Emergency Response Plan/Emergency Evacuation Plan

The Proposed Project Evacuation Plan (Dudek and CR Associates March 2022) 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 provides supplemental project-specific information to these plans and informs 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. In an actual 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. Law enforcement and fire agencies charged with managing evacuations likely would not refer to a project-specific evacuation plan when implementing an emergency evacuation. However, the Fanita Ranch Evacuation Plan 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 EOP.

During the construction phase of the Project's development, appropriate actions will be implemented to maintain evacuation routes so that they are available if needed. Temporary road closures or detours during construction will 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% 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 Environmental Impact Report (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 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 onsite within 8 minutes to assist the initial response. Providing a new fire station would assist in – not impair – emergency response.

The Proposed Project meets or exceeds 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 the 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, etc. Two external points of ingress/egress are provided to/from the Proposed 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 offsite (Fanita Parkway, Cuyamaca Street, and Magnolia Avenue) and numerous east/west connections offsite during an emergency evacuation event. The Proposed Project would not cut off or impair existing evacuation routes and provide roadway improvements that would improve 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 Evacuation Plan (Dudek and CR Associates 2022) prepared for Fanita Ranch residents 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 evacuation plan provides important population education and preparedness information and provides a sophisticated evacuation modeling approach. The modeling and analysis portion of the Evacuation Plan is focused on ensuring that 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 Proposed 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 Proposed Project's developed areas. These areas may be determined to be safer than evacuating in some fire scenarios.

The condensed version of the Evacuation Plan would be provided to homeowner's, renters, business owners and employees, and other persons regularly at the Project site. In addition, the 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, etc.) 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 Proposed Project incorporates 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 will reduce the need for emergency response and evacuation. For each of these reasons, the Proposed Project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

3.3 Due to Slope, Prevailing Winds, and Other Factors, Exacerbate Wildfire Risks and Expose Occupants to Pollutant Concentrations from A Wildfire or Uncontrolled Wildfire Spread

3.3.1 Wildfire Risk

The wildland fire risk in the vicinity of the Proposed Project site has been analyzed according to a standard used throughout San Diego County, the San Diego County Guidelines for Determining Significance – Wildland Fire and Fire Protection (2010). The guidelines take into consideration slope, typical wind speed and direction, habitat and other factors. It has been determined that wildfires may occur in wildland areas that surround the project site as they have historically. Additionally, absent mitigating approaches, increased vehicle traffic and human presence in the project area could increase the potential for wildfire ignitions post-development. The potential for the project to exacerbate wildfire risks during construction and post-development phases is discussed below.

3.3.2 Construction

As described, the Proposed Project area is located within a VHFHSZ. Generally, heat or sparks from construction equipment, vehicles, as well as 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. The following construction-related equipment has the potential to generate heat or sparks that could result in wildfire ignition:

- Earth-moving and excavating equipment – Heated exhausts or sparks may result in ignition.
- Chainsaws and other small gas-powered equipment/tools – may result in vegetation ignition from overheating, spark, fuel leak, etc.
- Tractors, graders, mowers, bulldozers, backhoes, cranes, excavators, trucks, and vehicles – heated exhaust in contact with vegetation may result in ignition.
- Welders – Open heat source may result in metallic sparks coming into contact with vegetation.
- Wood chippers – Include flammable fuels and hydraulic fluid that may overheat and spray onto vegetation with a hose failure.
- Grinders – Sparks from grinding metal components may land on a receptive fuel bed.
- Torches – Heat source, open flame, and resulting heated metal shards may come in contact with vegetation.

The potential risk of wildfire ignition and spread associated with construction of the proposed project can be managed and pre-planned so that the potential for vegetation ignition is reduced. In addition, pre-planning and construction personnel fire awareness, reporting, and suppression training not only results in lower probability of ignition, but also in higher probability of fire control and extinguishment in its incipient stages. Data indicate that

95% of all wildfire ignitions are controlled during initial attack (Smalley 2008). The Construction Fire Prevention Plan (attached here as Appendix H) 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, measures that would help reduce construction-related wildfire impacts to a less than significant level include having adequate water available to service construction activities, implementing a construction-phase fire prevention plan (See Appendix H), providing proper wildfire awareness, reporting, and suppression training to construction personnel, and requiring that all construction-phase components of the fuel modification prior to delivery of combustible materials/lumber drop to the project site. The Fanita Ranch project incorporates each of these measures to ensure that the Project would not exacerbate wildfire risks during construction.

3.3.3 Post-Development

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 Project will provide a fire hardened landscape, ignition resistant homes 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. The site further provides at least 2 ingress/egress routes leading to 3 main roadways for evacuation and if evacuation is not considered the preferred approach, such as during a short-notice evacuation, the Project offers a contingency option of temporarily sheltering on site. These concepts are discussed in detail above and in the following sections.

3.3.4 Ignition Resistant Structures

As discussed in Sections 3.1.1, 3.1.2 and 3.1.4 above, Fanita Ranch would incorporate ignition-resistant structures and building practices proven to successfully withstand wildfires in environments near the Project. The ignition resistant requirements for new communities built in wildland urban interface (WUI) or very high fire hazard severity zones (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 County's wildland fuels, terrain, and weather. San Diego County conducted after-fire assessments that strongly indicate that the building codes are working in preventing home loss. After fire assessments of structure losses and saves noted that fewer than 2% of the structures built to the more ignition resistant 2004 codes were impacted and most of the homes 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. Similarly, of 194 structures lost or damaged in the Orange County Freeway Complex Fire (2008), there were no structures within the fire perimeter lost that were built to at least the 1996 special fire area codes (similar to the CBC Chapter 7A requirements) enacted by the City of Yorba Linda (OCFA 2008). Similarly, as previously presented, the 2003 Simi Fire and the 2020 Silverado Fire threatened fire-adapted communities and resulted in no lost structures, credited to the ignition resistant designs, fuel modification and maintenance. Those codes required structure hardening against wildfire but are less restrictive and result in less ignition-resistant structures compared to current San Diego County Building and Fire Code requirements. Structures built to the 2019 Fire and Building Codes 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, like would be provided for Fanita Ranch, the result is a defensible project that is designed and built to minimize demands on the available firefighting resources.

Some of the primary components of the layered fire protection system provided for the Proposed Project are required by SFD. However, they are worth listing because they have been proven effective for minimizing structural vulnerability to wildfire. In addition, interior fire sprinklers which would be provided in all structures (required in

Santee since 1989 and now required throughout the State since 2010), have a track record of extremely high reliability (Aherns 2021) controlling the fire in 96% of reported incidents and statistics indicate that fires in homes with sprinklers resulted in 82% lower property damage (Hall 2013) and 89% lower loss of life (Aherns. 2021). Although not designed for wildland fire defense, should embers succeed in entering a structure, sprinklers provide an additional layer of life safety.

Even though these measures are now required by the latest Building and Fire Codes, at one time, they were used as compensating measures for buildings in WUI areas, because they were known to reduce structure vulnerability to wildfire. These measures performed so well, Santee adopted by Council a WUI (UWI) development standard in November 2004 and then amended the fire code with adoption in June 2006. These measures were also adopted into the 2007 Building Code and have been retained and enhanced in code updates since then. 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:

- 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 (recommend BrandGuard, O'Hagin, or similar vents);
- Interior, automatic fire sprinklers for all new structures;
- Modern infrastructure, access roads, and water delivery system;
- Maintained fuel modification areas; and
- Fire apparatus access roads throughout the Project.

3.3.5 Effective Fuel Modification Zones

Provisions for modified fuel areas separating wildland fuels from structures have also reduced the number of fuel-related structure losses by providing separation between structures and heat generated by wildland fuels. FMZs have been shown to provide appropriate buffers between native fuels and structures and are based on research that has indicated the type and width of FMZs that provide protection. As discussed in detail in Section 6.1, studies show that as little as 30 feet of fuel modification provides significant buffering from off-site fuels due to the heat dissipation rates across distances. Fanita Ranch's FMZs would be extensive, as discussed below in Section 6, and would include code exceeding 115-to-165-foot wide FMZs, up to 50 feet of roadside FMZ and provisions for 100 foot wide FMZ adjacent 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 3rd party landscape plan reviewer and then inspected twice a year by an HOA-funded 3rd party FMZ inspector who will specify where maintenance is required for all zones and then once completed, provide certification to SFD that the entire FMZ meets this FPP's requirements.

The provided FMZs are designed to not only minimize wildfire encroaching upon the community, but to minimize the likelihood that an ignition from on-site spreads into the Preserve areas. The FMZs provide separation from the unmaintained vegetation occurring outside the FMZs. The FMZs include low-fuel, maintained vegetation, including 65 feet of irrigated zone, resulting in high fuel moisture, which is ignition resistant (USFS-WFAS 2015). The FMZs 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.

3.3.6 Ignition Sources

The types of potential ignition sources that currently exist in the 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, like Fanita Ranch. Studies indicate that even with older developments that lacked the fire protections provided the Proposed Project, wildfires declined steadily over time (Syphard, et. al., 2007 and 2013) and further, the acreage burned remained relatively constant, even though the number of ignitions temporarily increased. This is due to the conversion of landscapes to ignition resistant, maintained areas; increased human monitoring, which results in early fire detection and discouragement of arson; and fast response from the fire suppression resources that are located within these developing areas.

The Project would include a robust fire protection system, as detailed herein. This robust fire protection system prevents Project ignitions, and provides protections from any on-site fire spreading to off-site vegetation. Accidental fires within the landscape or structures in the Project will have limited ability to spread. The landscape throughout the Project and on its perimeter will be highly maintained and much of it irrigated, which reduces its ignition potential. Structures will be highly ignition resistant on the exterior and the interiors will be protected with automatic sprinkler systems, which have a very high success rate for confining fires or extinguishing them. The project will be a fire adapted community with a strong resident outreach program that raises fire awareness among its residents, as defined further in the Fanita Ranch Wildland Fire Evacuation Plan (Dudek 2022). The Fanita Ranch population would provide a heightened early wildfire detection network. Therefore, potential impacts to special status species would be reasonably anticipated to be negligible.

The Proposed Project would convert nearly 986 acres of ignitable fuels to lower flammability landscape, include better access throughout the site, provide managed and maintained landscapes, and place more fire aware individuals on the ground, which would reduce the likelihood of arson, off-road vehicles, shooting, or other recreational based activity fires. In addition, the Proposed Project would include a fire station site, apparatus and trained firefighters that would be able to respond quickly to reported fires.

Fires from 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 Proposed Project structures, but are not likely to result in ignition based on ember decay rates and the types of non-combustible and ignition resistant construction materials that would comprise Project buildings. Ember resistant venting will 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 landscaped and fuel modification areas would assure that the FMZs continually meet the requirements of SFD and this FPP.

The Proposed Project would comply with, and in some cases, exceed the applicable fire and building codes and would include a layered fire protection system inclusive of site-specific measures that would result in a community that is less susceptible to wildfire than surrounding landscapes and that would facilitate fire fighter and medical aid response. These features, combined with the required ignition resistant construction, result in consistency with the adopted fire and building codes (2019 California Fire and Building Codes, City Municipal Code, and Ordinance 570) and an acceptable wildfire risk.

3.3.7 Occupant Exposure

The proposed project has identified a daily population of up to 7,974 residents at full buildout (8,145 without the school) and the daylight hour additional population (school students and staff not living in the community, commercial employees, agriculture and visitors) is estimated conservatively at up to 1,524 persons. The total on-site population is calculated at up to 9,498 persons with the school or 8,886 persons without the school (See Section 5.3). 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 through relevant codes and standards. Fire protection systems for the proposed project that serve to minimize occupant exposure to wildfire impacts include:

- Installation of a public water system 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 provides 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 according to the latest ignition resistant building codes found in Chapter 7A of the California Building Code, as adopted by City of Santee, and any additional restrictions or requirements adopted locally by the SFD.
- Installation of sprinklers in all structures designed by a licensed Fire Protection Engineer or fire sprinkler contractor for each occupancy type. A private booster pump and secondary power source will be installed for approximately 21 single-family homes in PA 13 where the area experiences residual pressures of less than 40 psi during peak hour demand conditions.
- Installation and maintenance of defensible space areas along the southern edge and interior open space areas of 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. Both FMZs reduce the potential for extreme fire behavior adjacent to developed areas and provide a working area for firefighters to conduct suppression activities.
- Installation of travel lanes for on-site access roads and vehicle turnarounds, meeting appropriate loading standards per Development Plan. Roadways are provided 30 to 50 feet of fuel modification on each side of the road.
- The site further provides at least 2 routes that lead to at least 3 main roadways for evacuation and if evacuation is not considered the preferred approach, such as during a short-notice evacuation, the Project offers a contingency option of temporarily sheltering on site.

3.4 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

The following identifies proposed project infrastructure and its contribution to wildfire risk:

- Potable Water Supply: The Fanita Ranch Project would be served by PDMWD and sufficient water supplies would be available to serve the Proposed Project (Dexter Wilson 2020). The PDMWD has provided a water

availability/will serve form for the Proposed Project (Appendix C). The potable water system would consist of transmission and distribution pipes, two storage reservoirs and two pump stations. The transmission system would be within road rights-of-way. Roads adjacent to wildland areas would have a 50-foot fire buffer on each side. Water storage reservoirs and access roadways would be surrounded by a minimum 3-foot fuel management zone. 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 per SFD design standards Fire hydrant spacing on neighborhood roads will be 300 feet apart. Installation and maintenance of the water supply system would not exacerbate wildfire risk.

- Wastewater Management: PDMWD will provide sewer services for Fanita Ranch. A new gravity sewer system, consisting of 8-inch to 12-inch pipes, will be constructed within the road rights-of-way to collect and convey wastewater to a 15-inch trunk sewer at the western edge of Orchard Village. A portion of the wastewater collected by PDWMD would go to the Padre Dam Water Recycling Demonstration Project where it is treated to drinking water standards. Installation and maintenance of the sewer system would not exacerbate wildfire risk.
- Stormwater Management: The project will install a series of swales, catch basins and culverts that direct stormwater to hydromodification/water quality basins. Maintenance provisions have been included in the design of the stormwater system. These stormwater features are static, do not generate heat/sparks and would not impede site access or otherwise hinder evacuation or emergency response efforts. As such, the installation and maintenance of these features would not exacerbate wildfire risk.
- Energy Conservation and Greenhouse Gas Emissions Reductions: The project would implement measures to conserve energy on site. Most of the identified measures occur within structures (e.g., low-flow water fixtures) or are programs to reduce waste (e.g., recycling program). Exterior measures (e.g., solar photovoltaic systems in Special Use Area) would be installed to code standards at time of construction. None of these measures would exacerbate wildfire risk.
- Fire Protection: The project would install a fire hydrant network, a dedicated fire water pipeline system, and fire department hose connections throughout the site. As previously mentioned, water reservoirs would also serve as emergency water storage. These features are static, do not generate heat/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 is projected by Dudek's call volume analysis (utilizing City of Santee per capita call generation factor of 100 calls per 1,000 persons) to add up to 950 calls per year to the SFD's existing call load and would require the provision of a new fire station on the site to meet the City's General Plan overall emergency response time standard of six minutes. A temporary or permanent station would be operational prior to the first occupancy and a permanent station would be operational in accordance with project conditions of approval. The Fanita Ranch Project EIR includes a full analysis of the potential impacts from construction of a new Fire Station. The result of that analysis indicates that there are no significant impacts associated with the Fire Station's siting, construction, and operation as a Santee Fire Department facility.
- With the fire station, SFD has indicated it can and would serve the Proposed Project. This fire station would meet SFD's current configuration standards for this type of facility and the type and number of calls it would experience. Staffing would include career firefighter positions.
- Interim fire protection during construction would be provided by Station 5 or an on-site, temporary station, per the SFD Will Serve Letter. Once built, primary response (first in) would be provided by the on-site fire station. That on-site fire station would be able to provide first engine response to all portions of the proposed project within 3.4 minutes travel, which is compliant with SFD's 4-minute travel time standard. Travel time is used instead of total response time (6-minute standard), which response time would add time for dispatch and turnout as a way of evaluating "wheels rolling" response times minus the somewhat variable dispatch and

turnout times, consistent with other agencies, including San Diego County. The Proposed Project would provide a fire station site. The station would be housed in the proposed public safety facility in the Fanita Community, which is located in the central portion of the development. Installation of these features would not exacerbate wildfire risk.

- Off-Site Improvements: The Proposed Project would improve and construct new segments of three Mobility Element roads. Both Fanita Parkway and Cuyamaca Street would be improved from Mast Boulevard to their current northern limits. The extension of Fanita Parkway would be constructed north of Ganley Road, and the extension of Cuyamaca Street would be constructed north of Chaparral Drive. The project would also construct the extension of Magnolia Avenue from Princess Joann Road to Cuyamaca Street. Magnolia Avenue will achieve Roadway Substantial Completion prior to the issuance of certificate of occupancy for the 1,500th equivalent dwelling units (EDU) for the Project in accordance with the Project Phasing Plan. Installation of these features would not exacerbate wildfire risk.
- Defensible Space: Defensible space would be required within 115 to 165 feet of the project's structures to reduce fire hazard on-site, which exceeds the State and City's requirements. Defensible space zones are passive measures and would not impede site access or otherwise hinder evacuation or emergency response efforts. Presence of defensible space areas would reduce fuel volumes and moderate fire behavior near structures and would reduce potential wildfire impacts. Installation of defensible space areas would not result in additional temporary or permanent impacts beyond those identified in the Project's EIR. Maintenance of defensible space areas may require heat-or spark-generating equipment thereby increasing wildfire risk. However, implementation of fuel treatment areas along project roads and fire-safe maintenance practices would reduce potential wildfire impact to less than significant.
- Power Lines: Project power lines would be installed below ground and would not exacerbate wildfire risk or result in additional temporary or permanent impacts beyond those identified in Project EIR.

3.5 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.

Wildfires can greatly reduce the amount of vegetation from hillsides. Plant roots stabilize the soil and above-ground plant parts slow water, allowing it to percolate into the soil. Removal of surface vegetation resulting from 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 hydrophobic conditions exist post-fire, the rate of surface water runoff is increased as water percolation into the soil is reduced (Moench and Fusaro 2012). The potential for surface runoff and debris flows therefore increases significantly for areas recently burned by large wildfires (Moench and Fusaro 2012).

The surrounding hillsides adjacent to the proposed project site are moderate to steep in many areas and therefore may be susceptible to erosion, landslides, and debris flow. The threat to water quality from erosion following wildfire was analyzed by CAL FIRE (2009). This analysis estimates an expected erosion rate if an area experiences a high severity fire and considers information on fire rotation to better identify locations that are more likely to experience frequent high severity fires. Mapping data generated from this analysis indicates that the proposed project is classified as primarily having low and moderate erosion potential, although an area in the northwest portion of the property is classified as having high post-fire erosion potential (CAL FIRE 2009). 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.

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, in particular, would receive erosion-control BMPs. Construction BMPs (e.g., fiber rolls, gravel bags, etc.) would be utilized on and around the grading operations as specified in the stormwater pollution prevention plan to stabilize graded slopes. Under risk of downstream flooding or landslides, BMPs would be put in place, including erosion control measures. Regarding risk of Project structures being exposed to landslides, development does not occur below slopes that are not stabilized/manufactured, so the risk of a landslide is very low. The Project's slopes will manage runoff through various required measures and BMPs designed specifically to shed water from slopes in a controlled manner. Regarding existing, neighboring structures exposure to landslides, the Project does not grade in areas adjacent to existing structures so there will be no new potential for landslides.

The proposed project will 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/detention basins are also proposed at locations adjacent to proposed development sites. The water quality/detention basins would be constructed adjacent to proposed roadways, parking lots or maintenance paths to facilitate inspection and maintenance. Implementation of these project features are expected to 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 are considered less than significant.

4 Anticipated Fire Behavior

4.1 Fire Behavior Modeling

Following site evaluation and vegetative fuels data collection efforts, modeling of potential fire behavior was conducted to support development of this FPP. Specifically, the FlamMap software package was used to evaluate the intensity of fire that would be expected on portions of the project site, considering weather, fuels, and terrain variables. Dudek utilized FlamMap, which is a graphics-based GIS model that utilizes the same fire spread algorithms contained in the BehavePlus software package. The advantage of FlamMap modeling is that it evaluates anticipated site-wide fire spread and flame length values based on variations in topography and vegetative cover and provides a graphical output that can be evaluated on site maps, whereas BehavePlus provides a tabular output. BehavePlus was also utilized for specific target areas for confirmation of FlamMap results.

4.1.1 FlamMap Analysis

FlamMap (version 5.0.3) (Finney et al. 2015) is a GIS-driven computer program that incorporates fuels, weather, and topography data in generating static fire behavior outputs, including values associated with flame length and rate of spread, amongst others. It is a flexible system that can be adapted to a variety of specific wildland fire planning and management needs. The calculations that come from FlamMap are based on the BehavePlus fire modeling system algorithms but result in geographically distinct data sets based on GIS inputs. FlamMap model outputs allow wildland resource managers to evaluate anticipated fire behavior, which provides important insight about the characteristics of wildfire spread within the project area. Each of the input variables used in FlamMap remain constant at each location, meaning that the input variables are applied consistently to each grid cell and the fire behavior at one grid cell does not impact that at a neighboring grid cell. Essentially, the model presents a "snapshot" in time and does not account for temporal changes in fire behavior or the movement of fire across the landscape. As such, the results of the models contained herein are best used as valuable information sources and tools to prioritize fuel treatments based on potential risk rather than used as a forecast tool of an exact representation of how a fire would behave in the Project Area.

The basic assumptions and limitations of FlamMap are:

- The model output files describe fire behavior only in the flaming front. The primary driving forces in the predictive calculations are the dead fuels less than 0.25 inch in diameter. These are the fine fuels that carry fire. Fuels greater than 1 inch in diameter have little effect in carrying fire, and fuels greater than 3 inches in diameter have no effect.
- The model bases calculations and descriptions on a wildfire spreading through surface fuels that are within 6 feet of the ground and contiguous to the ground. Surface fuels are often classified as grass, brush, litter, or slash.
- The software assumes that fuel moisture conditions are uniform. However, because wildfires almost always burn under non-uniform conditions, length of projection period and choice of fuel must be carefully considered to obtain useful predictions.
- WindNinja software (v. 2.1.0), which is incorporated into FlamMap, allows for the generation and incorporation of gridded wind data in the FlamMap simulation.

FlamMap was used to model flame length activity for the Project Area. A detailed discussion of the FlamMap modeling process conducted for this FPP is presented in Appendix B.

4.1.1.1 FlamMap Model Outputs

Maps depicting flame length values for the summer weather[5] scenario and the Peak weather[6] (e.g., under extreme weather conditions) scenario are included in Appendices B-1 and B-2, respectively. The fire behavior modeling results vary depending on topography and fuel type. As FlamMap utilizes site-specific digital terrain data (including slope, vegetation, aspect, and elevation data) slight variations in predicted flame length values can be observed based on fluctuations of these attributes across the landscape. As presented, wildfire behavior in each of the fuel types varies depending on weather conditions.

When classifying vegetation types into fuel models, efforts were made to most accurately represent the fuel type observed. Small fuels pockets within larger areas classified as another fuel type were not separated for this analysis. This approach is consistent with the industry standard for fire behavior modeling. Second, the fuel models selected to represent post-developed conditions were selected based on expected fire behavior in these fuel types, as no available fuel models exist for managed and/or irrigated landscape vegetation.

4.1.2 BehavePlus Analysis

In addition to the FlamMap analysis conducted for the project and described above, an analysis utilizing the BehavePlus software package was conducted to evaluate fire behavior variables and to provide verification of FlamMap outputs. The BehavePlus modeling outputs conducted for Fanita Ranch are consistent with coinciding FlamMap modeling outputs, as described below.

To objectively predict flame lengths, intensities, and spread rates, the BehavePlus 5.0.5 fire behavior modeling system (Andrews, Bevins, and Seli 2004) was used in four modeling scenarios and incorporated observed fuel types, measured slope gradients, and wind and fuel moisture values derived from County guidelines. Modeling scenario locations were selected to better understand different fire behavior that may be experienced on the site.

The majority of the property is vegetated with non-native grassland, chaparral, and coastal sage scrub. The sage scrub-chaparral habitat on and adjacent to the project site is in varying stages of fire recovery following the 2003 Cedar Fire. As such, fuel loads are expected to increase over time, with mature chaparral potentially reaching continuous cover of 10- to 15-foot tall shrubs on northern, mesic slopes and mature sage scrub reaching 2 to 3 feet tall shrubs on south or southwest facing, drier slopes. Based on the location of modeling scenarios, a fuel model 4 (dry climate shrub with high fuel load representing chamise-chaparral fuels) and a fuel model SH5 (dry climate shrub with moderate fuel load representing sage scrub fuels) were used for all BehavePlus fire behavior modeling runs.

Utilizing the dominant on-site vegetation, slope values for the site (25% to 37% slope), and the Peak and summer wind and fuel moisture values derived from County guidelines and the FDFM analysis, fire behavior calculations were conducted. A summary of the scenario inputs and the results of BehavePlus modeling efforts are summarized in Table 3. BehavePlus fire behavior modeling results and the locations of the fire modeling scenarios are presented in Figure 6.

[5] Summer Weather is defined as the 50 percentile weather as recorded by nearby Remote Automated Weather Stations and averaged over extended timeframes. Summer weather represents “typical” summer conditions with average humidity and low wind speeds.

[6] Peak Weather is defined as the 97% percentile weather as recorded by nearby Remote Automated Weather Stations and averaged over extended timeframes. Peak weather represents extreme fire conditions with low humidity and high wind speeds.

Table 3. BehavePlus Fire Behavior Modeling Results

Fire Scenario	Flame Length (feet)	Spread Rate (mph)	Fireline Intensity (Btu/ft/s)	Spot Fire (miles)
Scenario 1: Chaparral on north-facing, 25%–35% upslope, Peak weather				
Chaparral (FM4)	66.1	10.1	51,337	2.8
Scenario 2: Mixed sage scrub & chaparral on north to south-facing, 35% downslope and upslope, Peak weather				
Chaparral (FM4)	63.9 – 66.1	9.4 – 10.1	47,742 – 51,337	2.7 – 2.8
Sage-chaparral transition (Sh5)	38.9 – 40.4	5.4 – 5.8	16,265 – 17,596	1.9 – 2.0
Scenario 3: Sage scrub on north/south facing, 25% downslope and upslope; Summer weather				
Sage scrub (Sh5)	19.4	1.4	3,573	0.7
Scenario 4: Mixed sage scrub & chaparral on west/east facing, 37% downslope; Summer weather				
Chaparral (FM4)	28.2	1.8	8,036	0.9
Sage scrub (Sh5)	18.0	1.2	3,037	0.7

Note:

1. Fire Behavior Analysts recorded peak wind gusts up to 50 mph during the Cedar Fire. Using Peak Weather fine dead fuel moisture values and observed wildfire peak gusts for the Project Vicinity, the BehavePlus modeling efforts would result in flame lengths of 66.1 feet, spread rates of 10.1 mph, and fireline intensities reaching up to 51,337 Btu/ft/s. Viable airborne embers could be carried downwind for 2.8 miles and ignite receptive fuels.

As presented in Table 3 wildfire behavior in non-treated heavy chaparral, presented as a Fuel Model 4, represents the site's most extreme conditions, varying with different wind speeds. In this case, flame lengths can be expected to reach up to approximately 28.2 feet with 19 mph wind speeds (prevailing Summer condition) and 66.1 feet with 41 mph wind speeds (Peak condition). Spread rates range from 1.8 mph (summer) to 10.1 mph (Peak). Spotting distances, where airborne embers can ignite new fires downwind of the initial fire, range from less than a mile (summer weather condition) to 2.8 miles (Peak weather condition).

4.1.3 Fire Behavior Summary

4.1.3.1 Existing Condition

Appendices B-1 and B-2 present graphical representations prepared by Dudek using FlamMap GIS based fire behavior modeling software. As presented, wildfire behavior in non-treated heavy chaparral, presented as a Fuel Model 4, varies based on timing of fire. A worst-case summer fire (summer condition) would result in a fire spreading at a rate of up to 4.3 miles per hour (mph). During a fall fire with gusty Santa Ana (Peak condition) winds and low fuel moisture, fire is expected to be fast moving at up to 17.3 mph with highest flame length values reaching approximately 66 feet in specific portions of the property. Spotting is projected to occur up to nearly 1.0 mile during a summer fire and nearly 2.8 miles during a fall fire. Note that the FlamMap results include a larger area surrounding the site and result in areas with varying fire characteristics. The outputs presented in Appendices B-1 and B-2 are independent of the BehavePlus modeling presented in Table 3 which focus on specific areas adjacent to the project footprint.

4.1.3.2 Post-development Condition

As illustrated in Appendix B-3, Dudek conducted modeling of the site, including post-FMZ fuel reductions recommended for this project. Fuel modification includes establishment of irrigated and thinned zones on the periphery of the project's neighborhoods and roads as well as interior landscape requirements. For modeling the

post-FMZ treatment condition, fuel model assignments were re-classified for the developed landscape, FMZs, fire breaks, roadway treatment zones, and parks and riparian open space areas, as presented in Appendix B. Fuel model assignments for all non-developed areas remained the same as those classified for the existing condition. As depicted, the fire intensity and flame lengths in untreated, biological open space areas would remain the same. Conversely, the FMZ areas experience a significant reduction in flame length and intensity. The 66-foot flame lengths predicted during pre-treatment modeling are reduced to 13 feet at the outer edges of the FMZ and to one foot by the time the inner portions of the FMZ are reached. One-foot tall flame lengths would not be expected to be capable of igniting the ignition resistant structures planned for the Proposed Project. As such, the proposed 165-foot FMZ width would be approximately twice as wide as the calculated flame lengths.

The results presented in Appendix B and Table 3 depict values based on inputs to the FlamMap and BehavePlus software and are not intended to capture changing fire behavior as it moves across a landscape. For planning purposes, the worst-case fire behavior is the most useful information for prioritizing vegetation management activities. Model results should be used as a basis for planning only, as actual fire behavior for a given location will be affected by many factors, including unique weather patterns, small-scale topographic variations, or changing vegetation patterns.

BehavePlus Fire Behavior Inputs

Model Variable	Summer Weather Condition	Peak Weather Condition
Fuel Models	FM4, Sh5	FM4, Sh5
1 h fuel moisture	3%	2%
10 h fuel moisture	6%	3%
100 h fuel moisture	8%	5%
Live herbaceous moisture	60%	30%
Live woody moisture	90%	50%
20 ft. wind speed	19 mph	41 mph
Wind direction	225 degrees	45 degrees
Wind adjustment factor (BehavePlus)	0.4	0.4

Scenario Run #1

Scenario Run #2

Scenario Run #3

Scenario Run #4

BehavePlus Fire Behavior Modeling Results

Fire Scenario	Flame Length (feet)	Spread Rate (mph)	Fireline Intensity (Btu/ft/s)	Spot Fire (miles)
Scenario 1: Chaparral on north-facing, 25%-35% upslope, Peak weather				
Chaparral (FM4)	66.1	10.1	51,337	2.8
Scenario 2: Mixed sage scrub & chaparral on north to south-facing, 35% downslope and upslope, Peak weather				
Chaparral (FM4)	63.9 – 66.1	9.4 – 10.1	47,742 - 51,337	2.7 – 2.8
Sage-chaparral transition (Sh5)	38.9 – 40.4	5.4 – 5.8	16,265 – 17,596	1.9 – 2.0
Scenario 3: Sage scrub on north/south facing, 25% downslope and upslope; Summer weather				
Sage scrub (Sh5)	19.4	1.4	3,573	0.7
Scenario 4: Mixed sage scrub & chaparral on west/east facing, 37% downslope; Summer weather				
Chaparral (FM4)	28.2	1.8	8,036	0.9
Sage scrub (Sh5)	18.0	1.2	3,037	0.7

Project Site

N

0 1,000 2,000 Feet

AERIAL SOURCE: BING MAPPING, 2018

DUDEK

FIGURE 6

BehavePlus Fire Behavior Anlaysis Map

FANITA RANCH FIRE PROTECTION PLAN

Path: Z:\Projects\10116\01\MAPDOC\DOCUMENT\FPP Figs\FPP Fig 9_BehavePlus.mxd

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5 Emergency Response and Service

The following sections analyze the Fanita Ranch Project in terms of current SFD Fire Service capabilities and resources to provide Fire Protection and Emergency Services. The analysis that follows examines the ability of the existing Santee fire stations with the addition of the planned new fire station, within the Fanita Ranch Project, to adequately serve the Proposed Project. Response times were evaluated using Project build-out conditions. It was assumed that phased construction would include access roads to the newly constructed buildings and that the shortest access route to those structures would be utilized.

5.1 Fire Facilities

The Proposed Project site is located within the SFD jurisdictional area. SFD currently services 16.5 square miles and a population of approximately 58,000 residents in the City of Santee (U.S. Census Bureau 2020). The fire department provides structural and wildland fire protection and advanced life support-level emergency medical services within the City limits. SFD currently operates two Fire Stations (Stations 4 and 5) with 53 uniformed fire personnel. Figure 7 illustrates the location of these fire stations along with the planned Fanita Ranch station. Table 4 provides fire station information for existing SFD stations 4 and 5, which are proximal to the Proposed Project site along with the Fanita Ranch proposed fire station site. For additional support, SFD relies on numerous Automatic Aid agreements with City-adjoining jurisdictions, including Heartland and City of San Diego. Once built, SFD would provide initial response to the Proposed Project from the on-site station.

Table 4. Fanita Ranch Emergency Response Analysis[1]

Santee Fire Department Station No.	Total Mileage to Furthest Extent in Fanita Ranch	Estimated Response Travel Time	Firefighting Resources[2]
4	5.57	10 min. 7 sec.	Engine 4; Truck 4; Brush 4; Medic 4; Battalion 2. (9 *personnel/shift*)
4 (N. Magnolia Ave. extension)	5.63	10 min.13 sec.	Same As above
5	5.39	9 min. 49 sec.	Engine 5; Engine205; Medic 5 (8 *personnel/shift*)
Proposed Fanita Ranch	1.64	3 min. 26 sec.	TBD

Notes:

1 Table 4 presents results of response travel time utilized the ISO formula (T=.65+1.7D) that discounts speed to account for slowing along the response route.

2 Total staffing per shift is 17 firefighters.

Dudek conducted GIS based emergency response modeling from existing and planned fire stations to the project to determine potential response coverage. The modeling used an ESRI network response area model assuming 35 mph as standard speed and impedances (slow-downs) at each intersection for consistency with the Insurance Services Office (ISO) formula. Emergency travel time for first arriving engines from each station are provided in Table 4. Automatic and/or Mutual Aid agreements with surrounding fire departments are in place and would potentially result in additional resources that are not analyzed in this FPP.

5.2 Emergency Response Travel Time Coverage

The City of Santee's Quality of Life Standard is for emergency response to all priority Level One or Emergency type calls in 6 minutes or less, 90% of the time. Response includes travel time along with dispatch and turnout time, which can add an additional two minutes to travel time. As indicated in Table 4 and Figures 7 through 11, response to the project site from the closest existing SFD fire station (Station 5) would not achieve the response time standard for first arriving. Response travel time from Station 5 is calculated at roughly 5 minutes 26 seconds to the Vineyard Village entrance of the site and 9 minutes 49 seconds to the furthest lot in the northeast corner of Orchard Village. The second engine to the site is estimated to arrive within approximately 10 minutes 7 seconds travel time. All response calculations are based on an average response speed of 35 mph, consistent with nationally recognized National Fire Protection Association (NFPA) 1710. Based on these calculations, the project would not comply with the City's response time standards from existing fire stations and would require provisions for additional resources.

To address the currently unachievable City of Santee's Quality of Life Standard threshold, a new fire station site would be required in conjunction with the project. The new station specifications regarding size, staffing and layout would be determined through the project conditions of approval. It is anticipated that the station would be appropriately sized based on the number and types of calls that would be anticipated. The station would be staffed 24/7 with career firefighters who would provide initial response. Travel time from the new station to the most remote (distant) lot within the Project is calculated at 3 minutes 26 seconds. This would enable just under 2 minutes for dispatch and turnout and is considered to meet the 6-minute City's General Plan overall response time goal.

Proposed
On-Site Station

Santee Fire
Station 5

Santee Fire
Station 4

Fanita Ranch Boundary
Study Area Roads

Fire Stations

Proposed Station

Existing Stations

0 750 1,500 Feet

SOURCE: SanGIS 2018, Bing Maps 2018, Hunsaker 2019

DUDEK

FIGURE 7

Fire Station Locations

FANITA RANCH FIRE PROTECTION PLAN

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Fanita Ranch Boundary
Study Area Roads

Travel Time from Station 4

- 7-8 minutes
- 8-9 minutes
- 9-10 minutes
- 10-11 minutes

0 750 1,500 Feet

SOURCE: SanGIS 2018, Bing Maps 2018, Hunsaker 2019

DUDEK

FIGURE 8

Travel Times - Station 4

FANITA RANCH FIRE PROTECTION PLAN

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Fanita Ranch Boundary
Study Area Roads

Travel Time from Station 4 (No Magnolia Ave Connection)

- 7-8 minutes
- 8-9 minutes
- 9-10 minutes
- 10-11 minutes

0 750 1,500 Feet

SOURCE: SanGIS 2018, Bing Maps 2018, Hunsaker 2019

DUDEK

FIGURE 9

Travel Times - Station 4 Without Magnolia Ave Construction

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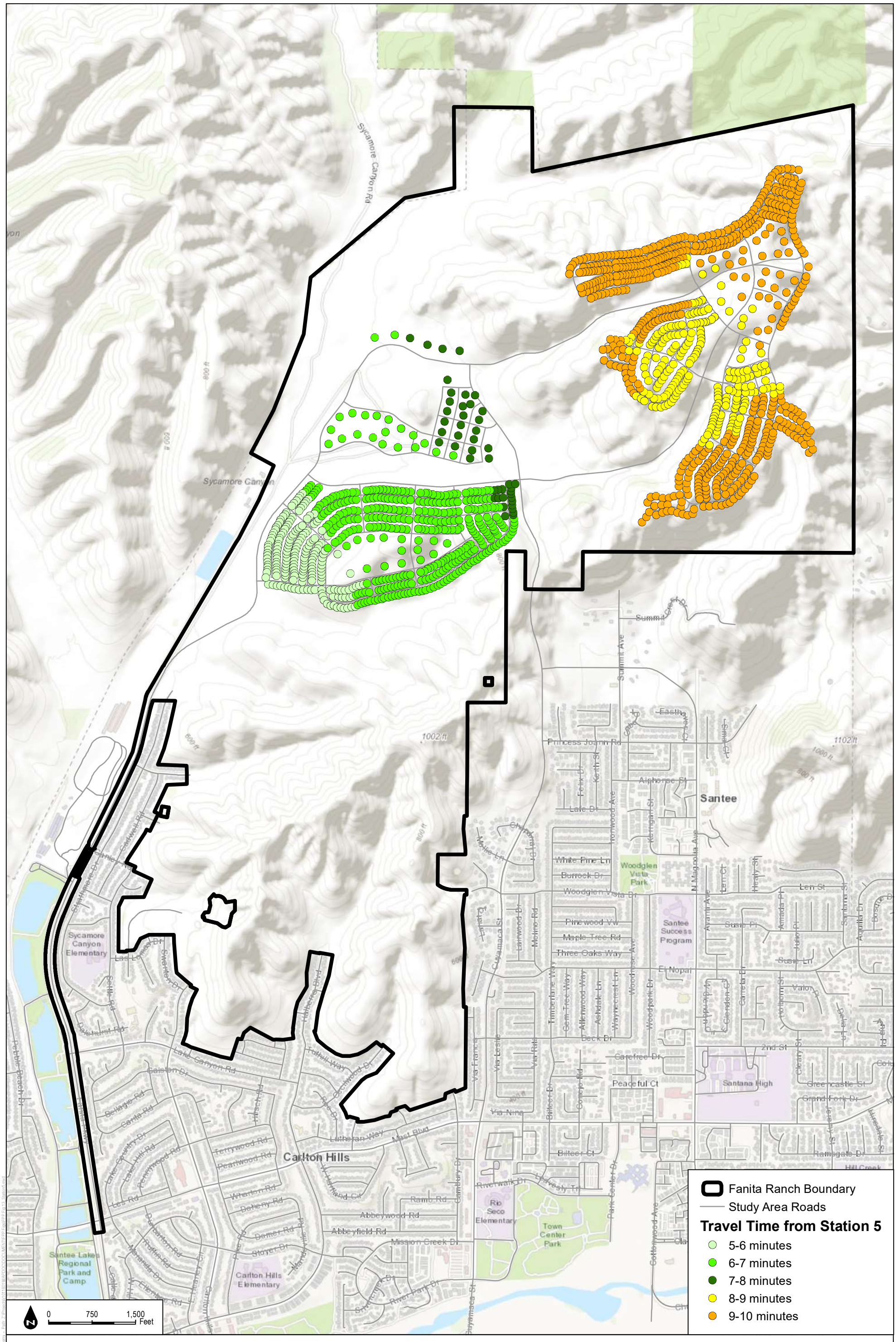

SOURCE: SanGIS 2018, Bing Maps 2018, Hunsaker 2019

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FIGURE 10

Travel Times - Station 5

FANITA RANCH FIRE PROTECTION PLAN

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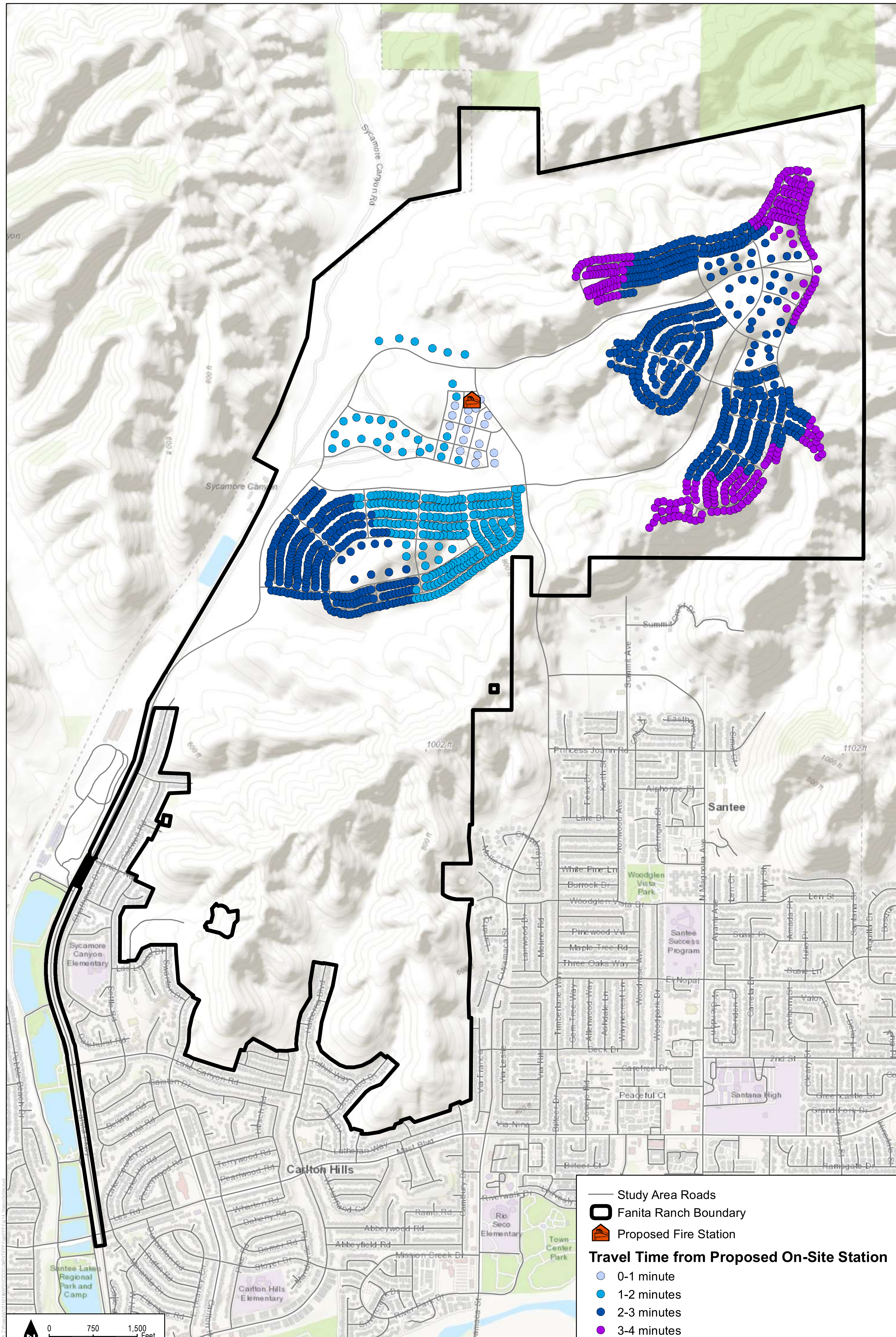

SOURCE: SanGIS 2018, Bing Maps 2018, Hunsaker 2019

FIGURE 11

Travel Times - On Site Station

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5.3 Estimated Calls and Demand for Service from the Project

Emergency call volumes related to typical projects, such as new residential developments, can be reliably estimated based on the historical per-capita call volume from a particular fire jurisdiction. The SFD documented 5,791 total incidents for 2019 (City of Santee Fire Department 2019a) generated by a Citywide total population of approximately 58,000 persons. The City's per capita annual call volume is approximately 100 calls per 1,000 persons.

Based on the proposed development plans, including the on-site school, the Project's estimated population is calculated to generate up to 950 calls per year (2.6 calls per day). The population includes: 7,974 residents for up to 2,949 dwelling units (including 2.9 persons per unit for residential and 1.6 persons per unit for active adult units) and the daylight hour additional population (school students and staff not living in the community, commercial employees, agriculture and visitors) and is estimated conservatively at 1,524 (450 for workers and 1,074 for students, customers, and visitors). The total on-site population is calculated at 9,498 persons. Most of the 950 calls are expected to be medical-related calls (approximately 81% of total emergency incidents).

If the school site is not utilized for school purposes, it may be developed with residential uses and the total authorized units would be increased to 3,008 homes (additional 59 units) and the estimated resident population would be 8,145 persons (additional 171 residents), 200 workers, and 541 visitors/customers, totaling 8,886 persons. Without the school, it is estimated the net change in population (additional residents minus school students and staff not living in the community) would be approximately 612 fewer persons. Reducing population by 612 people to the call volume calculations presented in the preceding paragraph results in 61 fewer calls per year, or 0.17 calls per day. This reduced population would reduce the annual calculated call volume to 889 calls per year, which is 2.4 calls per day. This increase from the "with school" scenario is considered insignificant.

Service level requirements, absent additional resources, would be expected to be significantly impacted with the increase of 950 calls per year or approximately 18.3 calls per week if the Fanita Ranch community and school site were serviced from one or both of the existing SFD stations. The department currently responds on the average to just over 16 calls per day in its entire service area or roughly eight calls per day per fire station. For reference, a station that responds to five calls per day is considered average and ten calls per day is considered busy (Hunt 2010). Regardless of the potential impact on SFD Stations 4 and 5, the planned new fire station on site would be able to respond to the project's generated calls, and have significant capacity to respond to other calls from outside the Proposed Project.

5.4 Response Capability Potential Impact Assessment

Cumulative impacts from multiple projects can cause fire response service decline and must be analyzed for each project. The Fanita Ranch Project and its proposed residents and daily users (school, commercial, agriculture, visitors) represents an increase in potential service demand of approximately 950 calls per year (889 without the school). Without additional resources, this total would add to an existing busy service obligation for SFD Stations 4 and 5. Additionally, both stations' response times to the most remote lot in the project site exceeds the City's response time standard.

The City of Santee determined that a fire station is required to meet response time standards as outlined in the General Plan Safety Element to effectively deal with an emergency in Fanita Ranch. Coupled with the current fire stations, and the newly proposed fire station in Fanita Ranch, the City has Mutual Aid and Automatic Aid Agreements

with neighboring agencies, as well as statewide, to provide the additional aid that could be required. With the advent of GPS, the City has the boundary drop system which enables the computer aided dispatch (CAD) system to track units and equipment not only for Santee but also for neighboring agencies. In other words, when an emergency occurs, the system will dispatch the closest personnel and apparatus, regardless of the jurisdiction. The City has also established a Mutual Threat Zone (MTZ) agreement with CalFire, which would entail CalFire sending manpower and equipment to help fight fires in the MTZ free of cost. The City does not foresee any modifications to the MTZ agreement with the construction of Fanita Ranch. The proposed Fanita Fire Station will be provided in accordance with the project conditions of approval.

For major emergencies, such as wildland fires, there are avenues for cost recovery through the Fire Management Assistance Grant (FMAG), which generally would cover 75% of the costs for fire emergencies. If there is a fire outside of the SRA (State Recovery Area), the local jurisdiction is responsible for those costs, which could run into the hundreds of thousands of dollars. However, these costs could be offset by at least 75% through FMAG.

The City of Santee Fire Department and Sheriff's Department work together under unified command on fire evacuation protocols and procedures. There have been improvements to avoid bottlenecking during evacuation. These improvements include the use of geo-targeting, in conjunction with the County's public safety grid maps which are available to all first responders. The Sheriff's Department, CalFire, most of the firefighting agencies and SDG&E developed the maps so that 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.

In January of 2018, the FCC introduced rules for wireless carriers to create the ability to geo-target to one-tenth of a mile. With these new rules, the City can utilize the public safety grid maps, assess the risk, the fire, the direction, intensity and speed, and immediately communicate the grid map to the Sheriff's Department. They, in turn, utilize the Wireless Emergency Alert (WEA) system, which provides them the ability to alert residents of an evacuation order. In the near future, the WEA will be updated to have more characters and allow the Sheriff's Department to give more detailed alerts and have the capability to outline specific evacuation routes to different neighborhoods.

6 Fire Safety Requirements – Defensible Space, Infrastructure, and Building Ignition Resistance

6.1 Defensible Space/Fuel Modification Zones

An important component of a fire protection system is the provision for fire resistant landscapes and modified vegetation buffers. FMZs are designed to provide vegetation buffers that gradually reduce fire intensity and flame lengths from advancing fire by strategically placing thinning zones, restricted vegetation zones, and irrigated zones adjacent to each other. FMZs may be located on the perimeter of all structures and adjacent to open space areas and may also be located internally in the Project site. Fuel modification for Fanita Ranch is proposed for the entire exterior perimeter, along roadways, within interior landscaped areas that abut natural open space, and adjacent to existing residences south of the site. The FMZ is an important part of the fire protection system designed for this site.

As previously discussed, predicted flame lengths vary on the Fanita Ranch site-adjacent slopes, which would adjoin the provided FMZs. The zones are customized for the site based on its terrain and vegetation characteristics as well as resulting fire behavior modeling exercises, and are more conservative than the widely accepted 100-foot standard, including the SFD standard. Figure 12 illustrates a standard SFD FMZ, which includes two zones with the inner zone irrigated and the outer zone thinned, compared to the more conservative (wider) FMZs that will be required for the Project. These variations were analyzed, as were the site's specific features and conditions, which complement and augment the proposed FMZs. Fire behavior modeling, as previously presented, was used to predict flame lengths and was not intended to determine sufficient FMZ widths. However, the results of the fire modeling provide important fire behavior projections, which is key supporting information for determining buffer widths that would minimize structure ignition and provide "defensible space" for firefighters. Appendices D-1 through D-4 present the proposed FMZs at the Fanita Ranch Project.

Community FMZs along the south and west sides of the Project's development areas would be 115 feet wide and comprised of four zones while FMZs along the north and east sides of the Project would be 165 wide. Customized FMZs for Fanita Ranch perimeter lots include a 15- to 30-foot wide property owner maintained rear- or side- yard along with HOA or Preserve Manager inspected and maintained FMZs that vary between 85 and 150 feet, depending on the adjacent fuelbed and wildfire hazard. Figures 13 and 14 provide cross sections of the 115-foot FMZ for upslope (Condition 1) or downslope (Condition 4) conditions. Cross sections of the 165-foot FMZ is provided in Figures 15 (Condition 2- upslope), 16 (Condition 3- upslope), and 17 (Condition 5 - downslope).

6.1.1 Project Fuel Modification Zone Standards

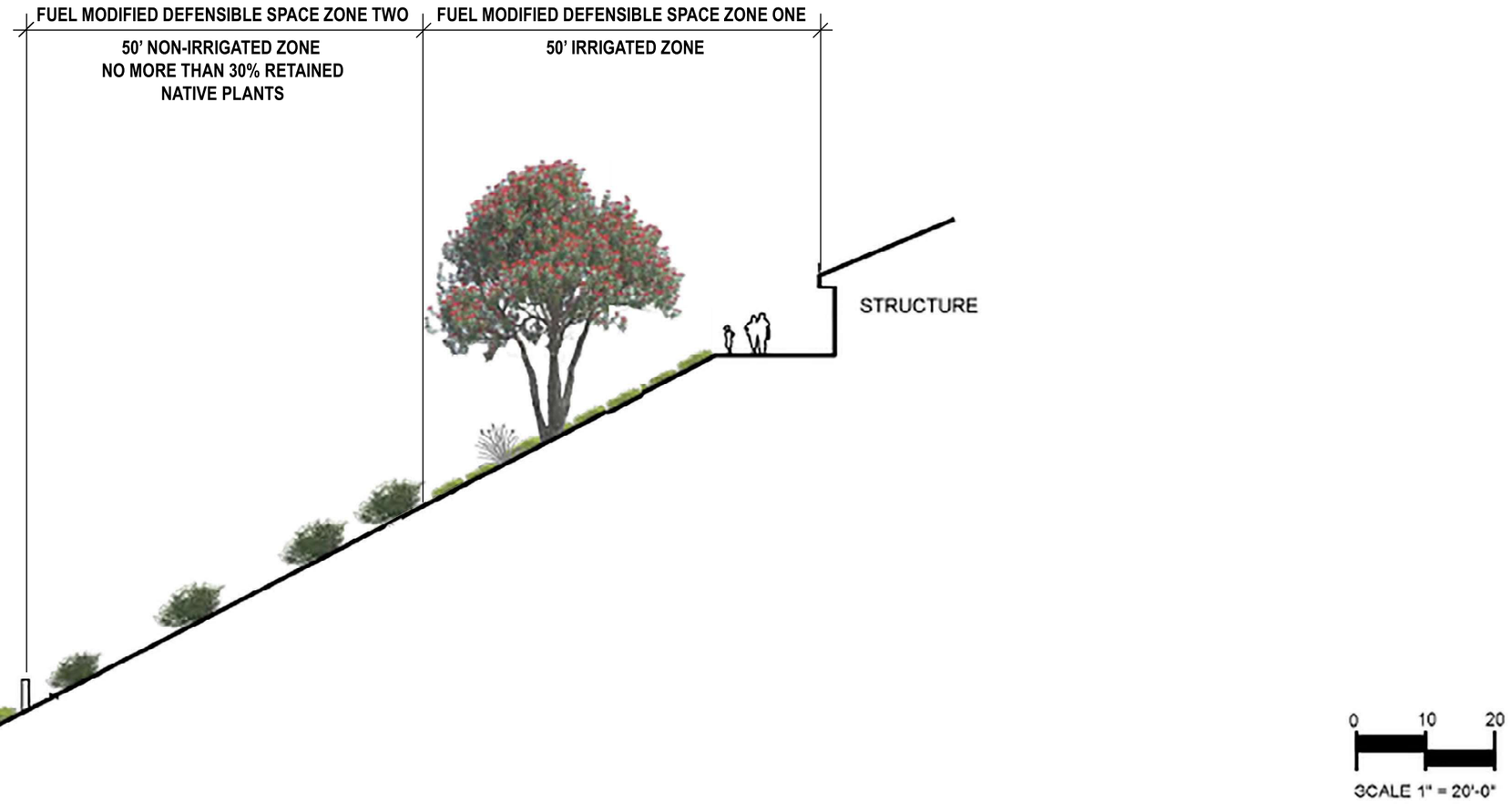
Customized FMZs would be implemented according to the requirements described in the following sections. These FMZs are not standard SFD FMZs, as previously mentioned and described below. These zones are presented graphically in Figures 13 through 17 and vary in their configuration (Zones 1A, 1B, 1C, and 2) depending where they are located in the Proposed Project. All fuel modification would be provided within the project boundaries (no off-site easements needed). FMZs would be measured along a horizontal plane. Each respective FMZ would include permanent field markers (see Appendix E for zone marker details) meeting the approval of SFD to delineate the

zones. Permanent markers will be installed at line of site or where FMZs change direction. These markers will aid ongoing maintenance activities that would occur on site and avoid the tendency for non-demarcated FMZs to become wider at the expense of preserved open space, over time.

Plantings used in Zone 1C and interior of the development footprint will include drought-tolerant, fire resistive plant material. The planting list and spacing will be reviewed and approved by the SFD, included on submitted landscape plans and will be consistent with the Fanita Ranch Project Plant List (Appendix G) prepared by Delorenzo International. The intent of the approved plant list is to provide examples of plants that are less prone to ignite or spread flames to other vegetation and/or combustible structures during a wildfire. Additional plants can be added to the landscape plant material palette with the approval from the SFD. An automatic irrigation system would be installed in Zones 1A, 1B, and 1C to maintain hydrated plants without over-watering, allowing for run-off, or attracting nuisance pests. In Zone 2, no more than 30% of the native, non-irrigated vegetation will be retained, as described below or this zone could be planted with plants as long as they are not listed in Appendix F, Undesirable Plants List and meet the criteria described in Section 6.1.1.4 .

4907.2.1 Fuel Modified Defensible Space, Zone One.
"Zone One" is the first 50 feet measured from the structure toward the wildland. This area is the least flammable, and consists of pavement, walkways, turf and permanently landscaped, irrigated and maintained ornamental planting. This vegetation should be kept in a well-irrigated condition and cleared of dead material. This area requires year-round maintenance. Fire resistive trees are allowed if placed or trimmed so that crowns are maintained more than 10 feet from the structure. Highly flammable trees such as, but not limited to conifers, eucalyptus, cypress, junipers and pepper trees are not allowed in WUI areas. This area must be maintained by the property owner or applicable homeowners association(s).

4907.2.2 Fuel Modified Defensible Space, Zone Two.
"Zone Two" is the second 50 feet of the 100 total feet of defensible space and is measured 50 feet from the structure to a total of 100 feet toward the wildland. Zone Two consists of low-growing, fire-resistant shrubs and ground covers. Average height of new plants for re-vegetation should be less than 24 inches. In this Zone, no more than 30% of the native, nonirrigated vegetation may be retained. This area requires inspection and periodic maintenance. This area must be maintained by the property owner or applicable homeowners association(s).



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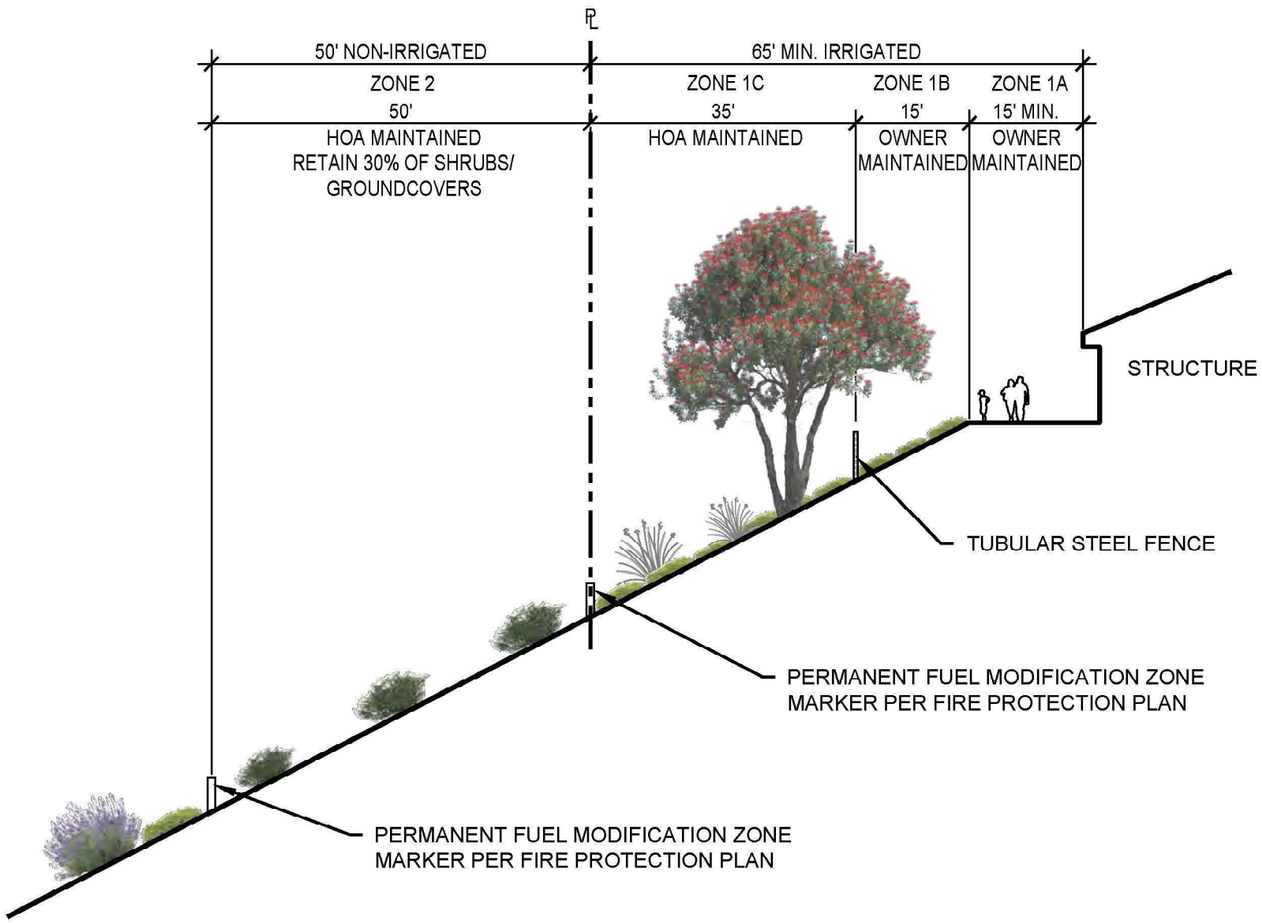
FMZ/DEFENSIBLE SPACE ZONE 2:
ZONE 2 ADJOINS ZONE 1 AND MEASURES NO MORE THAN 50 FEET IN WIDTH. IN THIS ZONE NO MORE THAN 30% OF NATIVE VEGETATION SHALL BE RETAINED. PLANTS FOR REVEGETATION SHALL CONSIST OF SPECIES FOUND ON THE FANITA RANCH PLANT LIST. NO PLANTS FOUND ON THE FANITA RANCH PROHIBITED LIST SHALL BE PLANTED OR REMAIN IN ZONE 2. THIS AREA REQUIRES INSPECTION AND PERIODIC MAINTENANCE BY THE APPLICABLE HOA.

FMZ/DEFENSIBLE SPACE ZONE 1C:
ZONE 1C IS A MINIMUM OF 35 FEET WIDE STARTING AT THE PROPERTY LINE AT THE OUTER EDGE OF ZONE 2 AND MOVING INWARDS TOWARDS THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE APPLICABLE HOA.

FMZ/DEFENSIBLE SPACE ZONE 1B:
ZONE 1B IS A MINIMUM OF 15 FEET WIDE STARTING AT THE TOP OF SLOPE AND MOVING OUTWARDS TOWARDS ZONE 2. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. BUILDING RESTRICTIONS APPLY PER THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE PROPERTY OWNER.

ZONE 1A - SETBACK ZONE:
ZONE 1A IS THE FIRST 15 FEET MINIMUM (REAR-OR SIDE-YARD) FROM THE STRUCTURE TO THE TOP OF SLOPE. THIS AREA IS THE LEAST FLAMMABLE AND CONSISTS OF NON FLAMMABLE BUILDING MATERIALS APPROVED BY THE FANITA RANCH FIRE PROTECTION PLAN INCLUDING BUT NOT LIMITED TO PAVEMENT, PATHWAYS, TURF AND PERMANENTLY IRRIGATED AND MAINTAINED LANDSCAPING. THIS AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS THAT HAVE BEEN APPROVED BY THE HOA. THIS AREA WILL BE MAINTAINED BY THE PROPERTY OWNER AS REQUIRED BY THE FANITA RANCH FIRE PROTECTION PLAN.

FMZ/DEFENSIBLE SPACE ZONE 1:
ZONE 1 IS A MINIMUM OF 65 FEET WIDE STARTING AT THE EDGE OF ZONE 2, AND MOVING INWARDS TOWARD THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE PROPERTY OWNER OR APPLICABLE HOA. BUILDING RESTRICTIONS PER THE FANITA RANCH FIRE PROTECTION PLAN APPLY IN ZONES 1A AND 1B.



0 10 20

SCALE 1" = 20'-0"
MARCH 2, 2020

SOURCE: DELORENZO INTERNATIONAL 2020

FIGURE 13
Condition 1 – 115’ Fuel Modification Zone Cross Section

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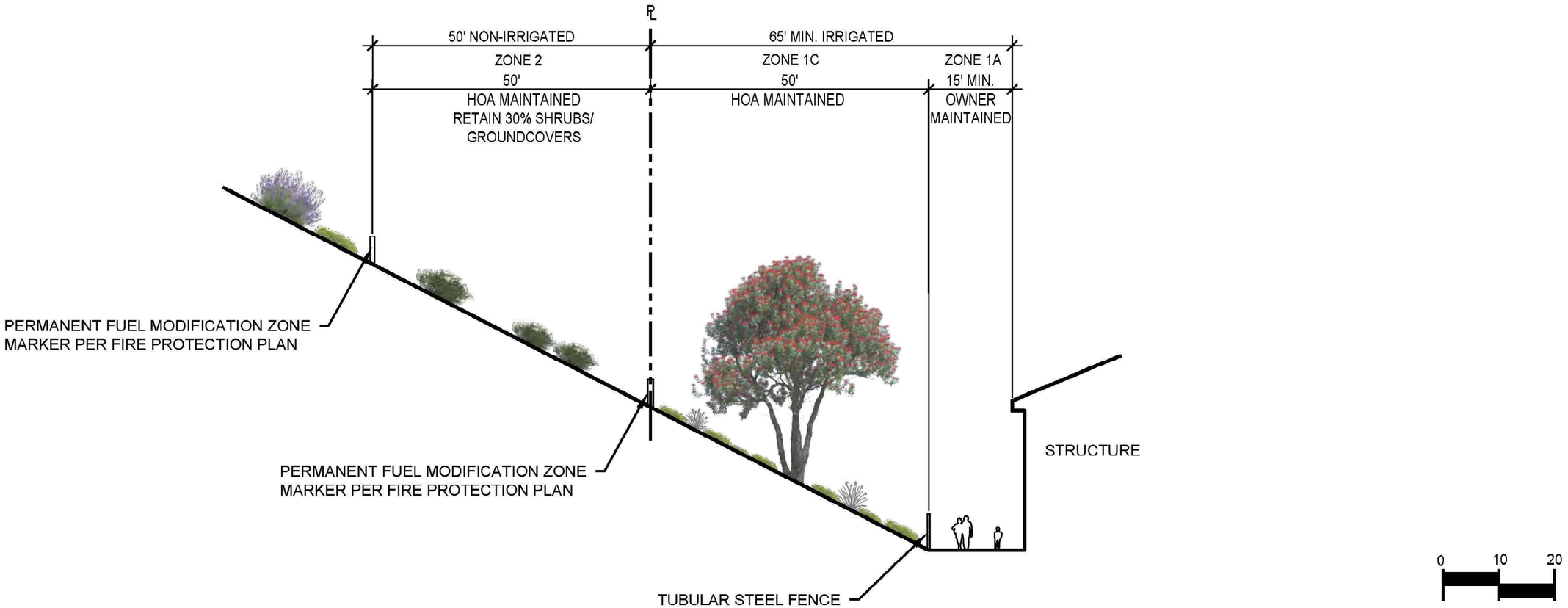
FMZ/DEFENSIBLE SPACE ZONE 2:
ZONE 2 ADJOINS ZONE 1 AND MEASURES NO MORE THAN 50 FEET IN WIDTH. IN THIS ZONE NO MORE THAN 30% OF NATIVE VEGETATION SHALL BE RETAINED. PLANTS FOR REVEGETATION SHALL CONSIST OF SPECIES FOUND ON THE FANITA RANCH PLANT LIST. NO PLANTS FOUND ON THE FANITA RANCH PROHIBITED LIST SHALL BE PLANTED OR REMAIN IN ZONE 2. THIS AREA REQUIRES INSPECTION AND PERIODIC MAINTENANCE BY THE APPLICABLE HOA.

FMZ/DEFENSIBLE SPACE ZONE 1C:
ZONE 1C IS A MINIMUM OF 50 FEET WIDE STARTING AT THE PROPERTY LINE AT THE OUTER EDGE OF ZONE 2 AND MOVING INWARDS TOWARDS THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE APPLICABLE HOA.

ZONE 1A - SETBACK ZONE:
ZONE 1A IS THE FIRST 15 FEET MINIMUM (REAR-OR SIDE-YARD) FROM THE STRUCTURE TO THE TOP OF SLOPE. THIS AREA IS THE LEAST FLAMMABLE AND CONSISTS OF NON FLAMMABLE BUILDING MATERIALS APPROVED BY THE FANITA RANCH FIRE PROTECTION PLAN INCLUDING BUT NOT LIMITED TO PAVEMENT, PATHWAYS, TURF AND PERMANENTLY IRRIGATED AND MAINTAINED LANDSCAPING. THIS AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS THAT HAVE BEEN APPROVED BY THE HOA. THIS AREA WILL BE MAINTAINED BY THE PROPERTY OWNER AS REQUIRED BY THE FANITA RANCH FIRE PROTECTION PLAN.

FMZ/DEFENSIBLE SPACE ZONE 1:
ZONE 1 IS A MINIMUM OF 65 FEET WIDE STARTING AT THE EDGE OF ZONE 2, AND MOVING INWARDS TOWARD THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE PROPERTY OWNER OR APPLICABLE HOA. BUILDING RESTRICTIONS PER THE FANITA RANCH FIRE PROTECTION PLAN APPLY IN ZONES 1A.



SOURCE: DELORENZO INTERNATIONAL 2020

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FIGURE 14
Condition 4 – 115' Fuel Modification Zone Cross Section

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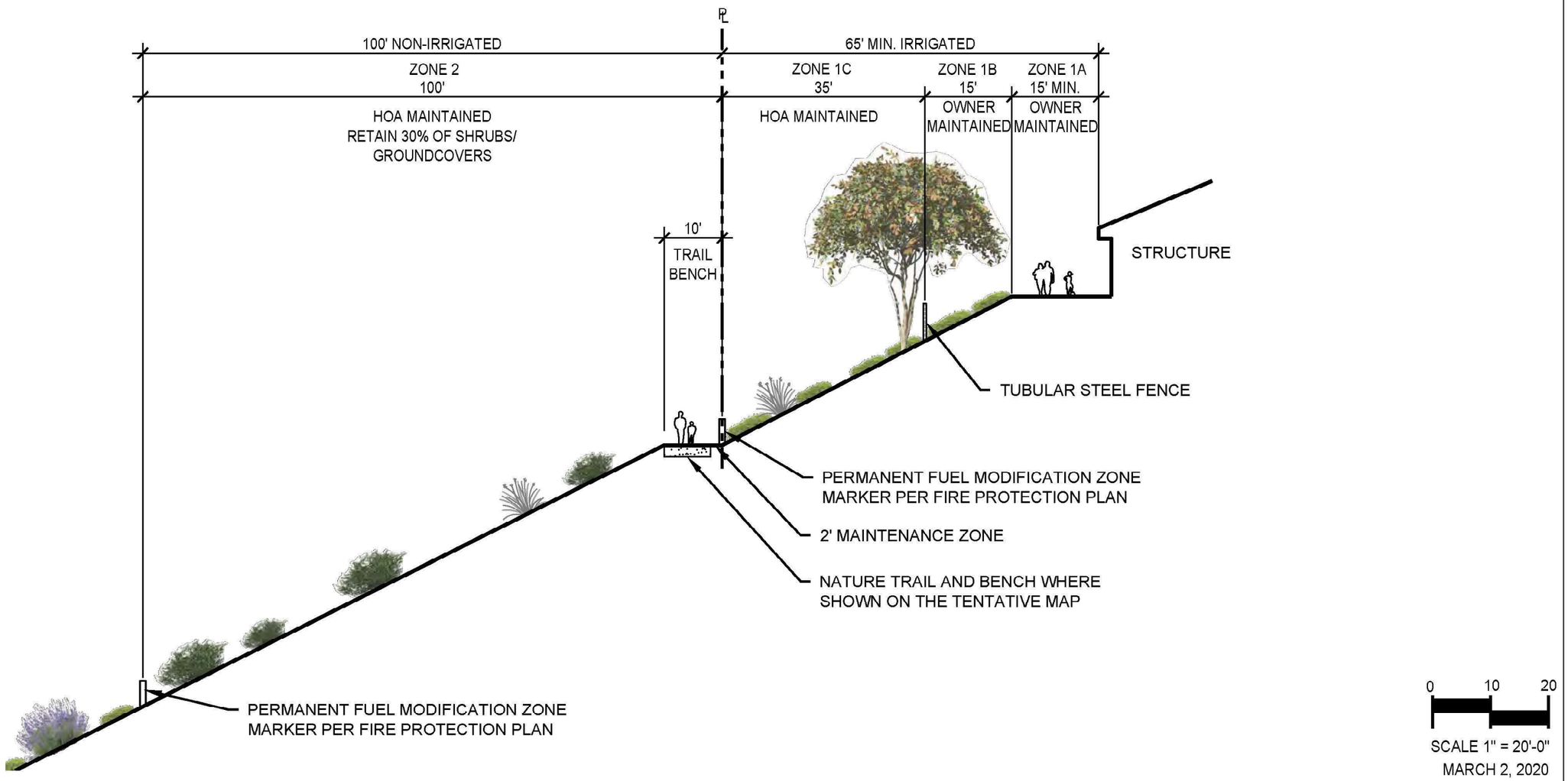
FMZ/DEFENSIBLE SPACE ZONE 2:
ZONE 2 ADJOINS ZONE 1 AND MEASURES NO MORE THAN 100 FEET IN WIDTH. IN THIS ZONE NO MORE THAN 30% OF NATIVE VEGETATION SHALL BE RETAINED. PLANTS FOR REVEGETATION SHALL CONSIST OF SPECIES FOUND ON THE FANITA RANCH PLANT LIST. NO PLANTS FOUND ON THE FANITA RANCH PROHIBITED LIST SHALL BE PLANTED OR REMAIN IN ZONE 2. THIS AREA REQUIRES INSPECTION AND PERIODIC MAINTENANCE BY THE APPLICABLE HOA.

FMZ/DEFENSIBLE SPACE ZONE 1C:
ZONE 1C IS A MINIMUM OF 35 FEET WIDE STARTING AT THE PROPERTY LINE AT THE OUTER EDGE OF ZONE 2 AND MOVING INWARDS TOWARDS THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE APPLICABLE HOA.

FMZ/DEFENSIBLE SPACE ZONE 1B:
"ZONE 1B" IS A MINIMUM OF 15 FEET WIDE STARTING AT THE TOP OF SLOPE AND MOVING OUTWARDS TOWARDS ZONE 2. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. BUILDING RESTRICTIONS APPLY PER THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE PROPERTY OWNER.

ZONE 1A - SETBACK ZONE:
ZONE 1A IS THE FIRST 15 FEET MINIMUM (REAR-OR SIDE-YARD) FROM THE STRUCTURE TO THE TOP OF SLOPE. THIS AREA IS THE LEAST FLAMMABLE AND CONSISTS OF NON FLAMMABLE BUILDING MATERIALS APPROVED BY THE FANITA RANCH FIRE PROTECTION PLAN INCLUDING BUT NOT LIMITED TO PAVEMENT, PATHWAYS, TURF AND PERMANENTLY IRRIGATED AND MAINTAINED LANDSCAPING. THIS AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS THAT HAVE BEEN APPROVED BY THE HOA. THIS AREA WILL BE MAINTAINED BY THE PROPERTY OWNER AS REQUIRED BY THE FANITA RANCH FIRE PROTECTION PLAN.

FMZ/DEFENSIBLE SPACE ZONE 1:
ZONE 1 IS A MINIMUM OF 65 FEET WIDE STARTING AT THE EDGE OF ZONE 2, AND MOVING INWARDS TOWARD THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE PROPERTY OWNER OR APPLICABLE HOA. BUILDING RESTRICTIONS PER THE FANITA RANCH FIRE PROTECTION PLAN APPLY IN ZONES 1A AND 1B.



SOURCE: DELORENZO INTERNATIONAL 2020

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FIGURE 15
Condition 2 – 165' Fuel Modification Zone Cross Section

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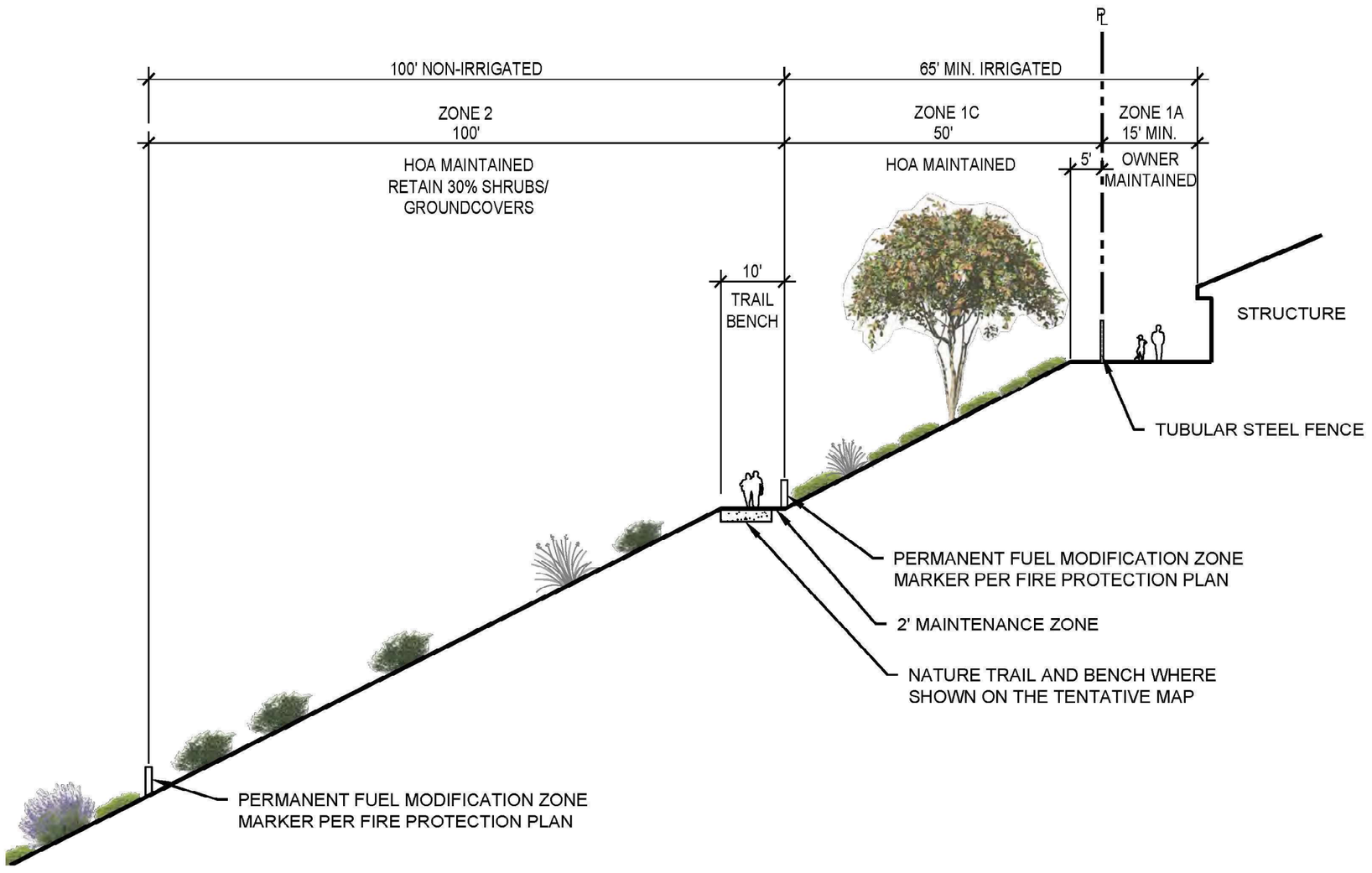
FMZ/DEFENSIBLE SPACE ZONE 2:
ZONE 2 ADJOINS ZONE 1 AND MEASURES NO MORE THAN 100 FEET IN WIDTH. IN THIS ZONE NO MORE THAN 30% OF NATIVE VEGETATION SHALL BE RETAINED. PLANTS FOR REVEGETATION SHALL CONSIST OF SPECIES FOUND ON THE FANITA RANCH PLANT LIST. NO PLANTS FOUND ON THE FANITA RANCH PROHIBITED LIST SHALL BE PLANTED OR REMAIN IN ZONE 2. THIS AREA REQUIRES INSPECTION AND PERIODIC MAINTENANCE BY THE APPLICABLE HOA.

FMZ/DEFENSIBLE SPACE ZONE 1C:
ZONE 1C S A MINIMUM OF 50 FEET WIDE STARTING AT THE PROPERTY LINE AT THE OUTER EDGE OF ZONE 2 AND MOVING INWARDS TOWARDS THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE APPLICABLE HOA.

ZONE 1A - SETBACK ZONE:
ZONE 1A IS THE FIRST 15 FEET MINIMUM (REAR-OR SIDE-YARD) FROM THE STRUCTURE TO THE TOP OF SLOPE. THIS AREA IS THE LEAST FLAMMABLE AND CONSISTS OF NON FLAMMABLE BUILDING MATERIALS APPROVED BY THE FANITA RANCH FIRE PROTECTION PLAN INCLUDING BUT NOT LIMITED TO PAVEMENT, PATHWAYS, TURF AND PERMANENTLY IRRIGATED AND MAINTAINED LANDSCAPING. THIS AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS THAT HAVE BEEN APPROVED BY THE HOA. THIS AREA WILL BE MAINTAINED BY THE PROPERTY OWNER AS REQUIRED BY THE FANITA RANCH FIRE PROTECTION PLAN.

FMZ/DEFENSIBLE SPACE ZONE 1:
ZONE 1 IS A MINIMUM OF 65 FEET WIDE STARTING AT THE EDGE OF ZONE 2, AND MOVING INWARDS TOWARD THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE PROPERTY OWNER OR APPLICABLE HOA. BUILDING RESTRICTIONS PER THE FANITA RANCH FIRE PROTECTION PLAN APPLY IN ZONES 1A.



SOURCE: DELORENZO INTERNATIONAL 2020

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FIGURE 16
Condition 3 – 165’ Fuel Modification Zone Cross Section

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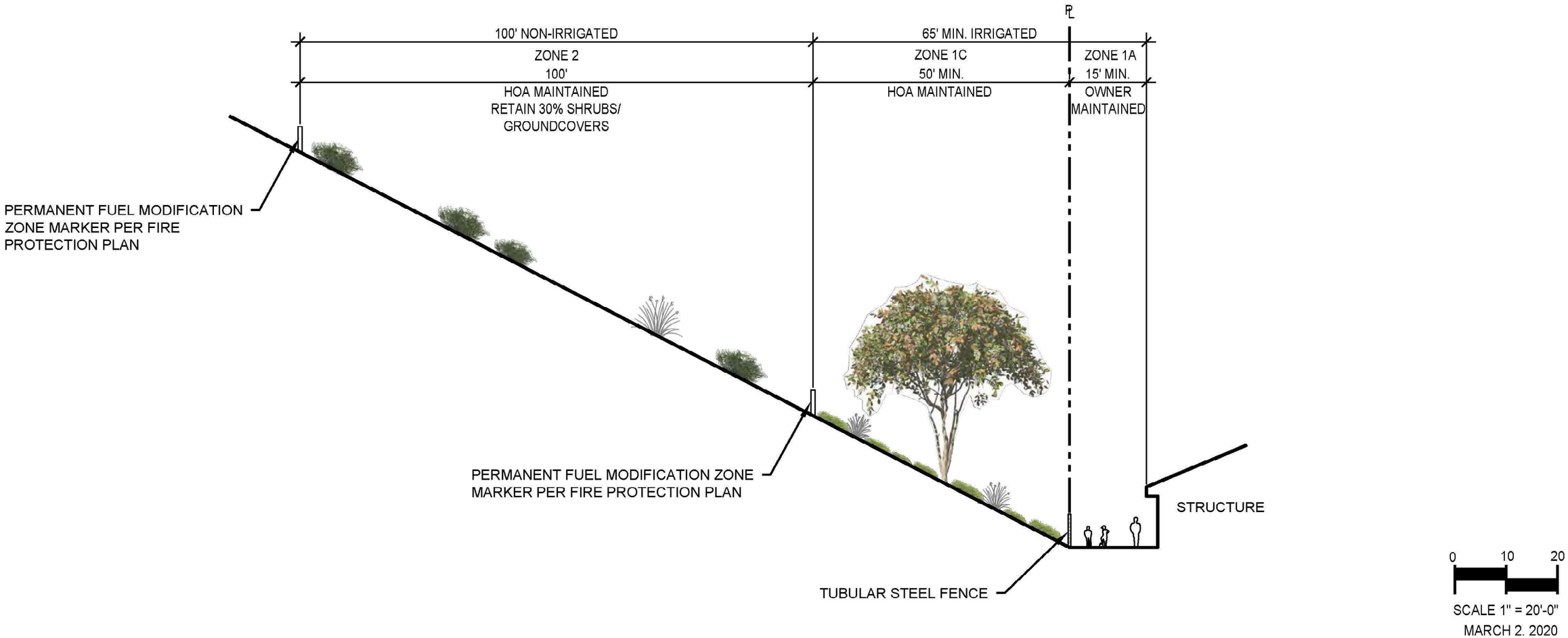
FMZ/DEFENSIBLE SPACE ZONE 2:
ZONE 2 ADJOINS ZONE 1 AND MEASURES NO MORE THAN 100 FEET IN WIDTH. IN THIS ZONE NO MORE THAN 30% OF NATIVE VEGETATION SHALL BE RETAINED. PLANTS FOR REVEGETATION SHALL CONSIST OF SPECIES FOUND ON THE FANITA RANCH PLANT LIST. NO PLANTS FOUND ON THE FANITA RANCH PROHIBITED LIST SHALL BE PLANTED OR REMAIN IN ZONE 2. THIS AREA REQUIRES INSPECTION AND PERIODIC MAINTENANCE BY THE APPLICABLE HOA.

FMZ/DEFENSIBLE SPACE ZONE 1C:
ZONE 1C IS A MINIMUM OF 50 FEET WIDE STARTING AT THE PROPERTY LINE AT THE OUTER EDGE OF ZONE 2 AND MOVING INWARDS TOWARDS THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE APPLICABLE HOA.

ZONE 1A - SETBACK ZONE:
ZONE 1A IS THE FIRST 15 FEET MINIMUM (REAR-OR SIDE-YARD) FROM THE STRUCTURE TO THE TOP OF SLOPE. THIS AREA IS THE LEAST FLAMMABLE AND CONSISTS OF NON FLAMMABLE BUILDING MATERIALS APPROVED BY THE FANITA RANCH FIRE PROTECTION PLAN INCLUDING BUT NOT LIMITED TO PAVEMENT, PATHWAYS, TURF AND PERMANENTLY IRRIGATED AND MAINTAINED LANDSCAPING. THIS AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS THAT HAVE BEEN APPROVED BY THE HOA. THIS AREA WILL BE MAINTAINED BY THE PROPERTY OWNER AS REQUIRED BY THE FANITA RANCH FIRE PROTECTION PLAN.

FMZ/DEFENSIBLE SPACE ZONE 1:
ZONE 1 IS A MINIMUM OF 65 FEET WIDE STARTING AT THE EDGE OF ZONE 2, AND MOVING INWARDS TOWARD THE DWELLING UNIT. THIS FUEL MODIFICATION AREA WILL BE PLANTED WITH DROUGHT-TOLERANT LESS FLAMMABLE PLANTS FROM THE FANITA RANCH PLANT LIST. THIS VEGETATION SHOULD BE KEPT IN A WELL-IRRIGATED CONDITION AND CLEARED OF DEAD MATERIAL. TREES ARE ALLOWED IN THIS ZONE IF PLACED OR TRIMMED AS SPECIFIED IN THE FANITA RANCH FIRE PROTECTION PLAN. THIS AREA REQUIRES YEAR-ROUND MAINTENANCE BY THE PROPERTY OWNER OR APPLICABLE HOA. BUILDING RESTRICTIONS PER THE FANITA RANCH FIRE PROTECTION PLAN APPLY IN ZONES 1A.



SOURCE: DELORENZO INTERNATIONAL 2020

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FIGURE 17
Condition 5 – 165' Fuel Modification Zone Cross Section

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The project's HOA would hire a qualified landscape plan checker to review and approve landscape plans (to be consistent with the requirements herein) and the HOA would assemble a landscape committee to provide ongoing education to homeowners regarding fire-adapted plants and landscape maintenance. The project would also hire a qualified SFD-approved 3rd party FMZ inspector to provide biannual inspections as detailed in the following sections.

6.1.1.1 Zone 1A – Setback Zone (minimum 15 feet wide)

Zone 1A is minimum 15 feet of the rear- or side-yard from the furthest projection of the structure (e.g., the outer edge of the eave) to the top or toe of the slope for any structure that is adjacent to natural open space. This area would be included in the overall site FMZs and would consist of low fuel density, ignition resistant ground covers and plantings consisting of pathways, turf, and permanently irrigated and maintained landscaping. Zone 1A would be planted with drought-tolerant, fire-resistant plant material from the FPP's Plant Palettes (Appendix G). Zone 1A would be maintained by the property owner.

Zone 1A includes the following key components:

1. Fire resistive trees are allowed if placed or trimmed so that the drip line (e.g., canopy edge) of mature trees is maintained more than 10 feet from the structure, especially the roof or eave.
2. Highly flammable trees, including but not limited to conifers, eucalyptus, cypress, junipers, palms, and pepper trees are not allowed within this zone (refer to the Undesirable Plant List in Appendix F for a list of plants that would not be allowed to planted in Zone 1A).
3. Ground covers within the first five feet from structure restricted to non-flammable materials such as stone, rock, concrete, bare soil, or other. This provides protection for the weep screed[7] area that has been shown to be a potential vulnerability for fire impingement from burning ground cover.
4. Maintenance including ongoing removal and/or thinning of undesirable combustible vegetation, replacement of dead/dying plantings, maintenance of the programming and functionality of the irrigation system, and regular trimming to prevent ladder fuels[8].
5. No permanent or portable fire pits, outdoor fireplaces, or flame-generating devices that burn wood are allowed within Zone 1A. Chimneys serving fireplaces, barbecues, or decorative heating appliances in which liquid fuel (natural gas or propane) is used would be provided with a spark arrester of woven or welded wire screening of 12-guage standard wire having openings not exceeding 1/4-inch.
6. Fencing within all lots that are directly adjacent open space or naturally vegetated areas would be constructed with non-combustible materials (e.g., stone, block), fire-rated wood, treated fire-rated vinyl, or SFD-approved materials. In no case would the fence return (closest five feet of fencing to a structure) be constructed of combustible materials.
7. Homeowners would be responsible for ensuring that rear- or side-yard landscaping is maintained for biannual inspection.

[7] A weep screed, which consists of galvanized steel or thermoplastic, is used along the base of an exterior stucco wall. The screed serves as a vent so that moisture can escape the stucco wall finish just above the foundation.

[8] Ladder fuels are flammable plant material that can transmit fire burning in low-growing vegetation to taller vegetation. Examples of ladder fuels include low-lying tree branches and shrubs, climbing vines, and tree-form shrubs underneath the canopy of a large tree.

6.1.1.2 Zone 1B – Irrigated Zone (minimum 15 feet wide)

The standard Zone 1B, where required, would be a minimum 15 feet wide starting at the outer edge of Zone 1A and moving outward to Zone 1C. Plant material would be selected from the Fanita Ranch Plant List (Appendix G) and approved by the HOA. Zone 1B would be maintained by property owner.

Zone 1B includes the following key components:

1. Fire resistive trees are allowed if placed or trimmed so that the drip line (e.g., canopy edge) of mature trees is maintained more than 10 feet from the structure, especially the roof or eave.
2. Highly flammable trees, including but not limited to conifers, eucalyptus, cypress, junipers, palms, and pepper trees are not allowed within this zone (refer to the Undesirable Plant List in Appendix F for a list of plants that would not be allowed to planted in Zone 1B).
3. Trees and tree form shrub species that naturally grow to heights that exceed 10 feet would be vertically pruned to prevent ladder fuels.
4. Maintenance including ongoing removal and/or thinning of undesirable combustible vegetation, replacement of dead/dying plantings, maintenance of the programming and functionality of the irrigation system, and regular trimming to prevent ladder fuels.
5. No permanent or portable fire pits, outdoor fireplaces, or flame-generating devices are allowed within Zone 1B.
6. Fencing within all lots that are directly adjacent open space or naturally vegetated areas would be constructed with non-combustible materials (e.g., stone, block), fire-rated wood, treated fire-rated vinyl, or SFD-approved materials. In no case would the fence return (closest five feet of fencing to a structure) be constructed of combustible materials.
7. Homeowners would be responsible for ensuring that Zone 1B landscaping is maintained for biannual inspection.

6.1.1.3 Zone 1C – irrigated (minimum 35 feet wide/50 feet wide if no Zone 1B)

The standard Zone 1C would be 35 feet wide, starting at the outer edge of Zone 1B boundary fence and moving outward to Zone 2. Where the property line is located at the top or toe of slope at the back edge of the building pad and there is no Zone 1B, Zone 1C will be 50 feet wide. This fuel modification area would be planted with drought-tolerant, less flammable plant species or a succulent, low flammability plant, primarily prickly pear cacti. Zone 1C requires year-round maintenance by the HOA.

Zone 1C includes the following key components, if planted with:

a) Fanita Ranch Plant List (Appendix G)
    1. High-efficiency, automatic irrigation system with low precipitation sprinkler heads to maintain hydrated plants without over-watering or attracting nuisance pests, such as red imported fire ants.
    2. High-leaf-moisture plants as ground cover, less than 4 inches high.
    3. Shrubs are prohibited beneath tree crowns.
    4. No trees within 10 feet of structures (drip line of mature trees would be maintained 10 feet from structures).
    5. Tree spacing of a minimum 10 feet between canopies or as specified in Table 5 for steeper slopes.

Table 5. Distance Between Tree Canopies by Percent Slope[1]

Percent of Slope	Required Distances Between Edge of Mature Tree Canopies[2]
0–20	10 feet
21–50	20 feet
51+	30 feet

1 Source: City of Santee Ordinance 500
2 Determined from canopy dimensions as described in Sunset Western Garden Book (Current Edition)

6. No tree limb encroachment within 10 feet of a chimney, including outside propane or natural gas barbecues or fireplaces.
7. Tree maintenance includes limbing-up (canopy raising) 6 feet above ground or one-third the height of mature tree, whichever is greater.
8. Maintenance including ongoing removal and/or thinning of undesirable combustible vegetation, replacement of dead/dying plantings, maintenance of the programming and functionality of the irrigation system, and regular trimming to prevent ladder fuels.
9. All structures, including habitable buildings, patio covers, gazebos, decks, arbors, etc., would require plan review approval by SFD.
10. Trees and tree form shrub species that naturally grow to heights that exceed 10 feet would be vertically pruned to prevent ladder fuel.
11. Grasses would be cut to 4 inches in height.

b) **Fuel Modification/Habitat Restoration Area**

FMZ 1C areas located on south or southwest aspects may be planted predominately with succulent plants (Cacti) and provided rock ground cover. The cacti would be native plants salvaged from disturbed areas on the site and supplemented, as necessary with native cacti grown in the region. Open space between patches of cacti would be provided a significant rock ground cover, as bands of rock material over appropriate weed control fabric.

The combination of ignition resistant cacti and non-combustible rock would work as a fire barrier between Zones 1A or 1B and 2. The entire restoration based FMZ 1C would be irrigated with drip irrigation. Permanent irrigation would be provided for establishment and long-term FMZ fuel moisture management, although irrigation application is expected to be minimal based on cacti's ability to efficiently utilize available water. No dry grass or species from the Undesirable Plant List (Appendix F) would be allowed within FMZ 1C habitat restoration area. Should volunteer species establish within the FMZ/habitat management area, they would be removed during the maintenance period(s).

6.1.1.4 Zone 2 – Retain 30% of Vegetation (50 to 100 feet wide)

A thinning zone reduces the fuel load of a wildland area adjacent to Zone 1C, and thereby, reduces heat and ember production from wildland fires, slows fire spread, and reduces fire intensity as it approaches the Zone 1C. Zone 2 adjoins Zone 1C on its outer edge and measures 50 to 100 feet in width. In this Zone, no more than 30% of the native, non-irrigated vegetation would be retained. This area requires periodic inspection and maintenance by the HOA.

Zone 2 includes the following key components:

- Zone 2 requires a minimum of 70% thinning or removal of plants, focus on removing the most flammable species, and dead and dying plants while creating a mosaic of shrub groupings.
- Zone 2 consists of low-growing, fire resistant shrubs and groundcovers with an average height less than 24 inches.
- Grasses between shrub groupings would be cut to 4 inches in height.
- Ground cover between shrub groupings to be maintained less than 6 inches high.
- Trees and tree-form shrub species that naturally grow to heights that exceed 4 feet would be vertically pruned to prevent ladder fuels.
- Maintenance including ongoing removal and thinning of dead/dying shrubs.
- Plant species introduced or to remain in Zone 2 would not include prohibited or highly flammable species (Refer to Appendix F).

6.2 Other Vegetation Management

Note: Prior to initiation of grading operations, an interim construction period fuel modification-phasing plan will be submitted to SFD for approval.

6.2.1 FMZ for Existing Communities

The Fanita Ranch HOA will provide and maintain a 100-foot wide thinning zone where existing fuels are maintained in a low fuel state consistent with a Zone 2. Grasses will be mowed to six inches and shrubs thinned to maintain spacing and overall fuel loads at Zone 2 levels (See Section 6.1.1.4).

6.2.2 Special Use Area FMZ

A 50-foot buffer is provided along the existing, off-site residential homes and along the perimeter adjacent to the Preserve as presented in Appendix D-4. This 50-foot buffer is consistent with FMZ Zone 2 mowing and thinning as described in Section 6.2.1.

6.2.3 Roadside Fuel Modification Zones

Roadside FMZs would be provided and maintained for all project roads and designated fire department access roads. Roadside FMZs would be 50 feet wide from edge of road on both sides of roadways, whether on- or off-site when adjacent to natural open space areas. NOTE: water reservoir access roads and the water tank at these sites will receive 3 feet wide FMZ on shoulders and around tanks. Where off-site road improvements would be provided not adjacent to natural open space, the roadside FMZ would be 30 feet wide or whatever width is achievable within the project boundary on both shoulders. Appendices D-1 through D-4 present the locations and various configurations of the roadside FMZs for the Proposed Project.

Roadside FMZs would include the following restrictions and maintenance requirements:

- No use of undesirable plants (Appendix F) within this zone.
- Roadside FMZ would be ~~either~~ permanently irrigated and replanted with fire resistive plant material to Zone 1 FMZ standards.
- Native or annual grasses would be mowed to 4 inches in height before drying out
- Single specimen trees, fire-resistive shrubs, or cultivated ground cover (such as green grass, succulents, or similar plants) may be used, provided they do not form a means of readily transmitting fire.

Trees may be planted within the Roadside FMZs. The following criteria must be followed:

- Tree spacing to be 20 feet between mature canopies (30 feet if adjacent to a slope steeper than 41%). This may require initial planting spacing of 50 feet on center.
- Trees must be limbed up one-third the height of mature tree or 6 feet above ground, whichever is greater.
- No tree canopies lower than 13 feet 6 inches over travel lanes to allow clearance for emergency response vehicles.
- No trees would be planted that are listed on the Undesirable Plant List (Appendix F)
- No flammable understory is permitted beneath trees. Any vegetation under trees to be fire resistive and kept to 2 feet in height or below, and no more than one-third the height of the lowest limb/branch on the tree.
- No tree limbs/branches are permitted within 10 feet of a structure.

6.2.4 Water Detention/Treatment Basins

Fire-safe vegetation management would be provided within all Fanita Ranch water detention/treatment basins and similar water management features on a yearly basis in accordance with the City's weed abatement standards and in compliance with the following guidelines.

- Where adjacent to developed areas, the slopes of the basins would be irrigated and treated as Zone 1C fuel modification. Please refer to Section 6.1.1.3 for details.
- Groundcovers or shrubs included on the basin bottom would be low-growing with a maximum height at maturity of 36 inches.
- Single tree specimens or groupings of two to three trees per grouping of fire resistive trees or tree form shrubs may exceed this limitation if they are located to reduce the chance of transmitting fire from vegetation to habitable structures. Also, the vertical distance between the lowest branches of the large trees or tree form shrubs and the tops of adjacent plants must be maintained at three times the height of the adjacent plants to reduce the spread of fire through ladder fuels.
- All trees would be planted and maintained at a minimum of 10 feet from the tree's mature drip line to any structure.
- Grasses must be maintained/mowed to no more than 6 inches in height.
- This area would be maintained annually free of dying and dead vegetation.

6.2.5 Farmland – Row Crops, Orchards, or Vineyards

Row crops, orchards, and vineyards at Fanita Ranch would be managed and maintained by an on-site agriculture management team. The crops, orchard trees, and grape vines planned for Fanita Ranch would be maintained in an ignition resistant condition and are not considered to represent a wildfire risk. However, the project's farmlands are near wildland areas and the rows closest to natural vegetation could be exposed to extreme, radiant heat. The agriculture areas would perform a dual role as food production and FMZ land uses. General fire protection safety measures are as follows:

- All agriculture areas would include maintenance for healthy, hydrated plants.
- Dead, dying, declining plants would be removed when detected
- Fallow fields would be plowed annually prior to June 1 so that spent plants are not allowed to remain standing where they could facilitate fire spread
- All agricultural areas, including row crops, orchards, or vineyards would include a 10-foot wide firebreak between the native vegetation and farmland. This area may be mowed and can double as a roadway or pathway. A 10-foot wide firebreak provides a buffer between the agriculture areas and unmaintained fuels to minimize occurrence of accidental ignitions from spreading off-site and providing an anchor point for fire operations during wildland fires.

The following guidelines provide defensible space around farm equipment and structures and serve as access points for firefighting efforts.

- A 12-foot wide fire road would be cleared around the perimeter of the farmland.
- Store boxes, stakes, and other combustible farm supplies safely, including leaving 10-foot wide firebreaks between stacks.
- All dry grasses mowed or disked to bare soil.
- Off-site removal of all row crop debris unless plowed back into the soil.
- Create a safe zone clear of all vegetation for ranch equipment.
- Clear vegetation around fuel tanks per CFC[9].
- Properly mark all storage areas used for chemicals or hazardous materials.
- Irrigation system would be functional and routinely maintained at all times.

The following maintenance and management guidelines have been developed to minimize the likelihood of ignition and reduce the fire spread potential within proposed orchards:

- No orchards will be installed within the FMZs.
- Maintain orchard tree canopies such that a 5-foot horizontal clearance exists between the outward edges of tree canopies.
- Maintain mature orchard tree canopies such that a 4-foot vertical clearance exists between the bottom edges of the canopy and the upper edge of the mulch understory.

[9] Any diesel fuel tanks that may be included on site associated with the agricultural operations would be no larger than 500-gallon convault style tank with self-containment, to the Code.

- Maintain a minimum distance of 15 feet from the outward edge of the canopy of the perimeter row of orchard trees to adjacent shrubs taller than 2 feet in overall height.
- Maintain compacted mulch layer throughout the entire orchard at a depth of 2-inches. Composted mulch/wood chips produce low flame lengths and tend to have a slower rate of spread (Quarles and Smith 2008).
- Clovers and other legumes can be used as a cover crop between rows or underneath orchard trees if cut or mowed to a height of 2–3 inches before drying out.
- Routinely prune orchard trees to remove deadwood and dying material and routinely remove dead trees in a timely manner so that they will not facilitate fire ignition or spread, even if this occurs on a large-scale basis.
- Maintain the orchard free of debris, trimmings, and other organic waste.
- Maintain orchard trees to ensure their overall health and vigor, including routine pruning, irrigation, and pest/disease management.
- Routinely inspect, maintain, and repair the orchard's irrigation system for leaks, damage and effectiveness.
- Routinely mow and/or line trim any weeds or non-native grasses occurring within the orchards and replenish mulch in such areas to minimize or prevent weed/grass re-growth.

The following maintenance and management guidelines have been developed to minimize the likelihood of ignition and reduce the fire spread potential within proposed vineyards:

- Vineyards can be installed within the FMZs and will be treated as a Zone 1B.
- Maintain grape vines to ensure their overall health and vigor, including routine pruning, irrigation, and pest/disease management.
- Routinely prune grape vines to remove deadwood and dying material and routinely remove dead vines in a timely manner so that they will not facilitate fire ignition or spread.
- Maintain the vineyards free of debris, trimmings, and other organic waste.
- Routinely inspect, maintain, and repair the vineyard's irrigation system for leaks, damage and effectiveness.
- Routinely mow and/or line trim any weeds or non-native grasses occurring within the vineyards and replenish mulch in such areas to minimize or prevent weed/grass re-growth. Clovers and other legumes can be used as a cover crop between rows, if cut or mowed to a height of 2–3 inches before drying out.

6.2.6 Additional Tree Planting and Maintenance Standards

Tree planting in the park and maintenance areas as well as along roadways is acceptable, as long as they meet the following restrictions as described below:

- For streetscape plantings, fire resistive trees can be planted such that the mature canopy would not encroach into the travel lane, or produce a closed canopy effect as this would require aggressive pruning that may not result in desired tree form. Vertical clearance within travel lanes is required to be 13 feet 6 inches.
- Crowns of fire resistant trees located within a FMZ would be maintained to include a minimum horizontal clearance of 10 feet.
- Mature trees would be pruned to create a clearance from understory plantings. The standard clearance requires removal of lower limbs one-third the tree height or 6 feet above the lower plant heights, whichever is less.

- Dead wood and litter would be regularly removed from trees.
- Ornamental trees would be limited to groupings of 2–3 trees with canopies for each grouping separated horizontally as described in Table 5.

6.2.7 San Diego Gas and Electric Easement

A San Diego Gas and Electric (SDG&E) easement occurs along the southern portion of the Fanita Ranch property. This easement would be maintained by SDG&E in accordance with its vegetation management program and standard policies mandated by the CPUC, including the GO 95 rules (CPUC 2015). Accordingly, hazardous fuel conditions would be addressed by SDG&E in a timely manner.

6.2.8 Trail Vegetation Management

Fanita Ranch trails include the community pathways that are all accessible from public roads and the network of open space trails, interconnecting the community. Trail maintenance would occur to remove flashy fuels and maintain the trail in a useable, low fuel condition. The community pathways would be accessible by emergency all-terrain vehicles, such as "UTVs" accessed at numerous locations within the community. The open space trail network would be accessible from the Proposed Project via trail access points (See Appendices D-1 through D-4 for trailhead access points).

6.2.9 Parks and Greenways

Fire Safe Vegetation Management would be provided within Fanita Ranch parks and other greenway areas, regardless of location, in compliance with the guidelines in this plan.

- Grasses must be maintained/mowed to no more than 4 inches.
- Types and spacing of trees, plants and shrubs, to comply with the criteria in this plan.
- Areas would be maintained free of down and dead vegetation.
- Trees to be properly limbed and spaced and would not be of a prohibited type.
- No species from the Undesirable Plant List (Appendix F) allowed.

6.2.10 Interior Manufactured Slopes

Interior slopes would be considered "Vegetation Management Areas". These internal slopes would include:

- The area is completely irrigated or the area is adequately separated from structures.
- There is a noncombustible setback zone of 15 feet from all structures (see Zone 1A requirements).
- Only trees and shrubs from the Proposed Project Plant Palette (Appendix G), and planted in accordance with spacing requirements, can be used within the first 50 feet from any structure.
- Vegetative understory must not create a fuel ladder or create the potential for ground fires. Trees would be limbed up to three times the height of the understory vegetation height or no vegetation taller than 2 feet in height within 15 feet of trees would be allowed.

6.2.11 Vacant Parcels and Lots

- A Fuel Modification Phasing/Development Plan shall be drafted and implemented for the phasing of the Fanita Ranch Project to ensure the safety of the homes and occupants during phasing/development of the project. All bullet items in this list shall be per that plan.
- Vegetation management would not be required on vacant lots until construction begins. However, perimeter FMZs must be implemented prior to commencement of construction utilizing combustible materials.
- Vacant lots adjacent to active construction areas/lots would be required to implement vegetation management if they are within 50 feet of the active construction area. Perimeter areas of the vacant lot would be maintained as a vegetation management zone extending 50 feet from roadways and adjacent construction areas.
- Prior to issuance of a permit for any construction, grading, digging, installation of fences, etc., on a vacant lot, the 50 feet at the perimeter of the lot is to be maintained as a vegetation management zone.
- In addition to the establishment of a 50-foot-wide vegetation management zone prior to combustible materials presence on site, existing vegetation on the lot would be reduced by at least 70% upon commencement of construction.
- Dead fuel, ladder fuel (fuel which can spread fire from ground to trees), and downed fuels would be removed and trees/shrubs would be properly limbed, pruned and spaced per this plan.

6.2.12 Environmentally Sensitive Areas

In environmentally sensitive areas that contain sensitive habitat, cultural sites, riparian areas, biological buffer areas, detention basins, permission would be needed from the City, and the resource agencies, as appropriate. The Fanita Ranch Project's managed and maintained FMZs are designed to be outside of environmentally sensitive areas.

6.2.13 Private Lots

None of the plant materials listed in Appendix F (Undesirable Plant Species) would be planted on private lots that are exposed to the WUI (this includes all lots in the community, due to potential for ember production during wildfire). Fanita Ranch would provide that list and other recommendations to all buyers in a private property owners' guide to fire safe vegetation management on private lots.

Deed restrictions would be recorded against private lots including any portion of the FMZs on the private lot and would specify approved plant palettes, prohibitions regarding combustible structures, including fencing and other accessory structures. Deed restrictions would run with the land and be conveyed to any subsequent owner of the private lot.

In addition, the project Covenants, Conditions, and Restrictions (CC&Rs) would include a reference to the FPP to ensure compliance with the FPP. Owners of private lots would be notified in the project's CC&Rs and property disclosures that they are prohibited from conducting any vegetation management activities outside their private property.

6.2.14 Undesirable Plants

Certain plants are considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be physical or chemical. The plants included in the Undesirable Plant List (Appendix F) are unacceptable from a fire safety standpoint, and would not be planted on the site or allowed to establish opportunistically within the FMZs or landscaped park and maintenance areas.

Exception:

1. *Podocarpus* species, *Bougainvillea* species, and Salvia species are allowed, if deadwood is removed annually and tree/shrub canopies properly thinned out to make less prone to ignite or spread flames to other vegetation. *Bougainvillea* spp. will not be planted near nor attached to trellis structures that are attached to a combustible structure.
2. Olive trees will be used in an orchard setting under intensive, agricultural management to minimize fire hazard (See orchard maintenance standards in section 6.2.5: Farmland - Row Crops, and Orchards, or Vineyards).

6.2.15 Fuel Modification Maintenance

Vegetation maintenance would occur throughout the year and would be monitored and enforced by the HOA. Homeowners and private lot owners would be responsible for all vegetation management on their lots, in compliance with this FPP, which is consistent with SFD requirements. The HOA would hire a qualified SFD-approved 3rd party FMZ inspector and a 3rd party landscape plan reviewer to ensure that the required fuel reduction work occurs and the FMZs remain functional. The 3rd party FMZ inspector and landscape plan reviewer would prepare inspection reports twice a year that document the functional condition of all HOA maintained property and provide the reports to the HOA and the Santee Fire Department (SFD). If the findings in a report indicate that any of the HOA maintained properties are out of compliance, then the HOA would be responsible to bring the property into compliance.

The HOA would hire an "Approved Maintenance Entity" (AME) to perform the maintenance in all HOA maintained property. The AME would perform FMZ maintenance in all Villages and community FMZs, would be responsible for, and would have the authority to ensure long-term funding and ongoing compliance with all provisions of this FPP. The AME's responsibilities include: vegetation planting, fuel modification on the perimeter and within interior maintained common areas, vegetation management, and maintenance requirements on all private lots, multi-family residences, school (SFD may inspect schools and enforce fuel modification requirements), parks, common areas, roadsides (including two primary access points), the trail system, and open space under their control. Any water quality basins, flood control basins, channels, and waterways would be kept clear of flammable vegetation, subject to Section 6.2.2.

6.2.16 FMZ Compliance Inspections

The Project HOA would obtain an FMZ inspection and report from the qualified SFD-approved 3rd party inspector and landscape plan reviewer twice a year, that certifies that vegetation management activities throughout the project site have been performed pursuant to this FPP. The two FMZ compliance inspections would occur in June and late September each year.

6.2.17 Construction Phase Fuel Management

Vegetation management requirements would be implemented at commencement and throughout the construction phase. Vegetation management would be performed pursuant to this FPP and SFD requirements on all building locations prior to the start of work and prior to any import of combustible construction materials. Adequate fuel breaks, as approved by SFD, would be created around all 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.

In addition to the requirements outlined above, the project would comply with the following important risk-reducing vegetation management guidelines:

- All new power lines would be underground, for fire safety during high wind conditions or during fires on a right of way, which can expose aboveground power lines. Temporary construction power lines may be allowed in areas that have been cleared of combustible vegetation.
- A Construction Fire Prevention Plan (CFPP) has been prepared for the Project (Appendix H). The CFPP provides standard protocols and approaches for reducing the potential of ignitions for typical construction site activities and agricultural operations. When employed, the concepts discussed in the CFPP will help minimize and avoid ignitions as well as extinguish any ignitions while they are small and controllable.
- Caution must be used to avoid erosion or ground (including slope) instability or water runoff due to vegetation removal, vegetation management, maintenance, landscaping, or irrigation. No uprooting of treated plants is necessary.

6.3 Road Requirements

6.3.1 Access and Egress

Site access would comply with the requirements of the 2019 or most recently adopted CFC and City Ordinance No. 570. The project's circulation system would consist of both public and private roads with each being built to the respective standards and maintained by a funded entity (public roads maintained by the City, private roads maintained by an HOA and/or CFD).

At least two points of primary access for emergency response and evacuation would be provided into the Fanita Ranch community. All interior residential streets would be designed to accommodate a minimum of a 77,000-pound fire truck. SFD would participate in approval of street names.

Primary access would be via Fanita Parkway, which would be improved to include the following:

- Mast Boulevard to Lake Canyon Road – four lanes (two northbound and southbound) with 31 feet paved curb to curb in each direction within an 89 to 97 foot wide ROW (VTM Section #1).
- Lake Canyon Road to Ganley Road - three total lanes (two southbound and one northbound) with 31 feet paved curb to curb on southbound side and 20 feet curb to curb northbound side for a total of 51 feet paved within a 78 to 86 feet ROW (VTM Section #1A).

- Ganley Road to the Fanita Community – one lane each direction, 22 feet paved curb to curb southbound side, which includes a 10-foot emergency/bike lane and 20 feet curb to curb northbound side within a 69 to 77 feet wide ROW (VTM section #4).
- Fanita Parkway (Street E to Street N) – one lane each direction, 22 feet paved curb to curb southbound side and 25 feet curb to curb northbound side within an 83 feet wide ROW (VTM Section #5).

The Project includes additional primary access to the south via Cuyamaca Street, providing ingress by fire agencies and egress by residents and visitors.

The Orchard Village includes a looped road system that provides residents with two access routes connecting to the remainder of the Fanita Community, at which point there are additional routes to the primary and secondary egress routes.

Fire department engine access points will be provided at dead end streets on the southerly, easterly, and westerly sides of existing, neighboring developments where they do not currently exist. These access points will be provided at SFD designated key points. Appendix D-4 presents the locations of engine access points onto the southern portion of the Fanita Ranch property. Engine access will be facilitated via mountable curbs and accessible gates with Knox padlocks.

6.3.2 Road Widths

All on-site road widths would be constructed according to the Development Plan standards. All streets within the project, public and private, include on-street parking when there is at least 36 feet of paved road width. Parking would be restricted along red curb painted fire lanes and by posting of signs stating “No Parking; Fire Lane” correctly marked per the California Vehicle Code to preserve the unobstructed width for emergency response. The signs would include language identifying the towing company and their phone number enabling legal enforcement of the no parking areas.

6.3.3 Road Surface

All fire access and vehicle roadways would be of asphaltic concrete, except as noted for grades exceeding 13% and designed and maintained to support the imposed loads of fire apparatus (not less than 77,000 pounds) that may respond, including Type I engines, Type III engines, and ladder trucks. Access roads and water supply would be completed and paved prior to lumber drop.

6.3.4 Interior Circulation Roads

- Interior circulation roads include all roadways that are considered common or primary roadways for traffic flow through the site and for fire department access. Any dead-end roads serving new buildings that are longer than 150 feet would have approved provisions for fire apparatus turnaround in accordance with SFD standards at the time of approval. SFD’s Fire Marshal would establish a policy identifying acceptable turnarounds for various Project product types.
- Fire apparatus turnarounds would include turning radius of a minimum 28 feet, measured to inside edge of improved width.

- Minimum paved radius width for a project cul-de-sac would be 38 feet with no parking, or a Fire Department-approved alternative. Cul-de-sac bulbs would have signs posted "No Parking; Fire Lane." Cul-de-sacs would have a red painted curb with white letters "No Parking Fire Lane".
- Cul-de-sac bulbs are required on dead-end roads in residential areas where roadways serve more than two residences.
- Roadways and/or driveways would provide fire department access to within 150 feet of all portions of the exterior walls of the first floor of the structures (all new structures are fire sprinklered).
- Traffic calming devices (including, but not limited to, speed bumps, speed humps, speed control dips, etc.) would be prohibited unless approved by the fire code official. The Project proposes seven round-abouts for SFD review and approval.
- Vertical clearance along roadways is required to be 13 feet 6 inches. Maintenance is required to ensure that vegetation and trees on roadsides do not grow over or into the roadway and impede emergency apparatus access. Vegetation would be fire resistant and comply with this plan.
- Interior circulation roads passing through open space would maintain a 50 feet buffer along either side where fuel modification/reduction is completed, annually or as needed, according to specifications provided in this FPP.
- Angle of approach/departure would not exceed 7 degrees (12%). Road grades would not exceed 15%, unless approved by the Fire Chief (maximum 20%).

6.3.5 Gates

Gates are not proposed within Fanita Ranch. However, should gates become desired or necessary:

- Any automatic gates would be provided in compliance with SFD requirements and may not include gating of public roads.
- Any automatic gates would be equipped with a Knox, emergency key-operated switch overriding all command functions and opening the gate(s). Automatic gates accessing through the main access and emergency access roadways would be equipped with approved emergency traffic control-activating strobe light sensor(s) which would activate the gate from both directions of travel on the approach of emergency apparatus. The automatic gate would have a battery back-up or manual mechanical disconnect in case of a power failure. The gate(s) would include a magnetic or pressure activated switch for automatically opening the gate from the interior of the project for resident egress.
- Pole gates or other structures or devices, which could obstruct fire access roadways or otherwise hinder emergency operations would be equipped with an approved Knox padlock.

6.3.6 Driveways

Any new structure that is 150 feet or more from a fire apparatus access road would have a paved driveway meeting the following specifications:

- Grades would be less than 15%. If over 15% grade, Portland cement concrete base with heavy broom finish would be required. In no case would a driveway exceed 20% grade.
- Driveway aprons would meet the code standard with a 28 degree inside turning radius.

6.3.7 Premises Identification

Identification of roads and structures would comply with the 2019 or most recently adopted CFC, Sections 505, as follows:

- Approved numbers and/or addresses would be placed on all new and existing buildings and at appropriate additional locations, plainly visible and legible from the street or roadway fronting the property when approaching from either direction. The numbers would contrast with their background and would meet the following minimum size standards: 4" high with a ½" stroke for residential buildings, 6" high with a ½" stroke for commercial and multi-residential buildings and 12" high with a 1" stroke for industrial buildings. Additional numbers would be required where deemed necessary by the fire code official, such as rear access doors, building corners and entrances to commercial centers. The fire code official may establish different minimum sizes for numbers for various categories of projects.
- Multiple structures located off common driveways would include posting structure identification on structures, on the entrance to individual driveways, and at the entrance to the common driveway.
- If the structure is 100 feet from the roadway, structure identification should also be located at the entrance to the driveway.
- Illuminated directory maps would be installed at driveway entrances to all multi-family residential developments with 15 units or more within the project site (City of Santee 2019 - Section 505.3). Final location of directory maps and content would be approved by the SFD Fire Marshal.

6.3.8 Response Map Updates

Any new development which necessitates updating of emergency response maps by virtue of new structures, hydrants, roadways or similar features, are required to provide map updates to the City of Santee. The applicant would provide a copy of building plans in Geo-Referenced format to be used by SFD for pre-fire planning purposes and for update of applicable incident response maps. Information would specifically include a site plan and building plan showing locations of utility shut-offs, fire sprinkler risers and shut-off valves, the fire department connection for fire protection sprinkler system, fire alarm panels, fire hydrants, fire department connection standpipe, and Knox box. The map update information would be provided in a City- approved coordinate system.

6.4 Structure Requirements

6.4.1 Ignition-Resistance

This section outlines ignition-resistant construction (for all structures) that would meet the requirements of the City's Fire and Building Codes. The following construction practices respond to the requirements of the Santee Municipal Code and Ordinance 570 and are consistent with the 2019 California Fire (Chapter 49) and Building Codes (Chapter 7A) and Santee's Fire Code amendments. Code updates are likely to occur before the Proposed Project is fully constructed. As such, building plans must meet the "then-current" California Building and Fire Codes and City amendments in effect at the time of building plan submittal. Appendix I provides a summary of the requirements for ignition resistant construction.

There are two primary concerns for structure ignition: 1) radiant and/or convective heat and 2) burning embers (NFPA 2008, IBHS 2008). Burning embers have been a focus of building code updates for at least the last decade, and new structures in the WUI built to these codes have proven to be very ignition resistant.

Likewise, radiant and convective heat impacts on structures have been minimized through the CBC Chapter 7A exterior fire ratings for walls, windows and doors. Additionally, provisions for modified fuel areas separating wildland fuels from structures have reduced the number of fuel-related structure losses. As such, most of the primary components of the layered fire protection system provided by the Proposed Project are required by the City, County, and state codes. However, these requirements are worth listing because they have proven effective for minimizing structural vulnerability to wildfire and, with the inclusion of required interior sprinklers (required by SFD since 1989), of extinguishing interior fires, should embers succeed in entering a structure.

Even though these measures are now required by the latest Building and Fire Codes, at one time, they were used as to compensate for buildings in WUI areas, because they were known to reduce structure vulnerability to wildfire. These measures performed so well, they were adopted into local and state codes. For instance, San Diego County after-fire assessments, indicate strongly that the building codes are working in preventing home loss: of 15,000 structures within the 2003 fire perimeter, 17% (1,050) were damaged or destroyed. However, of the 400 structures built to the 2001 codes (the most recent at the time), only 4% (16) were damaged or destroyed. Further, of the 8,300 homes that were within the 2007 fire perimeter, 17% were damaged or destroyed. A much smaller percentage (3%) of the 789 homes that were built to 2001 codes were impacted and an even smaller percentage (2%) of the 1,218 structures built to the 2004 Codes were impacted (IBHS 2008). It has been reasoned by fire officials conducting after-fire assessments that damage to the structures built to the latest codes is likely from unmaintained flammable landscape plantings or objects next to structures or open windows or doors (Hunter 2008).

The building codes developed for construction in high and very high fire hazard zones is working to minimize the vulnerability of new residences and other structures to wildfires. There are numerous examples of master planned communities built to ignition resistant standards and include HOA managed FMZs that have been tested by wildfire and functioned as they were intended. The proposed project incorporates a fire protection system that has been found by after-action fire reports, independent researchers, as well as USGS researchers (2013) to perform well against wildfires. Newer communities, especially those within jurisdictions that have adopted the latest State Fire and Building Codes (like San Diego County), and that have well-defined FMZ requirements, perform well against wildfires. Examples include 4S Ranch, Cielo, The Crosby, The Bridges (IBHS 2008), and Bel Etage/Santa Fe Valley in San Diego County, Stevenson's Ranch in Santa Clarita, Serrano Heights in Orange County, and many other examples of master planned communities and individual, prepared homes in Southern California (FEMA/CalOES 2008).

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 as well as providing adequate access by emergency responders:

1. Exterior walls of all structures and garages to be constructed with approved non-combustible (stucco, masonry, or approved cement fiber board) or ignition-resistant material from grade to underside of roof system. Wood shingle and shake wall covering is prohibited. Any unenclosed under-floor areas would have the same protection as exterior walls. Per City Building Code, Chapter 7-A: Exterior wall coverings to extend from top of foundation to the underside of roof sheathing, and terminate at 2-inch nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure). The underside of any cantilevered or overhanging appendages and floor projections would maintain the ignition-resistant integrity of exterior walls, or projection would be enclosed to grade.
2. 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.
3. There would be no use of paper-faced insulation or combustible installation in attics or other ventilated areas.
4. 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.

5. All roofs would be a 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.
6. 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.
7. 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.
8. Turbine vents would be prohibited.
9. Exterior glazing in windows (and sliding glass doors, garage doors, or decorative or leaded glass in doors) to be dual pane with one tempered pane, or glass block or have a 20-minute fire rating. Glazing to comply with CBC Chapter 7-A.
10. 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.
11. Skylights to be tempered glass.
12. 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.
13. Doors to conform to SFM standard 12-7A-1, or would be of approved noncombustible 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.
14. 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.
15. 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.
16. There would be no combustible awnings, canopies, or similar combustible overhangs.
17. 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.
18. 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
19. 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.

20. 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.
21. Additionally, any of the above-listed structures (i.e., outbuildings, storage sheds, barns, separate unattached garages) that are 500 square feet or less in size and 10 or more feet from an adjacent structure would be not be required to include automatic fire sprinklers. Locations, and required FMZs, would be subject to approval of City Fire Marshal and the Building Official based on size of the structure.

While these standards would provide a high level of protection to structures in this development, and would be expected to reduce the potential for ordering evacuations in a wildfire, there is no guarantee that compliance with these standards would prevent damage or destruction of structures by fire in all cases. Nevertheless, the analysis indicates that the potential risk is considered acceptable according to CEQA thresholds and industry standards.

6.4.2 Fire Protection System Requirements

Infrastructure, Structural Fire Protection, and Fire Protection Systems

WUI fire protection requires a systems approach, which includes the components of vegetation management, structural safeguards (both previously addressed), and adequate infrastructure. This section describes the infrastructure components:

Infrastructure Requirements

The following City of Santee requirements are consistent with the 2019 California Fire Code and nationally accepted fire protection standards. All water storage and hydrant locations, mains and water pressures would be consistent with City's Fire Code fire flow requirement (MBI 2020, Dexter Wilson 2020).

Water

Water service for the Fanita Ranch project would be provided by the Padre Dam Municipal Water District (PDMWD). The water system shall be a public system designed and installed by PDMWD and SFD requirements. The water system for Fanita Ranch shall provide 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.

Fire Hydrants

Hydrants are subject to SFD approval. Hydrants to be located on the normal fire apparatus response side of the road at each intersection, at the beginning radius of cul-de-sacs, and at 300-foot spacing as required by SFD within VHFHSZs. Where applicable, hydrants to be located at the entrance to cul-de-sac bulb (not in the bulb itself unless specified by SFD). Hydrants to be provided on each side of any divided road or highway. Hydrants would be consistent with SFD Design Standards as follows:

- **Required installations.** The location, type and number of fire hydrants connected to a water supply capable of delivering the required fire flow would be provided on the public or private street, or on the site of the premises to be protected or both. Fire hydrants would be accessible to the fire department apparatus by roads meeting

the requirements of section 503 of the CFC. Fire service laterals, valves, backflow preventers, and meters would be installed on site as required by the PDMWD. All fire department connections would be installed in accordance with mounting requirements as specified by the SFD Fire Marshal.

- **Location of fire hydrants.** Hydrants would be in place and serviceable prior to delivery of combustible materials to the site. Fire hydrants would be located according to engineering standards and as required by the fire code official using the following criteria and taking into consideration departmental operational needs. Fire hydrants would be located every 1,000 feet apart along Fanita Parkway and Cuyamaca Street. Hydrants within Project neighborhoods would be 300 feet apart. Prior to the issuance of building permits, the applicant would submit to SFD plans demonstrating a water system capable of handling the fire flow requirements.
- **Fire hydrant construction and configuration**. All fire hydrants would be of bronze construction, including all internal parts except seats. Alternative materials may be used if approved by SFD's Fire Marshal and PDMWD. The stems would be designed and installed in a manner that would ensure that they would not be projected outward from the main body by internal water pressure due to disassembly. The number and size of fire hydrant outlets would be at a minimum one 4-inch port and two, 2 1/2-inch ports.
- **Signing of water sources and fire department connections**. Fire hydrants would be identified by a reflectorized blue marker and fire department connections would be identified by a reflectorized green marker, with a minimum dimension of 3 inches, in the center of the travel lane adjacent the water source. Crash posts would be provided where needed in on-site areas where vehicles could strike fire hydrants and would be consistent with Section 312 of the CFC.
- **Vegetation Clearance**. A three-foot clear space (free of ornamental landscaping and retaining walls) would be maintained around the circumference of all fire hydrants.

Fire Sprinklers

All new structures would be provided interior fire sprinklers. Automatic internal fire sprinklers would be in accordance with NFPA 13, 13-D, or 13-R and City of Santee installation requirements as appropriate. Actual system design is subject to final building design and the occupancy types in the structure.

Exterior audio/visual device(s) would be connected to every automatic fire sprinkler system in an SFD-approved location. These sprinkler water-flow alarm devices would be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size in the system. Where a building fire alarm system is installed, actuation of the automatic sprinkler system would actuate the building fire alarm system.

Michael Baker International identified in their Water Service Study (MBI 2020) an area within Phase 3 of the Proposed Project where approximately 21 single-family residential units will experience residual pressures of less than 40 pounds per square inch (psi) during peak hour demand conditions. These lots are identified in Figure 18. Per the 2020 MBI study, residual pressures at these lots range from 29 psi to 40 psi during peak hour demands. This means that all of the sprinkler heads will operate in the event of a fire, but sprinkler head coverage would range from normal at first floor sprinkler heads to significantly reduced coverages at upstairs sprinkler heads. For these marginal pressure lots, a private booster pump with a secondary power source will be installed. This will ensure adequate domestic pressures to these residences even in the event of a power outage.

The MBI Study does verify that required fire flows can be provided to the hydrants in the area at a residual pressure in excess of 25 psi.

Smoke Detectors

All residential units would have electric-powered, hard-wired smoke detectors in compliance with SFD Fire Code.

6.4.3 Additional Requirements and Recommendations Based on Occupancy Type

This section includes conceptual occupancy-specific recommendations based on the type of occupancy.

Additional Commercial and School Building Requirements

All retail, commercial, and office buildings would comply with appropriate building codes. The school would comply with California State Architects Office requirements. Construction in this area would comply with CBC, Chapter 7-A, and would comply with other state requirements for fire safety. Access, water supply, and hydrant plans for the schools are subject to SFD approval.

6.5 Fire Protection Features' Beneficial Effect on Wildfire Ignition Risk Reduction

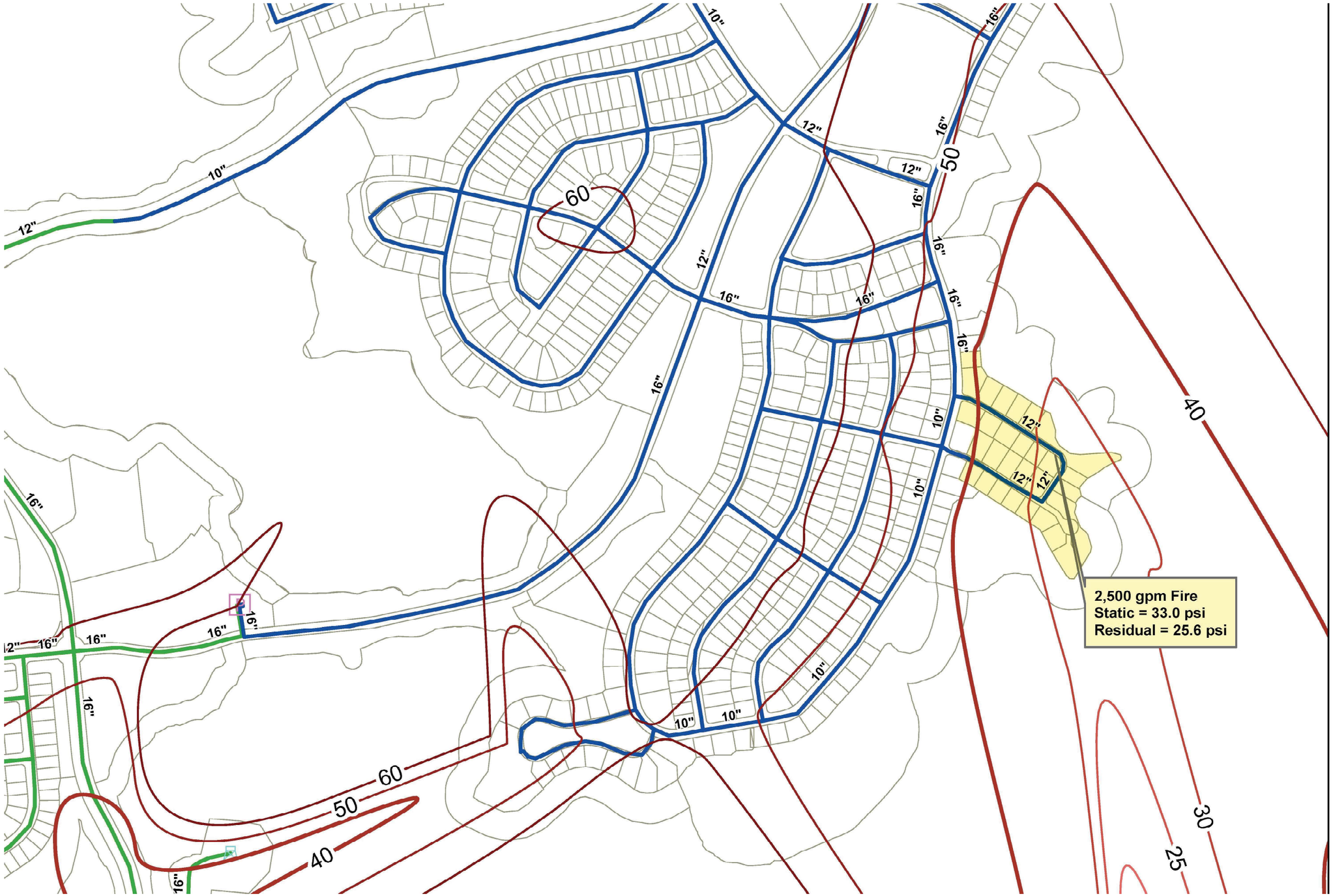
Each of the fire protection features provided as part of the code requirements or customized for this Project are based on the FPP's evaluation work to protect the site, its structures and their occupants from wildfires. These features also have a similar positive impact on the potential for wildfire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

As mentioned previously, 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:

1. **Ignition resistant, planned and maintained landscape** – all site landscaping of common areas and fuel modification zones will be subject to strict plant types that are lower ignition plants with those closest to structures requiring irrigation to maintain high plant moistures which equates to difficult ignition. These areas are closest to structures, where ignitions would be expected to be highest, but will be prevented through these ongoing maintenance efforts.
2. **Wide Fuel Modification Zone around perimeter of project** – the wide FMZ (varies between 115 and 165 feet wide) includes specifically selected plant species, very low fuel densities (only 30% 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.
3. **Twice-annual FMZ inspections** – the Fanita Ranch HOA will have a contracted, 3rd party, SFD-approved FMZ inspector perform two inspections per year to ensure that FMZs are maintained in a condition that is consistent to the City's and FPP's requirements and would provide a benefit of a wide barrier separating wildland fuels from on-site ignitions.
4. **Ignition resistant structures** – all structures will be built to the Chapter 7A (CBC) ignition resistant requirements that have been developed and codified as a direct result of after fire save and loss assessments. These measures result in homes that are designed, built and maintained to withstand fire and embers associated with wildfires. It must be noted that 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 contemplates wildfire and provides design features that address

the related risk. A structure within a VHFHSZ that is built to these specifications can be at lower risk than an older structure in a non-fire hazard severity zone. The ignition resistance of on-site structures would result in a low incidence of structural fires, further minimizing potential for project-related wildfires.

5. **Interior fire sprinklers** – sprinklers in residences are designed to provide additional time for occupants to escape the home. Sprinklers in multi-family and commercial structures are designed to provide structural protection. The common benefit of fire sprinklers is that they are very successful at assisting responding firefighters by either extinguishing a structural fire or at least, 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. This is not the case with older existing homes in the area that do not include interior sprinklers.
6. **Fire access roads** – roads provide access for firefighting apparatus. Project roads provide code-consistent access throughout the community, including access from existing dead-end roads to the south of the 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.
7. **On-site Fire station** – the on-site fire station results in fast response and additional resources for SFD. Fires, whether on-site or in the open space, will 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.
8. **Water** – providing firefighting water throughout the Project with hundreds of fire hydrants accessible by fire engines is a critical component of both structural and vegetation fires. The Project provides firefighting water volume, availability and sustained pressures to the satisfaction of SFD. Water accessibility helps firefighters control structural fires and helps protect structures from and extinguish wildfires.



SOURCE: MICHAEL BAKER INTERNATIONAL 2019

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FANITA RANCH FIRE PROTECTION PLAN

FIGURE 18
Fire Flow Low Pressure Area

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7 Homeowner's Association Wildfire Education Program

The Fanita Ranch HOA would provide on-going resident, commercial lessee's, school administration and visitor education outreach regarding wildfire safety, the "Ready, Set, Go!"[10] pre-planning model, this FPP's requirements, and the Fanita Ranch Evacuation Plan.

The Fanita Ranch community Web Page would include site-specific wildfire information including practices that would not be allowed due to fire risk. Informational handouts, facility Web-site page, mailers, fire safe council participation, inspections, and seasonal reminders are some methods that would be used to disseminate wildfire and evacuation awareness information. The HOA would coordinate with SFD and other applicable fire agencies regarding wildfire educational material/programs before printing and distribution.

The Fanita Ranch residents would be provided homeowners informational brochures at point of sale regarding wildfire and this FPP's requirements. This educational information must include maintaining the landscape and structural components according to the appropriate standards and embracing a "Ready, Set, Go" stance on evacuation. Of particular importance in this FPP is the guidance in the types of plants that are allowed or prohibited in landscaped areas, including rear or side yards of lots neighboring open space, and appropriate construction within vegetation management zones.

The Fanita Ranch residents would be aware of the community's evacuation plan as the HOA would post it on its Website and provide reminders to residents on at least an annual basis. This educational outreach would result in a populace that understands the potential for evacuations and the routes and potential contingency options that may be presented to them.

[10] International Fire Chiefs Association "Ready, Set, Go" website link: http://wildlandfirersg.org/

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8 Cumulative Impact Analysis

Cumulative impacts from multiple projects or large projects within a fire agency's jurisdiction, like SFD, can cause fire response service decline and must be analyzed. The Proposed Project represents a substantial development that would increase the existing call volume by up to 2.6 calls per day (without the school), on average. The resulting impact on fire services has been analyzed within this report and determined that based on both the capacity to respond to additional calls and required travel times, would not be able to provide acceptable response to Fanita Ranch without additional resources.

Population increases in Santee can be anticipated to continue, even without the Fanita Ranch Project. The City's population increased over six percent from 2010 through mid-2019 (U.S. Census Bureau 2020). Continued population increase would be anticipated and could, over time, stress the SFD's capacity to provide response within the City's response standard. At some point, additional fire response resources would become necessary.

Fanita Ranch would provide, as a project design feature an on-site fire station which would meet the City's response goals and provide another fire station within the area that would be capable of responding to and assisting with calls beyond the project development. Therefore, this portion of the City would have enhanced fire and emergency medical service if Fanita Ranch were approved.

The Proposed Project's contributions to fire resources, along with funding for equipment and ongoing operations and maintenance are expected to enhance SFD's response capabilities and enhance the current standards for firefighting and emergency response in the City. Over the long term, it is anticipated that SFD would be able to perform its mission into the future at levels consistent with internal goals.

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9 Previous Barratt Project FPP and Compliance with Court Rulings

9.1 Background

This Fanita Ranch FPP (2022 FPP) was prepared specifically for the Proposed Project (Fanita Ranch), based on the proposed land uses and the fire environment that occurs in the Project's vicinity. This FPP incorporates the latest methods for site hazard assessments, incorporates experience from after-fire structure save and loss studies, requires ignition resistant building materials and methods, exceeds the requirements for FMZs, and offers the ability for fire and law enforcement officials to utilize an evacuation contingency option.

Development of this FPP followed an industry standard (Guidelines for Determining Significance – Wildfire) developed by leaders in the fire industry in San Diego County. The guidelines were developed specifically for Projects occurring within fire hazard severity zones and/or the wildland urban interface and address potential fire protection vulnerabilities by requiring Project's to provide additional fire protection measures, meeting access requirements, providing fire and medical emergency response within required timeframes, ensuring water and fire-flow requirements will be met, and providing managed wildfire buffers known as FMZs, amongst others, as described throughout previous Chapters of this FPP. Similarly, ignition resistant construction features have been developed from structure wildfire loss and save studies and codified in the California Building Code, which has then been adopted by most local agencies, including the City of Santee. These ignition resistant features were developed specifically to minimize structure vulnerability to exposures from wildfires, namely direct flame impingement, radiant heat, and burning embers. The application of the Guidelines requires FPPs to evaluate the fire environment and design structures and community's incorporating the various fire protection system features and measure so that they will perform well when threatened by wildfire.

This FPP was also prepared with knowledge of the previously proposed project's (Barratt Project) FPP (2007 FPP) approach and the Court Rulings that stalled the Project's approvals. The Court Rulings ultimately concluded that the FPP and subsequently retained technical fire experts did not provide sufficient evidence that the proposed project would adequately lessen fire safety risks. Also, the City determined that the vegetation management was not necessary from a fire protection perspective and would result in significant habitat impacts. Specifically, site fire safety conclusions were questioned since the FPP included open space vegetation management, but that FPP component was not adopted by the City. This 2022 FPP provides evidence that the Project will be fire safe and include substantial FMZs.

This FPP and the related Fanita Ranch Evacuation Plan also specifically respond to the March 2022 San Diego County Superior Court rulings. Those 2022 Rulings found that the EIR omitted evaluation of a fifth wildfire significance threshold, regarding whether the Project would "expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires." This FPP specifically evaluates impacts pursuant to this threshold. The 2022 Rulings also found that the EIR did not analyze evacuation timing; was unclear on use of Mast Boulevard as an evacuation route to the east to connect to SR_67; and eliminated the Magnolia Avenue extension without providing the public with the opportunity to test and evaluate that information. This FPP and the related Evacuation Plan provide evacuation modeling and correctly identify potential evacuation routes. The Magnolia Avenue extension has been added back in as part of the project as currently proposed.

9.2 2020 Fanita Ranch FPP Comparison with Barratt Project 2007 FPP

9.2.1 Site Preserve Area Fuels Management

The 2007 FPP included a recommendation for vegetation management in the site's considerable preserve areas. The City determined that the vegetation management was not necessary from a fire protection perspective and would result in significant habitat impacts. Subsequently, they accepted the FPP, but disregarded the open space preserve vegetation management recommendation. The Court concluded that the 2007 FPP's inclusion of this vegetation management recommendation, and the lack of substantial evidence that it was not necessary for a fire safe Project, resulted in a conflict that was not resolved.

The 2007 FPP proposed the use of prescribed fire, grazing, mowing and herbicides as part of a vegetation management approach outside the Project's managed FMZs. Dudek's approach in this 2020 FPP does not require open space vegetation management and is consistent with fire protection strategies, policies, and laws for new communities established throughout California's high fire hazard WUI areas. Primarily, this includes focusing defensible space in areas closest to the assets that are being protected. Fuels management in the form of prescribed fires or firebreaks has historically occurred far from the wildland urban interface (Schoennagel et. al 2009), but recent studies indicate that fuel treatments located closer to homes and communities could provide greater protection (Gibbons et al. 2012). Further, it is well-established that firebreaks and fuel breaks placed in open space areas do little to slow a wind-driven wildfire (Syphard et.al. 2011, Keeley 2016) and create invasive species issues (Merriam et.al, 2006, 2007).

Focusing vegetation management efforts, that is defensible space, around structures or community assets is the preferred strategy in terms of fuels and fire protection, (Cohen 1999, 2000). As such, defensible space around a structure increases the chance of the structure surviving a wildfire from direct contact with fire and radiant heat, which are two of the ways structures can ignite during a wildfire. Modifying vegetation around structures or community assets can also lower the probability of ignitions from embers and provide a safe place for firefighters to defend these assets (e.g., structures) against fire (Gill and Stephens 2009; Cheney et al. 2001). Additionally, structures within the Fanita Ranch Project will be constructed to CBC Chapter 7A building features, which "hardens" structures from wind-blown ember penetration and radiative heating. .

The 2020 FPP evaluated the site's fire behavior and made important project design changes to address the identified hazards. In particular, as presented in Table 6, the 2020 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 upon for fire protection and all features work together to provide a fire-adapted community that is consistent with regard to meeting the restrictive requirements for communities in the WUI.

Table 6. 2020 Fire Protection Features Compared to 2007 Fire Protection Plan

Fire Protection Features	2020	2007
Fuel Modification Zones	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

Table 6. 2020 Fire Protection Features Compared to 2007 Fire Protection Plan

Fire Protection Features	2020	2007
Site Landscaping	Site-wide restrictions on flammable species	—
Fire Resistive Landscape Plans	Plan check by qualified landscape plan checker required	No plan check required
Fuel Modification Zone Inspections	Two inspections, annually	No inspections required
Preserve area fuels management	Not proposed/necessary	Proposed
Ignition Resistant Construction	Required with additional enhancements	Required
Interior Automatic Sprinklers	Required	Required
Evacuation Plan	Provided	Not Provided

9.2.2 Firefighter Response during Wildfire

The 2007 FPP indicated that the Project was designed so that it would not require structure protection from firefighters during a wildfire. Similarly, this 2020 FPP anticipates that the need for firefighting resources will be minimal, allowing the Incident Managers flexibility for allocation of available fire response resources. Further, the 2007 EIR comments suggested that there would not be a guarantee that firefighting resources would be available to the Project during a large wildfire. However, Santee Fire Department is committed to back-filling fire stations and providing coverage at all times. During a large, regional wildfire, the City assures response from its fire stations, including the on-site station. During a large wildfire, there would be several or more fire agencies providing resources including CAL FIRE with its full complement of ground and aerial attack capabilities. San Diego County includes a significant wildfire response resource with equally as significant experience pre-planning, coordinating, and attacking wildfires that would all be available to the Project area, as needed.

9.2.3 Fire Behavior Modeling and Fuel Modification Zones

The 2007 FPP used a very aggressive fire behavior model knows as a FM 4. This model is known to dramatically overestimate fire behavior and is not applicable to most of the fuels found on the site (Weise and Reggelbrugge 1997). The 2007 FPP modeling calculated worst-case fire condition flame lengths of 95 Feet in the site's heaviest fuels.

The 2020 FPP utilizes FM 4 in specific areas where that type of fuel would occur at a climax condition when allowed to accumulate. The updated modeling resulted in worst-case flame lengths of approximately 66 feet in the site's heaviest fuels during extreme fire weather. Differences in the modeling outcomes are related to wind speeds used in the modeling effort (the fuel moisture values used in both FPPs are the same). The 2007 FPP utilized 60 mph 20-foot wind speeds. The source of the wind speed data used in the 2007 FPP is not cited and is therefore unknown. The 2020 FPP utilized wind speed values established by San Diego County. These County standards identify appropriate wind speed inputs that are based on maximum-recorded wind speeds and an analysis of 99th percentile wind speeds from local remote automated weather stations (RAWS). The Peak wind values identified in the County standards (and used in the 2020 FPP) are the highest wind speeds recorded by a RAWS during the 2003 Cedar Fire.

The 2020 FPP utilizes the results of the updated modeling to inform the type of FMZs needed to provide suitable setbacks and defensible space from wildland fuels. To that end, areas where maximum-modeled flame lengths were calculated to be less than 50 feet, 115 feet of FMZ was considered appropriate. Where worst-case flame

lengths were calculated to be 66 feet, FMZs were extended to 165 total feet. The FMZs are a critical component of the Fanita Ranch community's fire protection system and would be maintained through the HOA, funded in perpetuity, and inspected annually by a 3rd party FMZ inspector to ensure that they are functioning as designed at all times.

9.2.4 Susceptible Project Design

The 2007 FPP was based on a land plan that included peninsulas of development surrounding by wildland fuels. This situation leads to a higher risk of fire encroachment than if there is one managed exposure and where developed areas are wider with more space between native fuel areas.

The 2020 FPP is based on a land plan that excludes narrow islands and peninsulas of development and includes contiguous developed areas that form fuel breaks by converting wildland fuels to managed landscapes and ignition resistant structures.

9.2.5 Evacuation Plan

The 2007 Barratt Project EIR evaluated evacuation at a coarse level and deferred the actual evacuation plan to a point following Project approval.

The Fanita Ranch Project provides an evacuation plan that focuses on resident awareness and preparation. The evacuation plan also provides a comprehensive modeling analysis of the potential for the Fanita Ranch project to impact existing community evacuations and the time required to move all residents and visitors off the site and discusses a contingency option that may be considered safer than a short-notice evacuation if a fire ignites closer to the Project.

9.3 2022 Fanita Ranch FPP Comparison with 2020 FPP

This FPP and the related Fanita Ranch Evacuation Plan also specifically respond to the March 2022 San Diego County Superior Court ruling. The 2022 Ruling found that the EIR omitted evaluation of a fifth wildfire significance threshold, regarding whether the Project would "expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires." This FPP specifically evaluates impacts pursuant to this threshold, including addressing evacuation safety for project residents and the existing community, and shelter-in-place contingencies.

The 2022 Ruling also found that the EIR did not analyze evacuation timing. The related Fanita Ranch Evacuation Plan includes an evacuation time model, which calculates estimated evacuation travel times under existing conditions, project conditions, and project plus surrounding community conditions.

The 2022 Ruling found the EIR was unclear that Mast Boulevard to the east did not provide a direct connection to SR-67. The revised Evacuation Plan clarifies that Mast Boulevard to the east provides a connecting route to State Route 67 (SR-67) indirectly through other streets.

The 2022 Ruling found the EIR eliminated the Magnolia Avenue extension without providing the public with the opportunity to test and evaluate that information. The Magnolia Avenue extension has been added back in as part of the project as currently proposed.

10 Conclusion

This FPP has been prepared for the proposed Fanita Ranch and complies with the requirements of the 2019 Codes and San Diego County Fire Protection Plan Guidelines for Determining Significance (2010). The recommendations in this document meet or exceed fire safety, building design elements, infrastructure, fuel management/modification, and landscaping recommendations of the applicable codes. The recommendations provided in this FPP have been designed specifically for the proposed construction of structures within a WUI area.

When properly implemented on an ongoing basis, the fire protection strategies proposed in this FPP would significantly reduce the potential fire threat to the community and its structures and would assist the SFD in responding to emergencies within and adjacent the Proposed Project Site. The Fanita Ranch fire protection system includes a redundant layering of protection methods that have been shown through post-fire damage assessments to reduce risk of structural ignition.

Modern infrastructure would be provided along with implementation of the latest ignition resistant construction methods and materials. Further, all structures are required to include interior, automatic fire sprinklers consistent with the fire codes. Fuel modification that in many areas is 50% wider than the Code requires, would occur on perimeter edges adjacent preserve areas as well as throughout the interior of the Proposed Project. Future construction will comply with the most current adopted codes and ordinances in effect at the time of building plan issuance. Detailed plans, such as improvement plans, building permits, etc., demonstrating compliance with the concepts in this plan and with Fire Code requirements would be submitted to the fire authority at the time they are developed.

Based on the results of this FPP's analysis and findings, the FPP implementation measures presented in Table 7 summarize code required measures while Table 8 summarizes measures offered that exceed Code requirements. With all of the features and measures in Tables 7 and 8, the project's impact on fire safety would be less than significant.

Table 7. Code Required Fire Safety Features

Feature No.	Features Description
1	**Required Wildland Urban Interface Fire Safety Features described in Section 6.4.1.** Numerous features that reduce a project's exposure to flame and embers are required for Project's developed in the wildland urban interface. The Fanita Ranch project would implement all of them.
2	**Ignition Resistant Construction.** Project buildings will be constructed of ignition resistant construction materials based on the latest Building and Fire Codes.
3	**Interior Fire Sprinklers.** All new structures will include interior fire sprinklers and the SFD will have the authority to grant exceptions for non-combustible, smaller buildings. Lot Nos. 12 through 25 and 34 through 40 in PA 13 will have installed a private booster pump with a secondary power source due to marginal domestic pressures during peak hour demands.
4	**Fuel Modification Zones.** Provided throughout the perimeter and interior of the site.
5	**Roadside Fuel Modification Zones.** Roadside FMZs will be consistent with the current Fire Codes and include 50 feet along Project Roads adjacent to preserved habitat. Off-site road improvements would receive 30 feet of FMZ if not adjacent to natural open space on each side of pavement.
6	**Fire Apparatus Access.** Provided throughout the community and will vary in width and configuration, but will all provide at least the minimum required unobstructed travel lanes, lengths, turnouts, turnarounds, and clearances required by the applicable code.
7	**Firefighting Improvements.** Firefighting staging areas and temporary refuge areas are available throughout the Project's developed areas, and along roadways and site green spaces.
8	**Water Availability**. Water capacity and delivery will provide for a reliable water source for operations and during emergencies requiring extended fire flow.

Table 8. Code Exceeding or Alternative Materials and Methods Fire Safety Measures

Measure No.	Feature/Description
1.	**On-Site Fire Station.** Emergency response travel times consistent with the City's requirements will be provided by an on-site fire station that will be provided in accordance with the project conditions of approval. Travel times to all portions of the project will be less than six minutes with the new station.
2	**Construction Fire Prevention Plan.** Details the important construction phase restrictions and fire safety requirements that will be implemented to reduce risk of ignitions and pre-plans for responding to an unlikely ignition.
3	**Code exceeding Fuel Modification Zones.** Perimeter FMZs between 115 up to 165 feet wide, including the rear or side yard areas as part of the modified zone.
4	**Landscape Plan Review and Approval.** The HOA would hire a 3rd party Santee Fire Department approved FMZ inspector and landscape plan checker to review landscape plans for consistency with the limitations and requirements of the City and this FPP
5	**Succulent and Rock FMZ.** The project's Zone 1 and some Zone 2 areas will include extensive use of cacti habitat and cobble ground cover for habitat with a code-exceeding fire ignition resistance rating
6	**FMZ for Existing Communities.** The Fanita Ranch will provide and maintain 100 feet of FMZ along the south and east property lines, which abut the rear yards of existing residential development areas, providing maintained defensible space for those homes.
7	**Fire Department Access Points for Engines.** Fanita Ranch will provide new access points for fire engines at dead end streets on the northerly, westerly, and easterly sides of existing development areas.
8	**FMZ Inspections.** HOA will hire a 3rd party, SFD-approved, FMZ inspector and landscape plan reviewer to provide twice a year certification that the HOA maintained properties including all FMZs and trail system meet the requirements of this FPP. FMZ inspections will occur in June and late September.
9	**Wildfire Evacuation Plan.** A site-specific evacuation plan has been prepared and is consistent with the City's Emergency Operations Plan.
10	**HOA Wildfire Education and Outreach.** The Community HOA will include an outreach and educational role to coordinate with SFD, oversee landscape committee enforcement of fire safe landscaping, ensure fire safety measures detailed in this FPP have been implemented, and educate residents on and prepare facility-wide "Ready, Set, Go!" plans.

Study Limitations

Fire is a dynamic and somewhat unpredictable occurrence and as such, this plan does not guarantee that a fire would not occur or would not result in injury, loss of life or loss of property. There are no warranties, expressed or implied, regarding the suitability or effectiveness of the recommendations and requirements in this plan, under all circumstances.

The developers, contractors, engineers, and architects are responsible for proper implementation of the concepts and requirements set forth in this Plan. Homeowners and property managers are responsible to maintain their structures and lots as required by this Plan, SFD, and as required by the Fire Code.

It would be extremely important for all homeowners, property managers, and occupants to comply with the recommendations and requirements described and required by this FPP on their property. The responsibility to maintain the fuel modification and fire protection features required for this Proposed Project lies with the Homeowner's Association for common areas, homeowners for private property, and business owners for property landscapes.

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Appendix A

Photograph Log

Photograph log

Fanita Ranch

Photograph 1. Photograph looking southwest towards Santee Lakes. Rolling hills are vegetated with coastal sage scrub and annual grasses in the valley near Santee lakes.

Photograph 3. Photograph depicts fuel types (short, non-native grasses in foreground; coastal sage scrub-rolling hills) adjacent to western edge of development.

Photograph 2. View of fuel types, which were modeled under scenario #4, and terrain within and outside of the western boundary of the project area. Rolling hills in background are within MCAS Miramar.

Photograph 4. View looking north towards Sycamore Canyon County Park and City of Poway.

Photograph 5. Coastal sage scrub and non-native grasslands are present in Preserve land south of development. Looking south towards Cowles Mountain.

Photograph 6. Closer view of fuel types in the southern portion of property abutting Santee. Majority of site is Diegan coastal sage scrub, which was modeled in scenario #3.

Photograph 7. View of sage scrub fuel type just north of northeastern section of Santee. Photo shows approximate location where the secondary access for development will connect to Cuyamaca Street.

Photograph 8. View of connection point in Santee for Cuyamaca Street.

Photograph 9. Photograph depicts chamise chaparral fuels found in the northeastern portion of the property. This fuel type was modeled for scenario #1.

Photograph 10. View of fuel types in the eastern portion of property. Majority of this portion of the project area chamise chaparral and sage scrub transition. This represents the fuel type modeled under scenario #2.

Appendix B

Fire Behavior Analysis

FlamMap and BehavePlus Fire Behavior Modeling

The FlamMap software package (Finney et al. 2015) was used to evaluate fire behavior in order to document the type and intensity of fire that would be expected on the project site given characteristic site features, including topography, vegetation, and weather. FlamMap utilizes the same fire spread equations built into the BehavePlus software package, but allows for a geographical presentation of fire behavior outputs as it applies the calculations to each pixel in an associated GIS landscape (Finney 1998). The FlamMap software package is a publicly available resource available through the Fire, Fuel, and Smoke Science Program of the United States Department of Agriculture, Forest Service. FlamMap is a GIS-based software package that models potential fire behavior for constant weather conditions (wind and fuel moisture) and generates map files of potential fire behavior characteristics (e.g., flame length, crown fire activity). FlamMap outputs represent fire behavior calculated for each pixel within the analysis area independently and do not calculate fire spread across a landscape. The software requires a minimum of five input variables, including elevation, slope, aspect, fuel model, and canopy cover. To utilize the crown fire activity model for forested land cover types, additional input variables are necessary, including stand height, canopy base height, and canopy bulk density. Wind and weather data are also critical components to FlamMap modeling efforts. The following sections present a background on fire behavior modeling and present the methods and data sources used in performing the FlamMap fire behavior modeling analysis for the Project Area. The advantage of FlamMap modeling is that it evaluates anticipated site-wide fire spread and flame length values based on variations in topography and vegetative cover and provides a graphical output that can be evaluated on site maps, whereas BehavePlus provides a tabular output. BehavePlus was utilized for specific target areas for confirmation of FlamMap results.

Fire Behavior Modeling Background

Fire behavior modeling has been used by researchers for approximately 50 years to predict how a fire would move through a given landscape (Linn 2003). The models have had varied complexities and applications throughout the years. One model has become the most widely used for predicting fire behavior on a given landscape. That model, known as “BEHAVE”, was developed by the U. S. Government (USDA Forest Service, Rocky Mountain Research Station) and has been in use since 1984. Since that time, it has undergone continued research, improvements, and refinement. The current version, BehavePlus, 5.0.5, includes the latest updates incorporating years of research and testing. Numerous studies have been completed testing the validity of the fire behavior models’ ability to predict fire behavior given site specific inputs.

One of the most successful ways BEHAVE has been improved has been through post-wildfire modeling (Brown 1972, Lawson 1972, Sneeuwjagt and Frandsen 1977, Andrews 1980, Brown 1982, Rothermel and Rinehart 1983, Bushey 1985, McAlpine and Xanthopoulos 1989, Grabner, et. al. 1994, Marsden-Smedley and Catchpole 1995, Grabner 1996, Alexander 1998, Grabner et al. 2001, Arca et al. 2005). In this type of study, Behave is used to model fire behavior based on pre-fire conditions in an area that recently burned. Real-world fire behavior, documented during the wildfire, can then be compared to the BehavePlus calculations and refinements to the fuel models incorporated, retested, and so on.

Fire behavior modeling includes a high level of analysis and information detail to arrive at reasonably accurate representations of how wildfire would move through available fuels on a given site. Fire behavior calculations are based on site specific fuel characteristics supported by fire science research that analyzes heat transfer related

to specific fire behavior. Predicting wildland fire behavior is not an exact science. As such, the minute-by-minute movement of a fire would probably never be predictable, especially when considering the variable state of weather and the fact that weather conditions are typically estimated from forecasts made many hours before a fire. Nevertheless, field-tested and experienced judgment in assessing the fire environment, coupled with a systematic method of calculating fire behavior yields surprisingly accurate results. To be used effectively, the basic assumptions and limitations of fire behavior modeling applications must be understood.

1. First, it must be realized that the fire model describes fire behavior only in the flaming front. The primary driving force in the predictive calculations is the dead fuels less than 0.25 inches in diameter. These are the fine fuels that carry fire. Fuels greater than 1 inch have little effect, while fuels greater than 3 inches have no effect on fire behavior.
2. Second, the model bases calculations and descriptions on a wildfire spreading through surface fuels that are within 6 feet of the ground and contiguous to the ground. Surface fuels are often classified as grass, brush, litter, or slash.
3. Third, the software assumes that weather and topography are uniform. However, because wildfires almost always burn under non-uniform conditions, creating their own weather, length of projection period and choice of fuel model must be carefully considered to obtain useful predictions.
4. Fourth, fire behavior computer modeling systems are not intended for determining sufficient fuel modification zone/defensible space widths. However, it does provide the average length of the flames, which is a key element for determining defensible space distances for minimizing structure ignition.

Although FlamMap has limitations, it can still provide valuable fire behavior predictions, which can be used as a tool in the decision-making process. In order to make reliable estimates of fire behavior, one must understand the relationship of fuels to the fire environment and be able to recognize the variations in these fuels. Natural fuels are made up of the various components of vegetation, both live and dead, that occur in a particular landscape. The type and quantity would depend upon soil, climate, geographic features, and fire history. The major fuel groups of grass, shrub, trees, and slash are defined by their constituent types and quantities of litter and duff layers, dead woody material, grasses and forbs, shrubs, regeneration, and trees. Fire behavior can be predicted largely by analyzing the characteristics of these fuels. Fire behavior is affected by seven principal fuel characteristics: fuel loading, size and shape, compactness, horizontal continuity, vertical arrangement, moisture content, and chemical properties.

The seven fuel characteristics help define the 13 standard fire behavior fuel models (Anderson 1982) and the more recent custom fuel models developed for Southern California (Weise and Regelbrugge 1997). According to the model classifications, fuel models used for fire behavior modeling (BehavePlus, FlamMap, FARSITE) have been classified into four groups, based upon fuel loading (tons/acre), fuel height, and surface-to-volume ratio. Observation of the fuels in the field (on site) determines which fuel models should be applied in modeling efforts. The following describes the distribution of fuel models among general vegetation types for the standard 13 fuel models and the custom Southern California fuel models:

- Grasses Fuel Models 1 through 3
- Brush Fuel Models 4 through 7, SCAL 14 through 18
- Timber Fuel Models 8 through 10
- Logging slash Fuel Models 11 through 13.

In addition, the aforementioned fuel characteristics were utilized in the recent development of 40 new fire behavior fuel models (Scott and Burgan 2005) developed for use in the BehavePlus, FlamMap, and FARSITE modeling systems. These new models attempt to improve the accuracy of the 13 standard fuel models outside of severe fire season conditions, and to allow for the simulation of fuel treatment prescriptions. The following describes the distribution of fuel models among general vegetation types for the 40 new fuel models:

- Non-burnable Models NB1, NB2, NB3, NB8, NB9
- Grass Models GR1 through GR9
- Grass shrub Models GS1 through GS4
- Shrub Models SH1 through SH9
- Timber understory Models TU1 through TU5
- Timber litter Models TL1 through TL9
- Slash blowdown Models SB1 through SB4.

FlamMap Analysis

FlamMap software was utilized to graphically depict potential fire behavior in the project site. Both summer weather conditions (on-shore flow) and more extreme fall weather conditions (off-shore, Santa Ana conditions) were modeled for the existing site condition and the proposed post-development site condition. As noted, FlamMap software requires a minimum of five separate input files that represent field conditions in the analysis area, including elevation, slope, aspect, fuel model, and canopy cover. Each of these files was created as a raster GIS file using ArcGIS 10.5 software, exported as an ASCII grid file, then utilized in creating a FARSITE Landscape file that served as the base for the FlamMap runs. The resolution of each grid file and associated ASCII file that was used in the models described herein is approximately one meter, based on available digital terrain data (described below). In addition to the Landscape file, wind and weather data are incorporated into the model inputs. The output fire behavior variables chosen for the modeling runs include flame length and crown fire activity.

The following provides descriptions of the input variables used in processing the FlamMap models. Data sources are cited and any assumptions made during the modeling process are described. Following the discussion of model inputs, a summary of model outputs is provided.

Model Inputs

Elevation

Elevation data were derived from a U.S. Geological Survey Digital Elevation Model (DEM) file, projected in the NAD 1983, California State Plane, Zone 6 coordinate system with 1-meter ground resolution (USGS 2016a, USGS 2016b, USGS 2016c, USGS 2016d). Elevation on the site ranges from 417 to 1,215 feet AMSL. These data were utilized to create an elevation grid file, using units of feet above sea level. The elevation data are a required input file for FlamMap runs and are necessary for adiabatic adjustment of temperature and humidity and for conversion of fire spread between horizontal and slope distances.

Slope

Using ArcGIS Spatial Analyst tools, a slope grid file was generated from the elevation grid file described above. Slope measurements utilized values in percent of inclination from horizontal. Slope values on the site range from 0 to 104%. The slope input file is necessary for computing slope effects on fire spread and solar radiance.

Slope is a measure of angle in degrees from horizontal and can be presented in units of degrees or percent. Slope is important in fire behavior analysis as it affects the exposure of fuel beds. Additionally, fire burning uphill spreads faster than those burning on flat terrain or downhill as uphill vegetation is pre-heated and dried in advance of the flaming front, resulting in faster ignition rates. For the BehavePlus analysis, slope values were measured from site topographic maps at the locations of each modeling scenario, and ranged in value between 16 and 50%.

Aspect

Using ArcGIS Spatial Analyst tools, an aspect grid file was generated from the elevation grid file described above. The aspect values utilized were azimuth degrees. Aspect values are important in determining the solar exposure of grid cells.

Fuel Model

Vegetation coverage data in the form of a GIS shapefile (Dudek 2017) were used in this analysis to create a fuel model file for existing conditions, which was derived from vegetative cover data mapped for the project site. Vegetation mapping data was utilized in field efforts to classify vegetation cover type with an appropriate fuel model. Fuel model assignments for existing vegetation are presented in Table 1.

- To analyze post-development fire behavior, a separate fuel model shapefile was created using the existing vegetation coverage and reclassifying fuels based on location within the proposed development. All fuels within areas proposed for conversion to non-fuel types (e.g., roads, driveways, structures) were reclassified to non-burnable models to represent developed, non-vegetated land uses.

Table 2 provides a description of 15 fuel models (including 3 non-burnable model) coded for the post-development site condition (including developed and non-developed areas) that were subsequently used in the on-site, post-development FlamMap analysis for this project.

Table 1. Fanita Ranch Fuel Model Characteristics – Existing Condition

Fuel Model	Description	Vegetation Type	Canopy Cover Value
0	Non-burnable	Urban/Developed, Non-Vegetated Channel, Open Water	0
GR1	Short, Sparse Dry Climate Grass	Cismontane Alkali Marsh, Disturbed Freshwater Marsh, Disturbed Herbaceous Wetlands, Disturbed Wetlands, Freshwater Marsh, Herbaceous Wetlands,	0

Table 1. Fanita Ranch Fuel Model Characteristics – Existing Condition

Fuel Model	Description	Vegetation Type	Canopy Cover Value
GR4	Moderate Load, Dry Climate Grass	Disturbed Habitat, Disturbed Valley Needlegrass Grassland, Non-native Grassland, Non-Native Grassland/Non-Native Vegetation, Non-Native Vegetation, Valley Needlegrass Grassland, Vernal Pool	0
GR9	Very High Load, Humid Climate Grass	Arundo-Dominated Riparian	0
GS2	Moderate Load, Dry Climate Grass-Shrub	Coast Live Oak Woodland	3
SH2	Moderate Load Dry Climate Shrub	Mule Fat Scrub,	0
SH4	Low Load, Humid Climate Timber-Shrub	Southern Arroyo Willow Riparian Forest, Southern Sycamore-Alder Riparian Woodland	3
SH5	High Load, Dry Climate Shrub	Diegan Coastal Sage Scrub, Diegan Coastal Sage Scrub/VGL, Disturbed Diegan Coastal Sage Scrub, Disturbed Diegan Coastal Sage Scrub/NNG, Disturbed Diegan Coastal Sage Scrub/VGL, Revegetated Diegan Coastal Sage Scrub	0
4	Chaparral	Diegan Coastal Sage Scrub: Baccharis-dominated, Granitic Southern Mixed Chaparral	0
TL8	Long-Needle Litter	Disturbed Southern Willow Scrub, Southern Willow Scrub	0

Table 2. Fanita Ranch Fuel Model Characteristics – Post-Development Condition

Fuel Model	Description	Land Cover Classification	Canopy Cover Value
0	Non-burnable	Developed Land, Non-Vegetated Channel or Floodway	0
GR1	Short, Sparse Dry Climate Grass	Fuel Modification Zone - Grass Cut/Brush Thinned, Interim Fuel Modification Zone, Disturbed Wetlands,	2, (Interim FMZ), 0 (All Others)
GR4	Moderate Load, Dry Climate Grass	Basins, Disturbed Habitat, Disturbed Valley Needlegrass Grassland (VGL), Non-Native Grassland (NNG), Non-Native Vegetation, Valley Needlegrass Grassland, Vernal Pool	0
GR9	Very High Load, Humid Climate Grass	Arundo-Dominated Riparian	0
GS2	Moderate Load, Dry Climate Grass-Shrub	Coast Live Oak Woodland	3
SH1	Low Load Dry Climate Shrub	50-Foot Roadway Fuel Modification Zone, Fuel Modification Zone 2	0

Table 2. Fanita Ranch Fuel Model Characteristics – Post-Development Condition

Fuel Model	Description	Land Cover Classification	Canopy Cover Value
SH2	Moderate Load Dry Climate Shrub	Fuel Modification Zone 3, Mule Fat Scrub	0
SH4	Low Load, Humid Climate Timber-Shrub	Riparian Open Space, Southern Arroyo Willow Riparian Forest, Southern Sycamore-Alder Riparian Woodland	3
SH5	High Load, Dry Climate Shrub	Native Revegetation, Diegan Coastal Sage Scrub, Diegan Coastal Sage Scrub/VGL, Disturbed Diegan Coastal Sage Scrub, Disturbed Diegan Coastal Sage Scrub/NNG, Disturbed Diegan Coastal Sage Scrub/VGL, Revegetated Diegan Coastal Sage Scrub	0
4	Chaparral	Diegan Coastal Sage Scrub: Baccharis-dominated, Granitic Southern Mixed Chaparral	0
TL1	Low Load Compact Conifer Litter	30-Foot Roadway Fuel Modification Zone, Fuel Modification Zones 1a and 1b	0
TL3	Moderate Load Conifer Litter	Orchard	3
TL8	Long-Needle Litter	Southern Willow Scrub	1
NB1	Urban/Developed	Park, Roads, Special Use Area, Village Development, Water Tank, Water Tank Access Road	0
NB3	Agriculture	10-Foot Fire Break, Farm	0

Canopy Cover

Canopy cover is a required raster file for FlamMap operations. It is necessary for computing shading and wind reduction factors for all fuel models. Canopy cover is measured as the horizontal fraction of the ground that is covered directly overhead by tree canopy. Crown closure refers to the ecological condition of relative tree crown density. Stands can be said to be "closed" to recruitment of canopy trees but still only have 40% or 50% canopy cover. Coverage units can be categories (0–4) or percentage values (0–100).

For the purposes of the FlamMap analysis, Dudek utilized vegetation type classifications to determine canopy cover assignmebnts. Canopy cover assignments are presented in Tables 1 and 2, by fuel model.

Weather

The County of San Diego, Department of Planning and Land Use (County of San Diego 2010) developed guidelines to identify acceptable fire behavior modeling weather inputs for fire conditions during summer months and Santa Ana fire weather patterns. The County analyzed and processed fire weather from Remote Automated Weather Stations (RAWS) between April 15 to December 31 in order to represent the general limits of the fire season. Data provided by the County's analysis included temperature, relative humidity, and sustained wind speed and is categorized by weather zone, including Maritime, Coastal, Transitional, Interior, and Desert (County of San Diego 2010).

As identified in the County's guidelines, Dudek utilized the Fine Dead Fuel Moisture (FDFM) tool within BehavePlus (v. 5.0.5) fire behavior modeling software package to determine potential fuel moisture values to be input into the FlamMap runs.. The temperature, relative humidity, and wind speed data for the Transitional climate zone were utilized for FlamMap runs based on the project's location. Reference fuel moistures were calculated in the FDFM tool and were based on site-specific topographic data inputs. Table 3 summarizes the FDFM in puts and the resulting fine dead fuel moisture values.

Table 3. BehavePlus Fine Dead Fuel Moisture Calculation

Variable	Summer Weather (50th Percentile)	Peak Weather (97th Percentile)
Dry Bulb Temperature	90 -109 deg. F	90 -109 deg. F
Relative Humidity	10 - 14 %	5 -9 %
Reference Fuel Moisture	2 %	1 %
Month	May June July	May June July
Time of Day	12:00 - 13:59	12:00 - 13:59
Elevation Difference	Level (within 1,000 ft.)	Level (within 1,000 ft.)
Slope	30% +	30% +
Aspect	West	West
Fuel Shading	Exposed (< and > 50% shading)	Exposed (< and > 50% shading)
Fuel Moisture Correction	1 %	1 %
Fine Dead Fuel Moisture	3 %	2 %

The weather variable presented in Table 4 are based on the calculated FDFM (Table 3) and the wind speed values identified in the County of San Diego standards.

Table 4. Weather Variables From County of San Diego Standards

Variable	Summer Weather (50th Percentile)	Peak Weather (97th Percentile)
1h Moisture	3%	2%
10h Moisture	6%	3%
100h Moisture	8%	5%
Live Herbaceous Moisture	60%	30%
Live Woody Moisture	90%	50%
20-foot Wind Speed	19 mph	41 mph

mph = miles per hour

In addition to the analyzing weather conditions using the County of San Diego's guidelines, an analysis of weather and fuel moisture variables using Remote Automated Weather Station (RAWS) data was conducted to determine potential worst-case weather conditions under Summer and Peak scenarios to be used in the fire behavior modeling efforts conducted in support of th Fanita Ranch Fire Protection Plan (FPP). Data was retrieved from the Camp Elliott RAWS, which is located approximately 7 miles to the west of the project site. The following summarizes the location and available data ranges for the Camp Elliott RAWS:

- Latitude: 32.85917
- Longitude: -117.1056
- Elevation: 539 feet
- Data years: 2007–2016.

The Camp Elliott RAWS data was processed with the FireFamily Plus v. 4.1.0 (FireFamily Plus 2016) software package to determine Summer (50th percentile) and Peak (97th percentile) weather conditions Table 5 summarizes the 50th and 97th percentile weather values derived from the Camp Elliott RAWS data analysis.

Table 5. Weather Variables From Camp Elliott RAWS Analysis

Variable	Summer Weather (50th Percentile)	Peak Weather (97th Percentile)
1h Moisture	8%	2%
10h Moisture	9%	3%
100h Moisture	16%	9%
Live Herbaceous Moisture	-*	-*
Live Woody Moisture	109%	59%
20-foot Wind Speed	4 mph	17 mph

Note:
* Live Herbaceous Moisture values for 50th and 97th percentile weather scenarios were less than 30% and are therefore considered completely cured and accounted for in the dead fuel component of the fuel models.

To conservatively analyze potential fire behavior for the site, the weather variables derived from the County of San Diego standards were used in the fire behavior modeling efforts conducted in support of this FPP as they presented lower fuel moisture values and higher wind speed values. These values are presented in Table 6.

Table 6. Weather Variables Used for Fire Behavior Modeling Efforts

Variable	Summer Weather Condition	Peak Weather Condition (offshore/Santa Ana Condition)
Fuel Models	variable	variable
1h Moisture	3%	2%
10h Moisture	6%	3%
100h Moisture	8%	5%
Live Herbaceous Moisture	60%	30%
Live Woody Moisture	90%	50%
20-foot Wind Speed (upslope/downslope)	19 mph	41 mph
Wind Direction	225°	45°

Finally, wind vectors were modeled within the FlamMap runs using the WindNinja tool embedded in the FlamMap software. WindNinja models the effect of topography on wind speed and direction and generates wind vector files for use in the modeling runs. The grid resolution for the WindNinja analysis was set at 55 meters.

FlamMap Model Outputs

The output grid files generated for each of the FlamMap runs represent flame length (feet) in existing and proposed site conditions during Summer and Peak weather scenarios. Flame length, the length of the flame of a spreading surface fire within the flaming front, is measured from midway in the active flaming combustion zone to the average tip of the flames (Andrews, Bevins, and Seli 2008). It is a somewhat subjective and non-scientific measure of fire behavior, but is extremely important to fireline personnel in evaluating fireline intensity and is

worth considering as an important fire variable (Rothermel 1991). The information in Table 7 presents an interpretation of flame length and its relationship to fireline intensity.

Table 7. Fire Suppression Interpretation

Flame Length (feet)	Fireline Intensity (Btu/ft/s)	Interpretations
Under 4	Under 100	Fires can generally be attacked at the head or flanks by persons using hand tools. Hand line should hold the fire.
4–8	100–500	Fires are too intense for direct attack on the head by persons using hand tools. Hand line cannot be relied on to hold the fire. Equipment such as dozers, pumpers, and retardant aircraft can be effective.
8–11	500–1,000	Fires may present serious control problems—torching out, crowning, and spotting. Control efforts at the fire head would probably be ineffective.
Over 11	Over 1,000	Crowning, spotting, and major fire runs are probable. Control efforts at head of fire are ineffective.

Source: BehavePlus 5.0.5 Online Documentation, March 16, 2010. BehavePlus Fire Modeling System: Version 4.0 User's Guide (Andrews, Bevins, and Seli 2008)

Maps depicting flame length values for the Summer weather scenario and the Peak weather scenario are included in Appendices B-1 and B-2, respectively. The fire behavior modeling results vary depending on topography and fuel type. As FlamMap utilizes site-specific digital terrain data (including slope, vegetation, aspect, and elevation data) slight variations in predicted flame length values can be observed based on fluctuations of these attributes across the landscape. As presented, wildfire behavior in each of the fuel types varies depending on weather conditions.

When classifying vegetation types into fuel models, efforts were made to most accurately represent the fuel type observed. Small fuels pockets within larger areas classified as another fuel type were not separated for this analysis. This approach is consistent with the industry standard for fire behavior modeling. Second, the fuel models selected to represent post-developed conditions were selected based on expected fire behavior in these fuel types, as no available fuel models exist for managed and/or irrigated landscape vegetation. As depicted Appendix B-3, the fire intensity and flame lengths in untreated, biological open space areas would remain the same. Conversely, the FMZ areas experience a significant reduction in flame length and intensity. The 66-foot flame lengths predicted during pre-treatment modeling are reduced to 13 feet at the outer edges of the FMZ and to one foot by the time the inner portions of the FMZ are reached. One foot tall flame lengths would not be expected to be capable of igniting the ignition resistant structures planned for the Proposed Project.

BehavePlus Analysis

In addition to the FlamMap analysis conducted for the project and described above, an analysis utilizing the BehavePlus software package was conducted to evaluate fire behavior variables and to provide verification of FlamMap outputs. The BehavePlus modeling outputs conducted for Fanita Ranch are consistent with coinciding FlamMap modeling outputs, as described below.

To objectively predict flame lengths, intensities, and spread rates, the BehavePlus 5.0.5 fire behavior modeling system (Andrews, Bevins, and Seli 2008) was used in four modeling scenarios and incorporated observed fuel types, measured slope gradients, and wind and fuel moisture values derived from County guidelines. Modeling scenario locations were selected to better understand different fire behavior that may be experienced on the site.

The majority of the property is vegetated with non-native grassland, chaparral, and coastal sage scrub. The sage scrub-chaparral habitat on and adjacent to the project site is in varying stages of fire recovery following the 2003 Cedar Fire. As such, fuel loads are expected to increase over time, with mature chaparral potentially reaching continuous cover of 10 to 15 foot tall shrubs on northern, mesic slopes and mature sage scrub reaching 2 to 3 feet tall shrubs on south or southwest facing, drier slopes. Based on the location of modeling scenarios, a fuel model 4 (dry climate shrub with high fuel load representing chamise-chaparral fuels) and a fuel model SH5 (dry climate shrub with moderate fuel load representing sage scrub fuels) were used for all BehavePlus fire behavior modeling runs.

Utilizing the dominant on-site vegetation, slope values, the Peak and Summer wind and fuel moisture values derived from County guidelines, and the FDFM analysis, fire behavior calculations were conducted for each fire scenario. A summary of the scenario inputs and the results of BehavePlus modeling efforts are summarized in Table 8. BehavePlus modeling results and the location of the BehavePlus modeling scenarios are presented in Figure 6 of the FPP.

Table 8. BehavePlus Fire Behavior Modeling Results

Fire Scenario	Flame Length (feet)	Spread Rate (mph)	Fireline Intensity (Btu/ft/s)	Spot Fire (miles)
Scenario 1: Chaparral on north-facing, 25%-35% upslope, Peak weather				
Chaparral (FM4)	66.1	10.1	51,337	2.8
Scenario 2: Mixed sage scrub & chaparral on north to south-facing, 35% downslope and upslope, Peak weather				
Chaparral (FM4)	63.9 – 66.1	9.4 – 10.1	47,742 - 51,337	2.7 – 2.8
Sage-chaparral transition (Sh5)	38.9 – 40.4	5.4 – 5.8	16,265 – 17,596	1.9 – 2.0
Scenario 3: Sage scrub on north/south facing, 25% downslope and upslope; Summer weather				
Sage scrub (Sh5)	19.4	1.4	3,573	0.7
Scenario 4: Mixed sage scrub & chaparral on west/east facing, 37% downslope; Summer weather				
Chaparral (FM4)	28.2	1.8	8,036	0.9
Sage scrub (Sh5)	18.0	1.2	3,037	0.7

Note:
1 Fire Behavior Analysts recorded peak wind gusts up to 50 mph during the Cedar Fire. Using Table 9 Peak Weather fine dead fuel moisture values and observed wildfire peak gusts for the Project Vicinity, the BehavePlus modeling efforts would result in flame lengths of 66.1 feet, spread rates of 10.1 mph, and fireline intensities reaching up to 51,337 Btu/ft/s. Viable airborne embers could be carried downwind for 2.8 miles and ignite receptive fuels.

As presented in Table 8, wildfire behavior in non-treated heavy chaparral, presented as a Fuel Model 4, represents the site's most extreme conditions, varying with different wind speeds. In this case, flame lengths can be expected to reach up to approximately 28.2 feet with 19 mph wind speeds (prevailing Summer condition) and 66.1 feet with 41 mph wind speeds (Peak condition). Spread rates range from 1.8 mph (Summer) to 10.1 mph (Peak). Spotting distances, where airborne embers can ignite new fires downwind of the initial fire, range from less than a mile (Summer weather condition) to 2.8 miles (Peak weather condition).

The results presented in Table 8 depict values based on inputs to the BehavePlus software and are not intended to capture changing fire behavior as it moves across a landscape. Changes in slope, weather, or pockets of different fuel types are not accounted for in this analysis. For planning purposes, the averaged worst-case fire behavior is the most useful information for conservative fuel modification design. Model results should be used as a basis for planning only, as actual fire behavior for a given location would be affected by many factors, including unique weather patterns, small-scale topographic variations, or changing vegetation patterns. As such, the proposed 150-foot FMZ width would be approximately twice as wide as the calculated flame lengths.

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USGS. 2016b. USGS NED one meter x49y365 CA SanDiegoQL2 2014 IMG 2016. http://ned.usgs.gov/.

USGS. 2016c. USGS NED one meter x50y364 CA SanDiegoQL2 2014 IMG 2016. http://ned.usgs.gov/.

USGS. 2016d. USGS NED one meter x50y365 CA SanDiegoQL2 2014 IMG 2016. http://ned.usgs.gov/.

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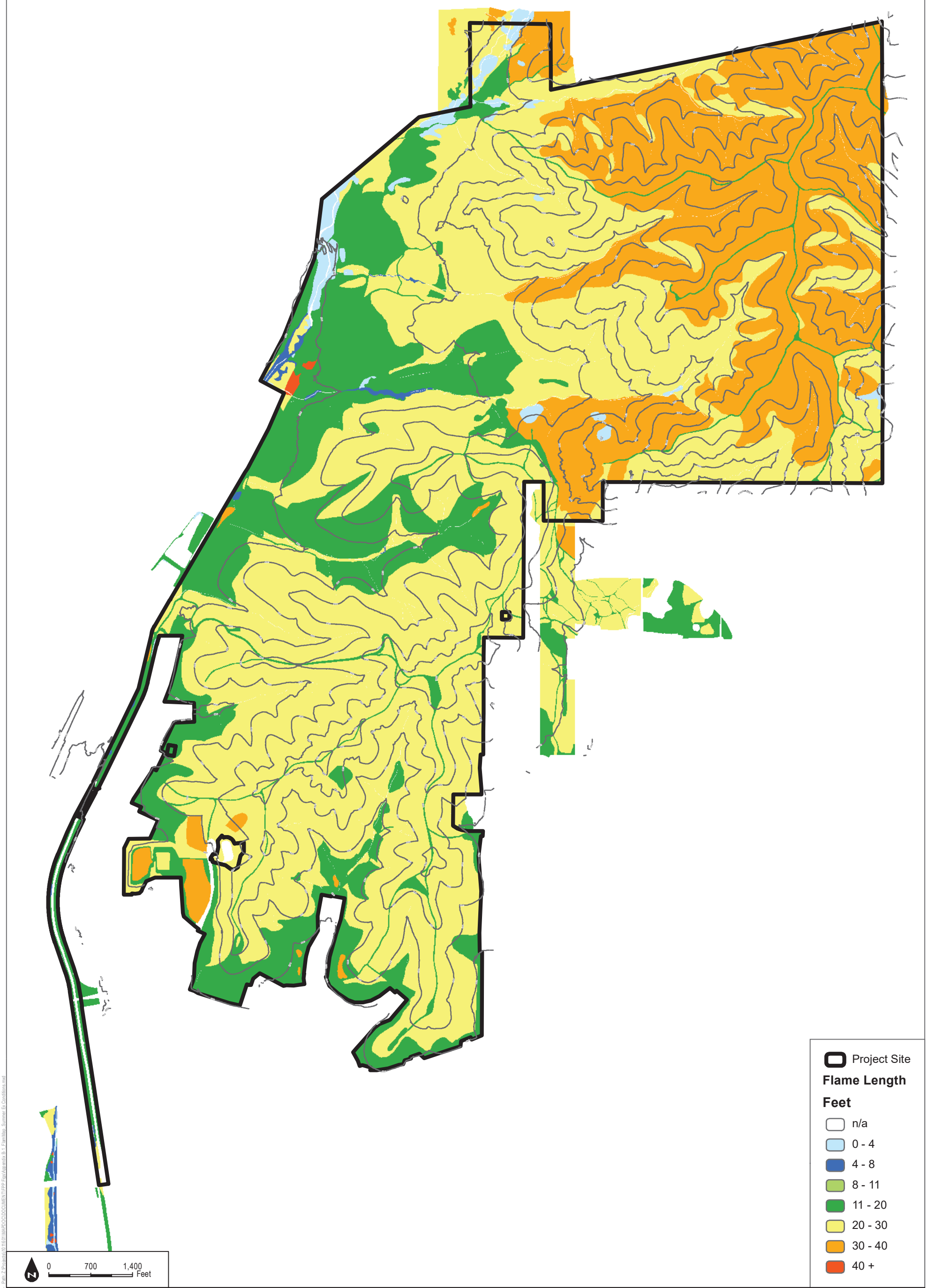
Appendix B-1

FlamMap Fire Behavior–
Flame Length, Summer Fire



APPENDIX B-1

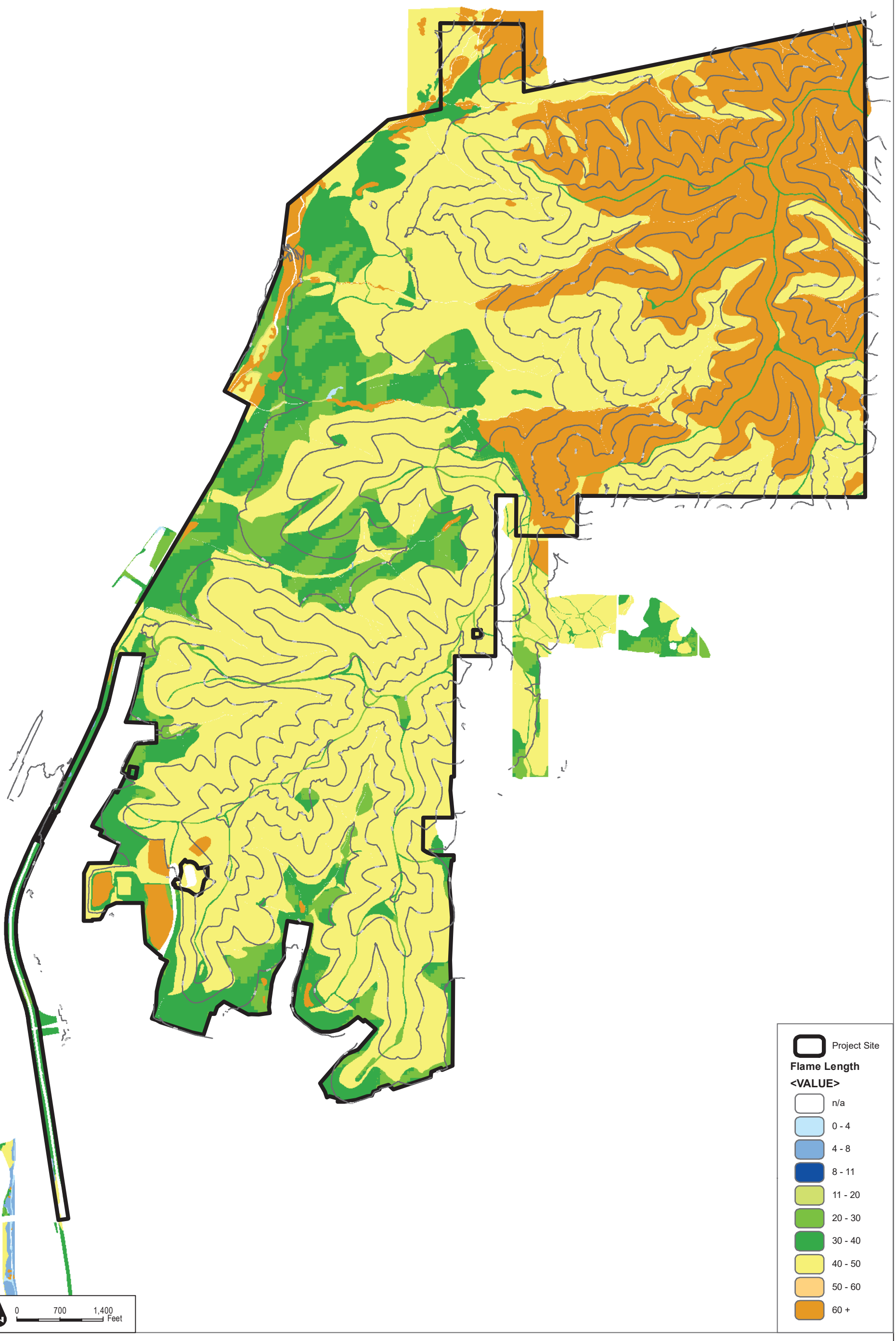
DUDEK

FlamMap Fire Behavior - Existing Conditions, Summer Fire Flame Lengths

FANITA RANCH FIRE PROTECTION PLAN

Appendix B-2

FlamMap Fire Behavior – Flame Length, Fall Fire



DUDEK

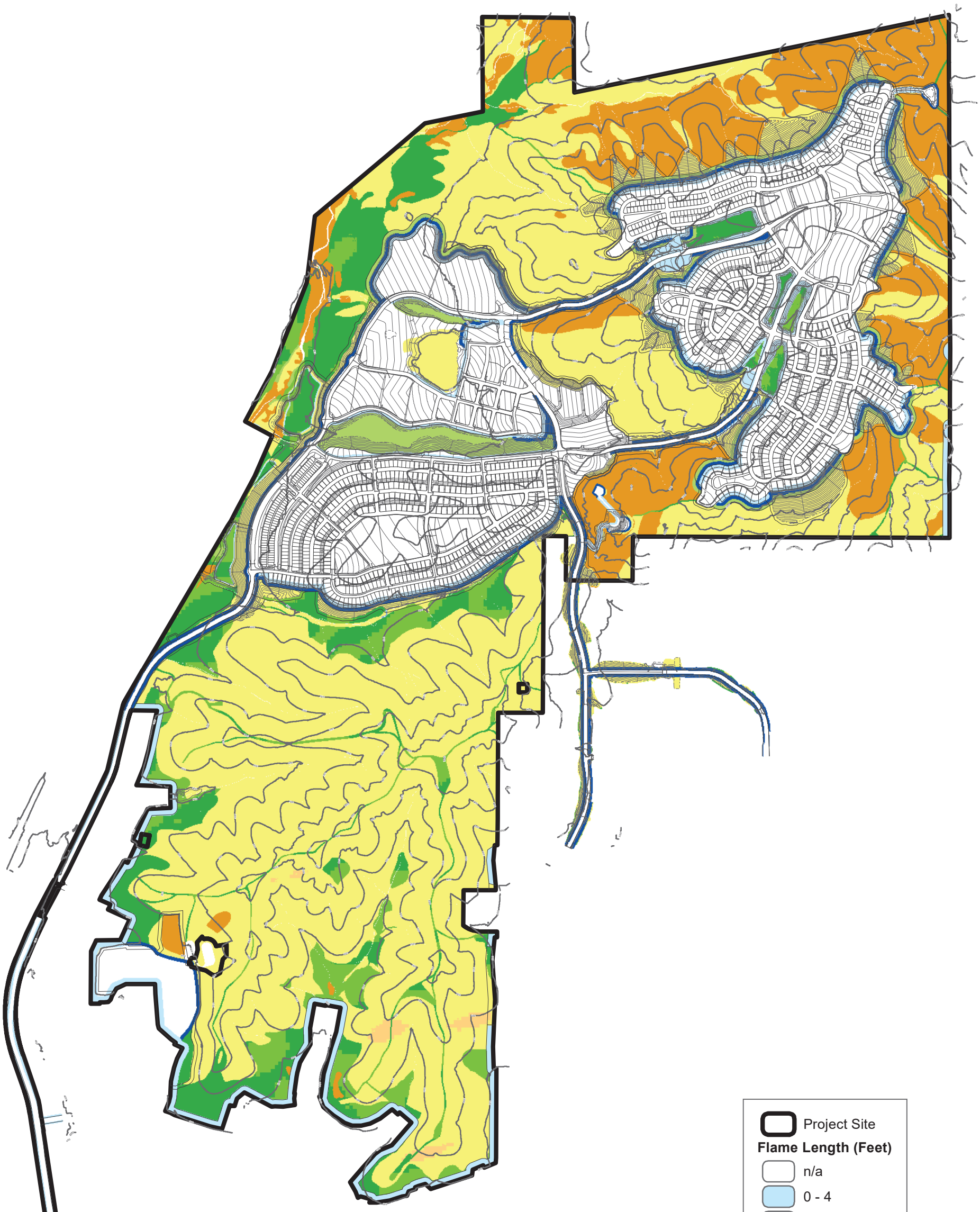
APPENDIX B-2

FlamMap Fire Behavior - Existing Conditions, Fall Fire Flame Lengths

FANITA RANCH FIRE PROTECTION PLAN

Appendix B-3

FlamMap Fire Behavior – Post-Development-Fall Fire



DUDEK

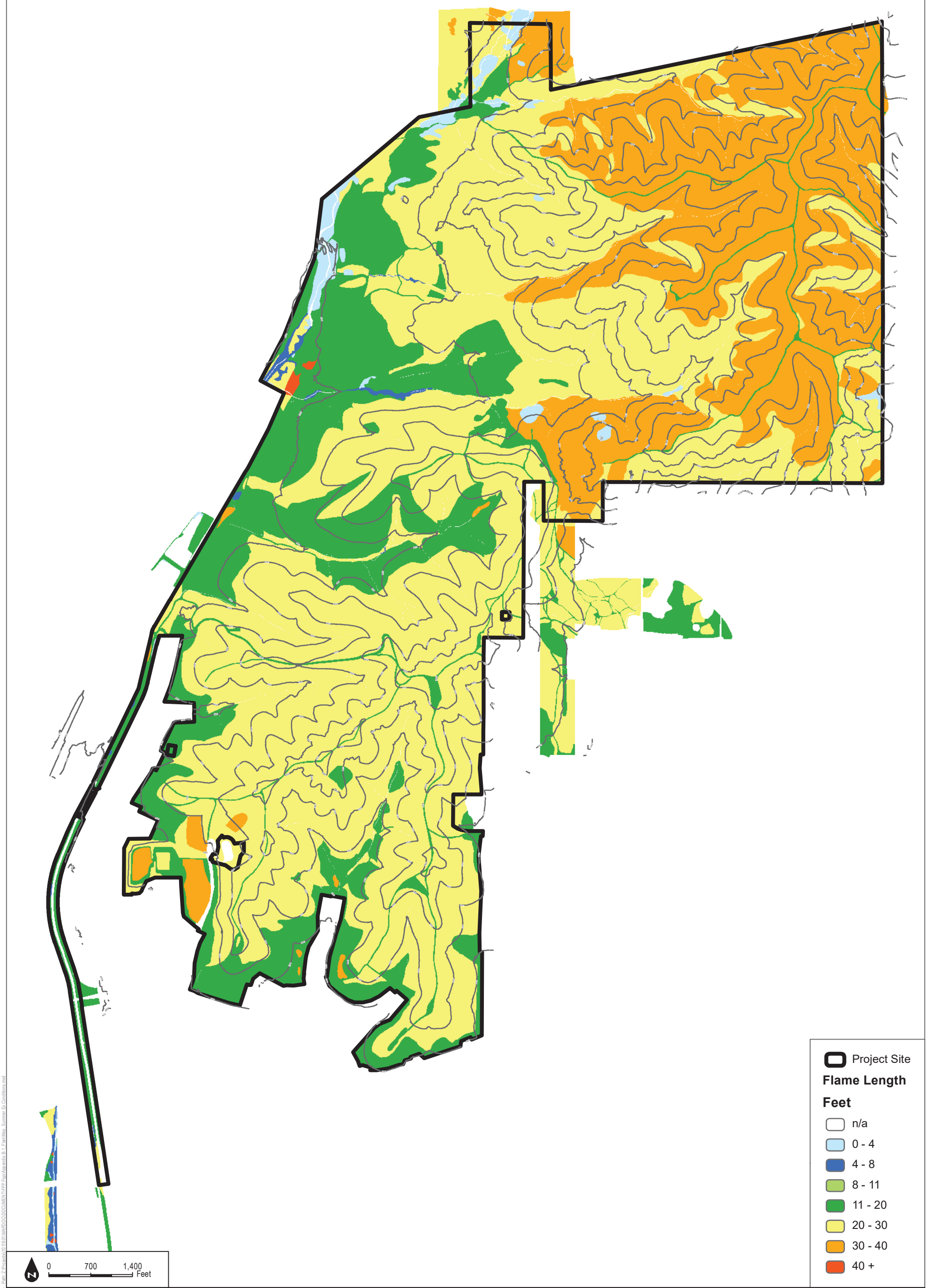
APPENDIX B-3

FlamMap Fire Behavior □ Post Development, Fall Fire Flame Lengths

FANITA RANCH FIRE PROTECTION PLAN

Appendix B-1

FlamMap Fire Behavior - Flame Length, Summer Fire



APPENDIX B-1

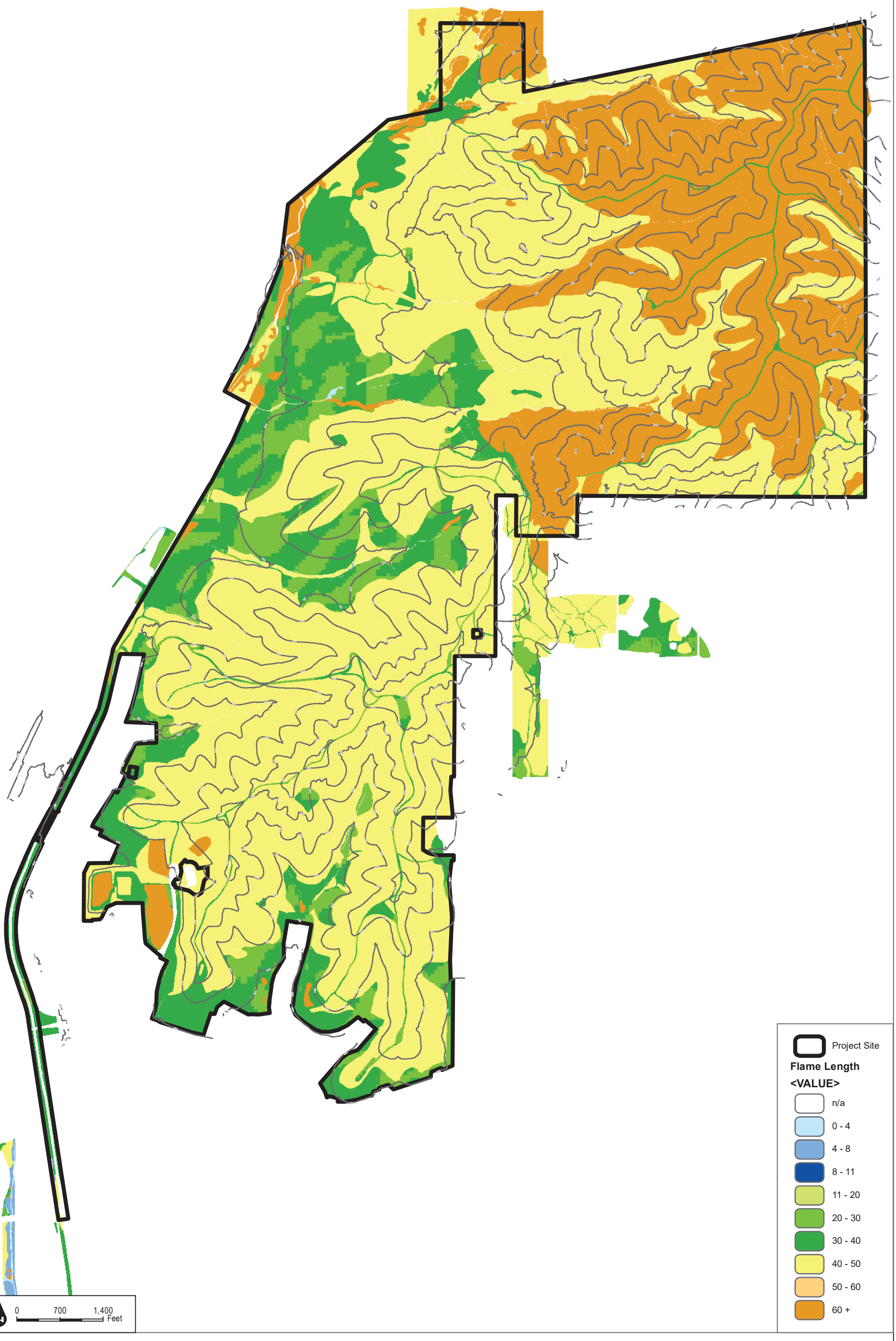
DUDEK

FlamMap Fire Behavior - Existing Conditions, Summer Fire Flame Lengths

FANITA RANCH FIRE PROTECTION PLAN

Appendix B-2

FlamMap Fire Behavior - Flame Length, Fall Fire



DUDEK

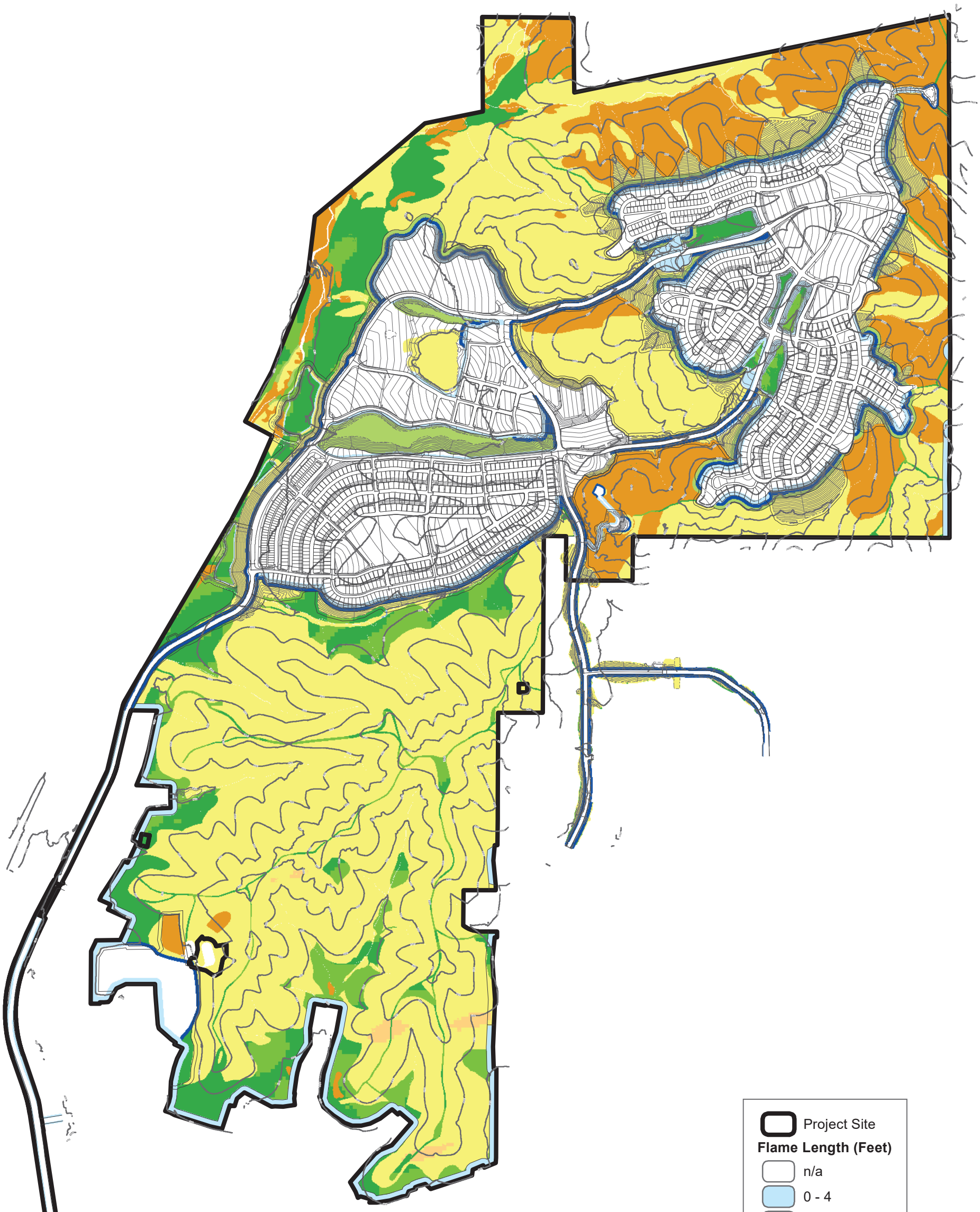
APPENDIX B-2

FlamMap Fire Behavior - Existing Conditions, Fall Fire Flame Lengths

FANITA RANCH FIRE PROTECTION PLAN

Appendix B-3

Post Development – Fall Fire



DUDEK

APPENDIX B-3

FlamMap Fire Behavior □ Post Development, Fall Fire Flame Lengths

FANITA RANCH FIRE PROTECTION PLAN

Appendix C

Fanita Ranch Water Service Availability Form

CITY OF SANTEE

PROJECT FACILITY AVAILABILITY FORM, Water

Please type or use pen

HOMEFED FANITA RANCHO 760-918-8200
Owner's Name Phone

1903 WRIGHT PLACE, SUITE 220
Owner's Mailing Address Street

CARLSBAD CA 92008
City State Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____
AMT $_____

W

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. ☒ Major Subdivision (TM) ☐ Specific Plan or Specific Plan Amendment
☐ Minor Subdivision (TPM) ☐ Certificate of Compliance:_____
☐ Boundary Adjustment
☐ Rezone (Reclassification) from_____ to _____ zone.
☒ Major Use Permit (MUP), purpose: CUP
☐ Time Extension?Case No._____
☐ Expired Map?Case No._____
☒ Other DEVELOPMENT REVIEW PERMIT

B. ☒ Residential . . . . . Total number of dwelling units 2949 ±
☒ Commercial. . . . . Gross floor area 80,000 SF ±
☐ Industrial . . . . . Gross floor area_____
☒ Other . . . . . Gross floor area FARM 25 AC.

C. ☒ Total Project acreage 2638 Total number of lots 1467 ±

D. Is the project proposing the use of groundwater? ☐ Yes ☒ No
Is the project proposing the use of reclaimed water? ☒ Yes ☐ No

Assessor's Parcel Number(s)
(Add extra if necessary)

SEE ATTACHED APN'S	

Thomas Bros. Page 1211, 1231 Grid B5:E7 A1:D3

N/A
Project address Street

FANITA RANCH 92071
Community Planning Area/Subregion Zip

Owner/Applicant agrees to pay all necessary construction costs, dedicate all district required easements to extend service to the project and COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: Meg W. O'Connell Date: 4/21/22

Address: 1903 WRIGHT PL. #220 CARLSBAD, CA. 92008 Phone: 760-918-8200

(On completion of above, present to the district that provides water protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

***LETTER EXPIRES 05/02/2023

District Name: **PADRE DAM MUNICIPAL WATER DISTRICT** Service area WSA

A. ☒ Project is in the district.
☐ Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the district and is not within its Sphere of Influence boundary.
☐ The project is not located entirely within the district and a potential boundary issue exists with the _____ District.

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached_____. (Number of sheets)
☐ Project will not be served for the following reason(s):_____

C. ☒ District conditions are atttached. Number of sheets attached: 2
☐ District has specific water reclamation conditions which are attached. Number of sheets attached:_____
☐ District will submit conditions at a later date.
☐ Additional District conditions: _____

D. ☐ How far will the pipeline(s) have to be extended to serve the project?_____

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized signature: Kyle Swanson Print name KYLE SWANSON

Print title ASSISTANT GENERAL MANAGER Phone 619-258-4673 Date 05/03/2022

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT
On completion of Section 2 by the district, applicant is to submit this form with application to:
Department of Development Services, 10601 Magnolia Avenue, Santee, CA 92071

Homefed Franklin, LLC Assessor's Parcels
Apn 380-040-44 Apn 380-040-43
Apn 376-020-03
Apn 374-030-02
Apn 374-050-02
Apn 374-060-01
Apn 376-010-06
Apn 376-030-01
Apn 378-020-54
Apn 378-030-08
Apn 378-391-59
Apn 378-392-61
Apn 378-392-62
Apn 378-382-58
Apn 378-381-49
Apn 380-031-18
Apn 378-020-46
Apn 378-020-50
~~Apn 380-730-22~~
~~Apn 380-730-23~~
~~Apn 380-O31-O8~~

JWO Land Company LLC, a Delaware Limited Liability Company Assessor's Parcels
Apn 378-210-01
Apn 378-210-10
Apn 378-210-11
Apn 378-220-01

JWO Land LLC Assessor's Parcels
Apn 378-210-04

Rampage Vineyard, LLC, A Delaware Limited Liability Company Assessor's Parcels
Apn 378-210-03

PADRE DAM
Municipal Water District

9300 Fanita Parkway, Santee
619-258-4635

WATER AVAILABILITY ATTACHMENT
CONDITIONS OF APPROVAL

PROJECT NAME Fanita Ranch FOR 1388 SFR, 1561 HDR MAP NUMBER _____

A.P.N.(s)	380-040-44	380-040-43	376-020-03	374-030-02	374-050-02	374-060-01
	376-010-06	376-030-01	378-020-54	378-030-08	378-391-59	378-392-61
	378-392-62	378-382-58	378-381-49	380-031-18	378-020-46	378-020-50
	378-210-01	378-210-10	378-210-11	378-220-01	378-210-04	378-210-03

FACILITIES

Domestic/Irrigation service and fire hydrant requirements may determine if the proposed project will require a water main extension. If a water main extension is necessary, the following will be requirements to proceed with the project. The Developer / Property Owner shall:

[X] Prepare plans for a potable water system according to Padre Dam's requirements.

[X] Provide the agreement and securities required by the County of San Diego, City of Santee, and/or Padre Dam to install the public water system required for the project.

[X] Install a potable water system per the latest Padre Dam Rules and Regulations and Standard Specifications.

[X] Install a recycled water system, for the purposes of irrigation, per the latest Padre Dam Rules and Regulations and Standard Specifications.

[X] Pay for all installation and capacity fees for each meter connection, each lot, each proposed irrigation area, agricultural areas, or each building. (As determined by project need prior to District providing service or an unconditional commitment letter)

[X] Install private/public potable water, recycled water and sewer lines with the required separation as determined by the Health Department and Padre Dam.

[X] Install/construct per Padre Dam Standards:

- All facilities detailed in the 2020 Water Study

Padre Dam does not require that all lots be connected to the public water system. Alternate sources of water are subject to the requirements of the County of San Diego or the City of Santee.

EASEMENTS

[X] Developer shall dedicate to Padre Dam all necessary easements and rights-of-way for that portion of the water system that is to be public.

FACILITY COMMITMENT

[X] Adequate water facility commitment shall be committed prior to final project approval/map recordation and shall be available concurrent with the project need. The Unconditional Facility Commitment Form will be signed upon payment of capacity and meter fees.

SPECIAL CONDITIONS

[X] Water main extensions will be required along Fanita Parkway, Cuyamaca Street, and Magnolia Avenue to connect to the Development.

[X] Hydraulic simulated analysis study for potable water was completed in 2020. A Water Supply Assessment was

also provided in compliance with SB 610.

[X] Recycled water may be used for construction purposes only, including grading and dust suppression.

[X] An authorized representative must attend Recycled Water Supervisor Training and meet with a Padre Dam Recycled Water Technician prior to start of work.

[X] Developer shall abide by the rules governing the use of recycled water established by the California Division of Drinking Water in the Code of Regulations, Title 22 and 17.

[X] Construction equipment must meet Padre Dam requirements for carrying recycled water.

[X] All water trucks using recycled water shall have an approved air gap.

[X] When using recycled water for construction sites the following safety precautions shall be observed:

- Do not drink recycled water.
- Wash your hands before eating or drinking.
- Do not spray anyone with recycled water.
- Do not wash or rinse down equipment using recycled water.

Prepared by: Rebecca Abbott Approved by: Kyle Swanson Date: May 3, 2022
E-33 R- 8-/08

CITY OF SANTEE

PROJECT FACILITY AVAILABILITY FORM, Sewer

Please type or use pen

HOMEFED FANITA RANCH 760.918-8200
Owner's Name Phone

1903 WRIGHT PLACE, SUITE 220
Owner's Mailing Address Street

CARLSBAD CA 92008
City State Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____

S

AMT $_____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. ☒ Major Subdivision (TM) ☐ Specific Plan or Specific Plan Amendment
☐ Minor Subdivision (TPM) ☐ Certificate of Compliance:_____
☐ Boundary Adjustment
☐ Rezone (Reclassification) from_____ to _____ zone.
☒ Major Use Permit (MUP), purpose: CUP
☐ Time Extension?Case No._____
☐ Expired Map?Case No._____
☒ Other DEVELOPMENT REVIEW PERMIT

B. ☒ Residential . . . . . Total number of dwelling units 2949 ±
☒ Commercial. . . . . Gross floor area 80,000 SF ±
☐ Industrial . . . . . Gross floor area_____
☒ Other . . . . . Gross floor area FARM 25 AC ±

C. ☒ Total Project acreage 2638 Total number of lots 1467±

D. Is the project proposing its own wastewater treatment plant? ☐ Yes ☒ No
Is the project proposing the use of reclaimed water? ☒ Yes ☐ No

Assessor's Parcel Number(s)
(Add extra if necessary)

SEE ATTACHED APN'S	

Thomas Bros. Page 1211, 1231 Grid B5:E7
A1:D3

N/A
Project address Street

FANITA RANCH 92071
Community Planning Area/Subregion Zip

Owner/Applicant agrees to pay all necessary construction costs, dedicate all district required easements to extend service to the project.
OWNER/APPLICANT MUST COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: Mike W. O'Connor Date: 4/21/22

Address: 1903 WRIGHT PL, #220, CARLSBAD CA. 92008 Phone: 760-918-8200

(On completion of above, present to the district that provides water protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

***LETTER EXPIRES 05/02/2023

District Name: **PADRE DAM MUNICIPAL WATER DISTRICT** Service area WSA

A. ☒ Project is in the district.
☐ Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the district and is not within its Sphere of Influence boundary.
☐ The project is not located entirely within the district and a potential boundary issue exists with the _____ District.

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached_____. (Number of sheets)
☐ Project will not be served for the following reason(s):_____

C. ☒ District conditions are atttached. Number of sheets attached: 2
☐ District has specific water reclamation conditions which are attached. Number of sheets attached:_____
☐ District will submit conditions at a later date.
☐ Additional District conditions:_____

D. ☐ How far will the pipeline(s) have to be extended to serve the project?_____

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized signature: Kyle Swanson Print name KYLE SWANSON

Print title ASSISTANT GENERAL MANAGER Phone 619-258-4673 Date 05/03/2022

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT
On completion of Section 2 by the district, applicant is to submit this form with application to:
Department of Development Services, 10601 Magnolia Avenue, Santee, CA 92071

Homefed Franklin, LLC Assessor's Parcels
Apn 380-040-44 Apn 380-040-43
Apn 376-020-03
Apn 374-030-02
Apn 374-050-02
Apn 374-060-01
Apn 376-010-06
Apn 376-030-01
Apn 378-020-54
Apn 378-030-08
Apn 378-391-59
Apn 378-392-61
Apn 378-392-62
Apn 378-382-58
Apn 378-381-49
Apn 380-031-18
Apn 378-020-46
Apn 378-020-50
~~Apn 380-730-22~~
~~Apn 380-730-23~~
~~Apn 380-O31-O8~~

JWO Land Company LLC, a Delaware Limited Liability Company Assessor's Parcels
Apn 378-210-01
Apn 378-210-10
Apn 378-210-11
Apn 378-220-01

JWO Land LLC Assessor's Parcels
Apn 378-210-04

Rampage Vineyard, LLC, A Delaware Limited Liability Company Assessor's Parcels
Apn 378-210-03

PADRE DAM
Municipal Water District

9300 Fanita Parkway, Santee
619-258-4635

SEWER AVAILABILITY ATTACHMENT
CONDITIONS OF APPROVAL

PROJECT NAME Fanita Ranch FOR 1388 SFR, 1561 HDR MAP NUMBER _____

A.P.N.(s)	380-040-44	380-040-43	376-020-03	374-030-02	374-050-02	374-060-01
	376-010-06	376-030-01	378-020-54	378-030-08	378-391-59	378-392-61
	378-392-62	378-382-58	378-381-49	380-031-18	378-020-46	378-020-50
	378-210-01	378-210-10	378-210-11	378-220-01	378-210-04	378-210-03

FACILITIES

The Developer / Property Owner shall:

[X] Prepare plans for a public sanitary sewer system according to Padre Dam's requirements.

[X] Provide the agreement and securities required by the County of San Diego, City of Santee, and/or Padre Dam to install the public sewer system required for the project.

[X] Install a sanitary sewer system per the latest Padre Dam Rules and Regulations and Standard Specifications.

[X] Pay for all installation and capacity fees for each lateral connection, each lot, each proposed irrigation area, agricultural areas, or each building. (As determined by project need prior to District providing service or an unconditional commitment letter)

[X] Install/construct public potable water, recycled water and sewer facilities with the required separation as determined by the State and Local Health Departments and Padre Dam.

[X] Install/construct per Padre Dam Standards:

- All facilities detailed in the 2020 Sewer Study and Draft Vesting Tentative Map dated April 22, 2022

Padre Dam does not require that all lots be connected to the public sewer system. Alternate sources of sewer disposal are subject to the requirements of the County of San Diego or the City of Santee.

EASEMENTS

[X] Developer shall dedicate to Padre Dam, and/or the East County Advanced Water Purification (AWP) Joint Powers Authority (JPA), all necessary easements and rights-of-way for that portion of the sewer system that is to be public.

FACILITY COMMITMENT

[X] Adequate sewer facility commitment shall be committed prior to final project approval/map recordation and shall be available concurrent with the project need. The Unconditional Facility Commitment Form will be signed upon payment of capacity fees.

SPECIAL CONDITIONS

[X] The public sanitary sewer system will confluence at a proposed sewer pump station depicted as PS-1 on the Draft Vesting Tentative Map dated April 22, 2022. The Developer shall prepare plans for the public sewer lift station and discharge force main according to Padre Dam's requirements. The Developer shall coordinate the design with Padre Dam and the East County AWP JPA such that the discharge force main connects to the East County AWP new Water Recycling Facility (WRF) headworks.

[X] Sewer system analysis has been provided for the collection system proposed as a gravity system connecting to the existing Ray Stoyer WRF headworks in the 2020 Sewer Study. The discharge location has since been revised

to a proposed Padre Dam sewer pump station that will connect to the future East County AWP WRF headworks.

[X] Developer shall prepare a Technical Memorandum analyzing the hydraulics of the proposed sewer pump station and discharge force main for Padre Dam approval prior to acceptance.

[X] Developer shall prepare a Sewer Pump Station Basis of Design Report covering the lift station, discharge force main, and East County AWP headworks, inclusive of necessary flow meters, connections to Padre Dam SCADA system, and other related appurtenances, for Padre Dam approval prior to acceptance.

[X] The Technical Memo and Basis of Design Report shall include necessary design details to connect to the existing Padre Dam gravity sludge main under an emergency/out of service scenario.

[X] The commercial areas of the Development may be subject to the requirements of the City of San Diego's Industrial Waste Control Program (IWCP).

[X] Runoff/washdown from the Farm and Agricultural areas shall not be discharged to the public sewer collection system.

Prepared by: Rebecca Abbott Approved by: Kyle Swanson Date: May 3, 2022
E-32 R-8/08

Appendix D-1

Fuel Modification Zone Exhibit

APPENDIX D-3

APPENDIX D-2

APPENDIX D-4

MAGNOLIA AVE

CUYAMACA ST

APPENDIX D-4

CUYAMACA ST

LAKE CANYON RD

HAUBERNS BLVD

CARLTON HILLS BLVD

MAST BLVD

SANDAG & SanGIS

SOURCE: IMAGERY-SANGIS IMAGERY 2017
DEVELOPMENT-HUNSAKER 2020

700 350 0 700 Feet

DUDEK

Fuel Modification Zones

- FMZ 1a (Irrigated)
- FMZ 1b (Irrigated)
- FMZ 1c (Irrigated)
- FMZ 2 (Retain 30% of shrubs/groundcovers)
- Roadway Zone (30 Ft min.)
- Roadway Zone (50-Ft min.)
- Fanita Pkwy FMZ (varies 2'-60' wide)
- Water Tank Roadway Zone (3' Wide)
- FMZ 10-Ft Fire Break (Perimeter of Orchards and Farmlands)
- FMZ Ranch HOA Maintained
- FMZ Esmt Adjacent Owners (Grass Cut 6"/Brush Thinned)
- FMZ Maintenance Access Points
- Project Site Boundary

Land Uses

- Basin
- Park
- Passive
- Agriculture
- Village Development
- Maintained Riparian Habitat Restoration Area
- Farm
- Water Tank
- Not A Part
- Fire Dept. Access Point
- Trail and Fire Dept. Access Point
- Trail Staging Area

Earth/DG Trails (For Illustrative Purposes only)

- Perimeter Trail
- Village Nature Trail
- Nature Trail
- Primitive Trail
- Existing SDG&E Service Road
- Potential Trail Access

APPENDIX D-1

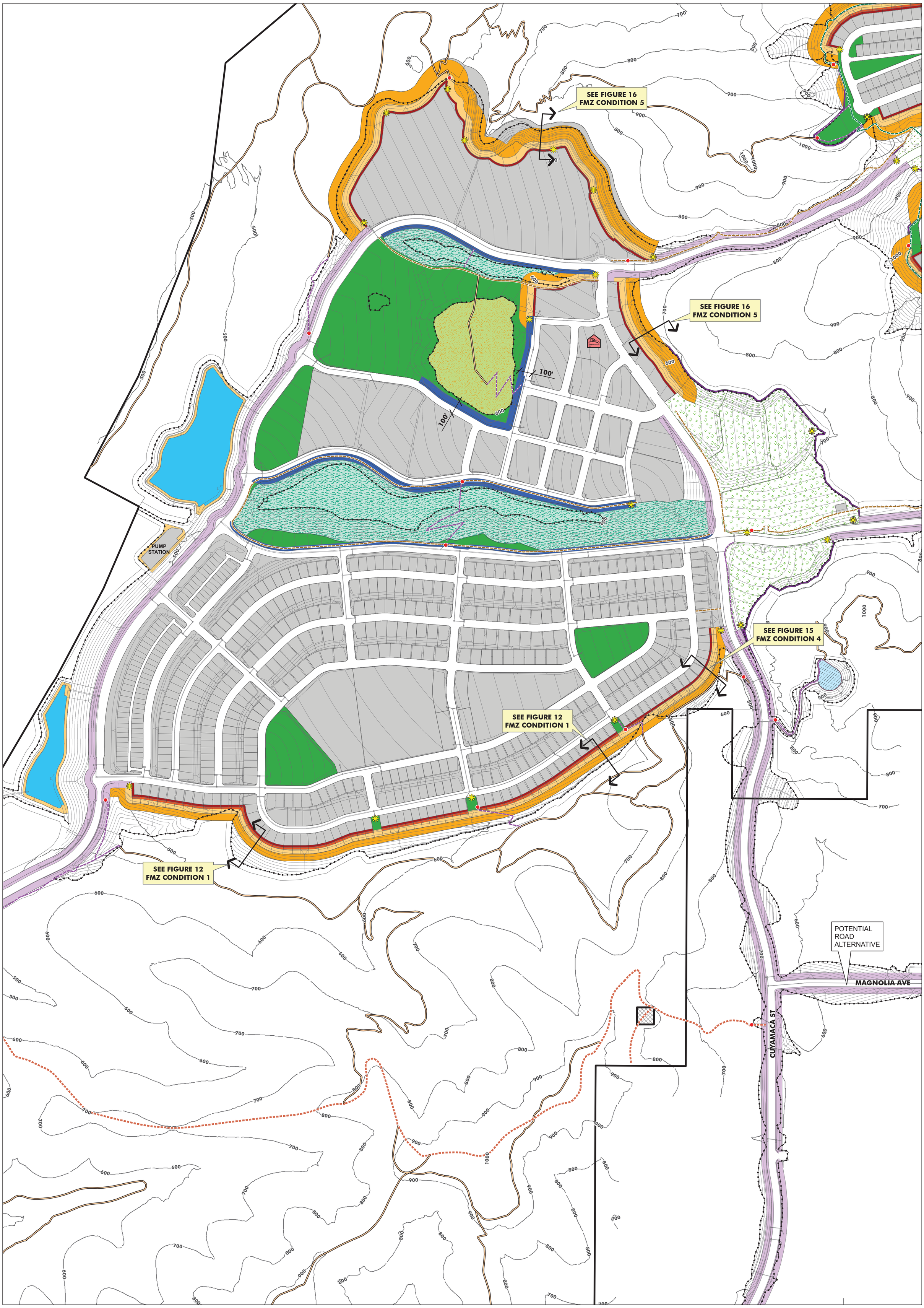
Fuel Modification Plan

FANITA RANCH FIRE PROTECTION PLAN

Date: 3/6/2020

Appendix D-2

Fuel Modification Zone Exhibit



SOURCE: HUNSAKER 2020

300 150 0 300 Feet

DUDEK

Fuel Modification Zones

- FMZ 1a (Irrigated)
- FMZ 1b (Irrigated)
- FMZ 1c (Irrigated)
- FMZ 2 (Retain 30% of shrubs/groundcovers)
- Roadway Zone (30 Ft min.)
- Roadway Zone (50-Ft min.)
- Fanita Pkwy FMZ (varies 2'-60' wide)
- Water Tank Roadway Zone (3' Wide)
- FMZ 10-Ft Fire Break (Perimeter of Orchards and Farmlands)
- FMZ Ranch HOA Maintained
- FMZ Esmt Adjacent Owners (Grass Cut 6"/Brush Thinned)

Land Uses

- Basin
- Park
- Passive
- Agriculture
- Village Development
- Maintained Riparian Habitat Restoration Area
- Farm
- Water Tank
- Not A Part
- Project Site Boundary
- FMZ Maintenance Access Points
- Proposed Onsite Fire Station
- Fire Dept. Access Point
- Trail and Fire Dept. Access Point
- Potential Trail Access

Earth/DG Trails (For Illustrative Purposes only)

- Perimeter Trail
- Village Nature Trail
- Nature Trail
- Primitive Trail
- Existing SDG&E Service Road

APPENDIX D-2

Fuel Modification Plan

FANITA RANCH FIRE PROTECTION PLAN

Date: 3/6/2020

Appendix D-3

Fuel Modification Zone Exhibit

SEE FIGURE 13
FMZ CONDITION 2

SEE FIGURE 14
FMZ CONDITION 3

SEE FIGURE 16
FMZ CONDITION 5

SEE FIGURE 15
FMZ CONDITION 4

MAGNOLIA AVE

CUYAMACA ST

SOURCE: HUNSAKER 2020

300 150 0 300 Feet

DUDEK

Fuel Modification Zones

- FMZ 1a (Irrigated)
- FMZ 1b (Irrigated)
- FMZ 1c (Irrigated)
- FMZ 2 (Retain 30% of shrubs/groundcovers)
- Roadway Zone (30 Ft min.)
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- Water Tank Roadway Zone (3' Wide)
- FMZ 10-Ft Fire Break (Perimeter of Orchards and Farmlands)
- FMZ Ranch HOA Maintained
- FMZ Esmt Adjacent Owners (Grass Cut 6"/Brush Thinned)

Land Uses

- Basin
- Park
- Passive
- Agriculture
- Village Development
- Maintained Riparian Habitat Restoration Area
- Farm
- Water Tank
- Not A Part
- Project Site Boundary

- FMZ Maintenance Access Points
- Fire Dept. Access Point
- Trail and Fire Dept. Access Point
- Potential Trail Access

Earth/DG Trails (For Illustrative Purposes only)

- Perimeter Trail
- Village Nature Trail
- Nature Trail
- Primitive Trail
- Existing SDG&E Service Road

APPENDIX D-3

Fuel Modification Plan

FANITA RANCH FIRE PROTECTION PLAN

Date: 3/6/2020

Appendix D-4

Fuel Modification Zone Exhibit

STRATHMORE DR
BIRCHCREST BLVD
CADWELL RD
SPECIAL USE AREA
SETTLE RD
SWANTON DR
HALBERNS BLVD
CARLTON HILLS BLVD
GANDY AV
LAKE CANYON RD
CUYAMACA ST
CAMBURY DR
MAST BLVD
FANITA PKWY
PRINCESS JOANN RD
MAGNOLIA AVE

SOURCE: BING MAPPING SERVICE 2019

350 175 0 350 Feet

DUDEK

Fuel Modification Zones

- FMZ 1a (Irrigated)
- FMZ 1b (Irrigated)
- FMZ 1c (Irrigated)
- FMZ 2 (Retain 30% of shrubs/groundcovers)
- Roadway Zone (30 Ft min.)
- Roadway Zone (50-Ft min.)
- Fanita Pkwy FMZ (varies 2'-60' wide)
- Water Tank Roadway Zone (3' Wide)
- FMZ 10-Ft Fire Break (Perimeter of Orchards and Farmlands)
- FMZ Ranch HOA Maintained
- FMZ Esmt Adjacent Owners (Grass Cut 6"/Brush Thinned)

Land Uses

- Basin
- Park
- Passive
- Agriculture
- Village Development
- Maintained Riparian Habitat Restoration Area
- Farm
- Water Tank
- Not A Part
- Project Site Boundary
- Trail Staging Area
- FMZ Maintenance Access Points
- Fire Dept. Access Point
- Trail and Fire Dept. Access Point
- Potential Trail Access

Earth/DG Trails (For Illustrative Purposes only)

- Perimeter Trail
- Village Nature Trail
- Nature Trail
- Primitive Trail
- Existing SDG&E Service Road

0 200 400 Feet

SANDAG & SanGIS

APPENDIX D-4

Fuel Modification Plan

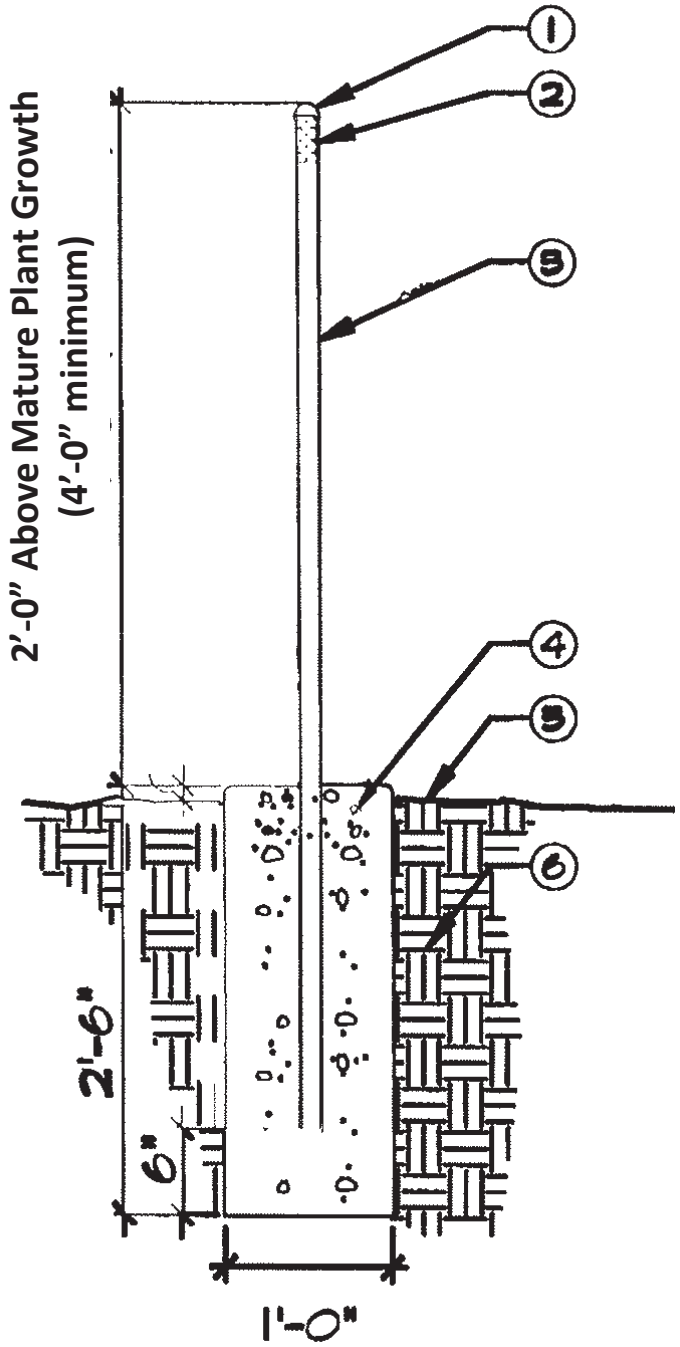
FANITA RANCH FIRE PROTECTION PLAN

Date: 3/6/2020

Appendix E

Fuel Modification Zone Marker Details

Fuel Modification Zone Marker Detail



1) Post Cap
2) 2" X 8" Zone Indicator
3) 1 ½" Diameter Galvanized Post
4) Concrete Footing
5) Finish Grade
6) Compacted Subgrade

Example of Zone Marker installed in fuel modification zone.

Appendix F

Undesirable Plant List

Botanical Name	Common Name	Comment*
Trees		
Abies species	Fir	F
Acacia species (numerous)	Acacia	F, I
Agonis juniperina	Juniper Myrtle	F
Araucaria species *(A. heterophylla, A. araucana, A. bidwillii)*	Araucaria (Norfolk Island Pine, Monkey Puzzle Tree, Bunya Bunya)	F
Callistemon species *(C. citrinus, C. rosea, C. viminalis)*	Bottlebrush (Lemon, Rose, Weeping)	F
Calocedrus decurrens	Incense Cedar	F
Casuarina cunninghamiana	River She-Oak	F
Cedrus species *(C. atlantica, C. deodara)*	Cedar (Atlas, Deodar)	F
Chamaecyparis species (numerous)	False Cypress	F
Cryptomeria japonica	Japanese Cryptomeria	F
Cupressocyparis leylandii	Leyland Cypress	F
Cupressus species *(C. fobesii, C. glabra, C. sempervirens,)*	Cypress (Tecate, Arizona, Italian, others)	F
Eucalyptus species (numerous)	Eucalyptus	F, I
Juniperus species (numerous)	Juniper	F
Larix species *(L. decidua, L. occidentalis, L. kaempferi)*	Larch (European, Japanese, Western)	F
Leptospermum species *(L. laevigatum, L. petersonii)*	Tea Tree (Australian, Tea)	F
Lithocarpus densiflorus	Tan Oak	F
Melaleuca species *(M. linariifolia, M. nesophila, M. quinquenervia)*	Melaleuca (Flaxleaf, Pink, Cajeput Tree)	F, I, #7
Olea europea	Olive	I, #8
Picea (numerous)	Spruce	F
Palm species (numerous)	Palm	F, I
Pinus species *(P. brutia, P. canariensis, P. b. eldarica, P. halepensis, P. pinea, P. radiata,* numerous others)	Pine (Calabrian, Canary Island, Mondell, Aleppo, Italian Stone, Monterey)	F
Platycladus orientalis	Oriental arborvitae	F
Podocarpus species (*P. gracilior, P. macrophyllus, P. latifolius)*	Fern Pine (Fern, Yew, Podocarpus)	F, #7
Pseudotsuga menziesii	Douglas Fir	F
Schinus molle	Peruvian Pepper Tree	F
Schinus terebinthifolia	Brazilian Pepper Tree	F
Tamarix species *(T. africana, T. aphylla, T. chinensis, T. parviflora)*	Tamarix (Tamarisk, Athel Tree, Salt Cedar, Tamarisk)	F, I
Taxodium species *(T. ascendens, T. distichum, T. mucronatum)*	Cypress (Pond, Bald, Monarch, Montezuma)	F
Taxus species *(T. baccata, T. brevifolia, T. cuspidata)*	Yew (English, Western, Japanese)	F
Thuja species *(T. occidentalis, T. plicata)*	Arborvitae/Red Cedar	F
Tsuga species *(T. heterophylla, T. mertensiana)*	Hemlock (Western, Mountain)	F
Groundcovers, Shrubs and Vines		
Acacia species	Acacia	F, I
Adenostoma fasciculatum	Chamise	F
Adenostoma sparsifolium	Red Shanks	F

Botanical Name	Common Name	Comment*
Agropyron repens	Quackgrass	F, I
Anthemis cotula	Mayweed	F, I
Groundcovers, Shrubs and Vines (cont.)		
Arbutus menziesii	Pacific Madrone	F
Arctostaphylos species	Manzanita	F
Arundo donax	Giant Reed	F, I
Artemisia species *(A. abrotanium, A. absinthium, A. californica, A. caucasica, A. dracunculus, A. tridentata, A. pynocephala)*	Sagebrush (Southernwood, Wormwood, California, Silver, True tarragon, Big, Sandhill)	F
Atriplex species (numerous)	Saltbush	F, I
Avena fatua	Wild Oat	F
Baccharis pilularis	Coyote Bush	F
Bambusa species	Bamboo	F, I
Bougainvillea species	Bougainvillea	F, I, #7
Brassica species *(B. campestris, B. nigra, B. rapa)*	Mustard (Field, Black, Yellow)	F, I
Bromus rubens	Foxtail, Red brome	F, I
Castanopsis chrysophylla	Giant Chinquapin	F
Cardaria draba	Hoary Cress	I
Carpobrotus species	Ice Plant, Hottentot Fig	I
Cirsium vulgare	Wild Artichoke	F,I
Conyza bonariensis	Horseweed	F
Coprosma pumila	Prostrate Coprosma	F
Cortaderia selloana	Pampas Grass	F, I
Cytisus scoparius	Scotch Broom	F, I
Dodonaea viscosa	Hopseed Bush	F
Eriodictyon californicum	Yerba Santa	F
Eriogonum species *(E. fasciculatum)*	Buckwheat (California)	F
Fremontodendron species	Flannel Bush	F
Hedera species *(H. canariensis, H. helix)*	Ivy (Algerian, English)	I
Heterotheca grandiflora	Telegraph Plant	F
Hordeum leporinum	Wild barley	F, I
Juniperus species	Juniper	F
Lactuca serriola	Prickly Lettuce	I
Larix species (numerous)	Larch	F
Larrea tridentata	Creosote bush	F
Lolium multiflorum	Ryegrass	F, I
Lonicera japonica	Japanese Honeysuckle	F
Mahonia species	Mahonia	F
Mimulus aurantiacus	Sticky Monkeyflower	F, #7
Miscanthus species	Eulalie Grass	F
Muhlenbergia species	Deer Grass	F
Nicotiana species *(N. bigelovii, N. glauca)*	Tobacco (Indian, Tree)	F, I
Pennisetum setaceum	Fountain Grass	F, I

Botanical Name	Common Name	Comment*
Perovskia atroplicifolia	Russian Sage	F
Phoradendron species	Mistletoe	F
Groundcovers, Shrubs and Vines (cont.)		
Pickeringia montana	Chaparral Pea	F
Rhus (R. laurina, R. lentii)	Sumac (Laurel,Pink Flowering)	F
Ricinus communis	Castor Bean	F, I
Rhus Lentii	Pink Flowering Sumac	F
Rosmarinus species	Rosemary	F
Salvia species (numerous)	Sage	F, I, #7
Salsola australis	Russian Thistle	F, I
Solanum Xantii	Purple Nightshade (toxic)	I
Silybum marianum	Milk Thistle	F, I
Thuja species	Arborvitae	F
Urtica urens	Burning Nettle	F
Vinca major	Periwinkle	I

* F = flammable, I = Invasive

Notes:

1 This list was prepared by Dudek for Fanita Ranch Project. Certain plants are considered to be undesirable in the landscape due to characteristic that make them highly flammable. These characteristics can be either physical or chemical. Physical properties would include large amounts of dead material retained within the plant, rough or peeling bark, and the production of copious amounts of litter. Chemical properties include the presence of volatile substances such as oils, resins, wax, and pitch. Plants with these characteristics should not be planted within the first 50 feet adjacent to a structure in fire hazard areas. These species are typically referred to as "Target Species" since their complete or partial removal form the landscape is a critical part of hazard reduction.

2 Plants on this list that are considered invasive are a partial list of commonly found plants. There are many other plants considered invasive that should not be planted in a fuel modification zone and they can be found on The California Invasive Plant Council's Website www.cal-ipc.org/ip/inventory/index.php. Other plants not considered invasive at this time may be determined to be invasive after further study.

3 For the purpose of using this list as a guide in selecting plant material, it is stipulated that all plant material will burn under various conditions.

4 The absence of a particular plant, shrub, groundcover, or tree, from this list does not necessarily mean it is fire resistive.

5 All vegetation used in Fuel Modification Zones and elsewhere in this development shall be subject to approval of the City of Santee Fire Marshal.

6 Landscape architects may submit proposals for use of certain vegetation on a project specific basis. They shall also submit justifications as to the fire resistivity of the proposed vegetation to the City of Santee Fire Marshal.

7 Plant species is allowed, if deadwood is removed annually or as needed to minimize flammability.

8 Olive trees will be used in an orchard setting under intensive, agricultural management to minimize fire hazard.

References

City of Santee. 2016. Santee Municipal Code (Ordinance No. 545), Chapter 15.20 Section 4907.2.1 Fuel Modification Defensible Space, Zone One. October 2016.

County of Los Angeles Fire Department. 2011. Fuel Modification Plan Guidelines. Appendix III, Undesirable Plant List. July 2011.

County of San Diego. 2004. Department of Planning and Land Use, Building Division. Fire, Plants, Defensible Space and You (DPLU #199). June 2004.

Willis, E. 1997. San Diego County Fire Chief's Association. Wildland/Urban Interface Development Standards. August 1997.

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Appendix G

Fanita Ranch Plant List

Fanita Ranch Plant List

SINGLE-FAMILY COMMUNITY STREET TREES

Evergreen Trees

AGONIS FLEXUOSA / PEPPERMINT TREE
ARBUTUS X `MARINA` / MARINA STRAWBERRY TREE
CASSIA SPLENDIDA 'GOLDEN' / GOLDEN WONDER CASSIA
CERCIS CANADENSIS 'FOREST PANSY' / FOREST PANSY EASTERN REDBUD
CUPNIOPSIS ANACARDIOIDES / CARROTWOOD
GEIJERA PARVIFLORA / AUSTRALIAN WILLOW
METROSIDEROS EXCELSA / NEW ZEALAND CHRISTMAS TREE
RHUS LANCEA / AFRICAN SUMAC

Deciduous Trees

CHILOPSIS LINEARIS CULT. / DESERT WILLOW CULTIVARS
HANDROANTHUS IMPETIGINOSUS / PINK TRUMPET TREE
JACARANDA MIMOSIFOLIA / JACARANDA
KOELREUTERIA BIPINNATA / CHINESE FLAME TREE
KOELREUTERIA PANICULATA / GOLDEN RAIN TREE
LAGERSTROEMIA HYBRID / CRAPE MYRTLE
PISTACIA CHINENSIS / CHINESE PISTACHE
X CHITALPA TASHKENTENSIS / CHITALPA

MULTI-FAMILY COMMUNITY STREET TREES

Evergreen Trees

BRACHYCHITON POPULNEUS / BOTTLE TREE
HYMENOSPORUM FLAVUM / SWEETSHADE
LOPHOSTEMON CONFERTUS / BRISBANE BOX
MAGNOLIA GRANDIFLORA `MAJESTIC BEAUTY` / SOUTHERN MAGNOLIA
MAGNOLIA GRANDIFLORA 'RUSSET' / RUSSET SOUTHERN MAGNOLIA
PODOCARPUS GRACILIOR / FERN PINE (To be maintained per Fire Protection Plan)
PODOCARPUS HENKELII / LONG-LEAFED YELLOWWOOD (To be maintained per FPP)
QUERCUS ILEX / HOLLY OAK
QUERCUS ROBER 'FASTIGIATA / COLUMNAR ENGLISH OAK

Deciduous Trees

GINKO BILOBA / MAIDENHAIR TREE
LIQUIDAMBAR STYRACIFLUA / SWEET GUM
PLATANUS ACERIFOLIA CULT. / LONDON PLANE TREE CULTIVARS
LOPHOSTEMON CONFERTUS / BRISBANE BOX
TIPUANA TIPU / TIPU TREE
ULMUS PARVIFOLIA `TRUE GREEN` / TRUE GREEN ELM
ZELKOVA SERRATA 'VILLAGE GREEN' / SAWLEAF ZELKOVA

Fanita Ranch Plant List

PARK AND INTERIOR PLANTING

Trees

AGONIS FLEXUOSA / PEPPERMINT TREE
ALBIZIA JULIBRISSIN / MIMOSA TREE
ARBUTUS X 'MARINA' / ARBUTUS MULTI-TRUNK
BRACHYCHITON POPULNEUS / BOTTLE TREE
CASSIA SPLENDIDA 'GOLDEN' / GOLDEN WONDER CASSIA
CERCIDIUM X 'DESERT MUSEUM' / DESERT MUSEUM PALO VERDE
CERCIS CANADENSIS 'FOREST PANSY' / FOREST PANSY EASTERN REDBUD
CERCIS OCCIDENTALIS MULTI-TRUNK / WESTERN REDBUD
CHILOPSIS LINEARIS CULT. / DESERT WILLOW CULTIVARS
CINNAMOMUM CAMPHORA / CAMPHOR TREE
CUPNIOPSIS ANACARDIOIDES / CARROTWOOD
ERYOBOTRYA DEFLEXA / BRONZE LOQUAT
ERYTHRINA X SYKESII / AUSTRALIAN CORAL TREE
FRAXINUS UHDEI / SHAMEL ASH
HANDROANTHUS IMPETIGINOSUS / PINK TRUMPET TREE
HYMENOSPORUM FLAVUM / SWEETSHADE
JACARANDA MIMOSIFOLIA / JACARANDA
KOELREUTERIA PANICULATA / GOLDEN RAIN TREE
LAGERSTROEMIA HYBRID / CRAPE MYRTLE
LIQUIDAMBAR STYRACIFLUA / SWEET GUM
MAGNOLIA GRANDIFLORA / SOUTHERN MAGNOLIA
MAGNOLIA GRANDIFLORA 'RUSSET' / RUSSET SOUTHERN MAGNOLIA
PISTACIA CHINENSIS / CHINESE PISTACHE
PLATANUS ACERIFOLIA CULT. / LONDON PLANE TREE CULTIVARS
PLATANUS RACEMOSA / CALIFORNIA SYCAMORE ~~MULTI TRUNK~~
PODOCARPUS GRACILIOR / FERN PINE (To be maintained per Fire Protection Plan)
PODOCARPUS HENKELII / LONG-LEAFED YELLOWWOOD (To be maintained per FPP)
POPULUS FREMONTII / FREMONT COTTONWOOD
QUERCUS AGRIFOLIA / COAST LIVE OAK
QUERCUS ENGLEMANNII / ENGELMANN OAK
QUERCUS ILEX / HOLLY OAK
QUERCUS ROBER 'FASTIGIATA / COLUMNAR ENGLISH OAK
QUERCUS SUBER / CORK OAK
PYRUS CALLERYANA `ARISTOCRAT` / ARISTOCRAT FLOWERING PEAR
RHUS LANCEA / AFRICAN SUMAC
TIPUANA TIPU / TIPU TREE
ULMUS PARVIFOLIA / CHINESE ELM
X CHITALPA TASHKENTENSIS / CHITALPA
ZELKOVA SERRATA 'VILLAGE GREEN' / SAWLEAF ZELKOVA

Succulents and Cacti (Large)

AGAVE AMERICANA / CENTURY PLANT
AGAVE WEBERI / WEBER'S AGAVE
AGAVE X 'BACCARAT' / CRYSTAL BOWL AGAVE
ALOE ARBORESCENS / TORCH ALOE
DASYLIRION WHEELERII / GREY DESERT SPOON
DRACAENA DRACO / DRAGON TREE
FURCRAEA FOETIDA 'MEDIOPICTA' / MAURITIUS HEMP

Fanita Ranch Plant List

PARK AND INTERIOR PLANTING (cont.)

Succulents and Cacti (Small to Medium)

AEONIUM CANARIENSE / GIANT VELVET ROSE
AGAVE ATTENUATA / AGAVE
AGAVE X 'BLUE GLOW' / BLUE GLOW AGAVE
AGAVE PARRYI / PARRY AGAVE
ALOE MACULATA / SOAP ALOE
ALOE NOBILIS / GOLD TOOTH ALOE
ALOE PLICATILIS / FAN ALOE
ALOE VERA / MEDICINAL ALOE
ALOE X 'BLUE ELF' / ALOE
CISTANTHE GRANDIFLORA / ROCK PURSLANE
CRASSULA OVATA / JADE PLANT
EUPHORBIA TIRUCALLI / STICKS ON FIRE
HESPERALOE PARVIFLORA / RED YUCCA
OPUNTIA VIOLACEA 'SANTA RITA' / PURPLE PRICKLEY PEAR

Screening Shrubs

CEANOTHUS X `CONCHA` / CALIFORNIA LILAC
PITTOSPORUM TENUIFOLIUM `SILVER SHEEN` / TAWHIWHI
PODOCARPUS M. 'MAKI' / SHRUBBY YEW PINE (To be maintained per FPP)
PRUNUS CAROLINIANA `BRIGHT `N TIGHT` TM / BRIGHT `N TIGHT CAROLINA LAUREL
RHAMNUS CALIFORNICA `EVE CASE` / CALIFORNIA COFFEEBERRY

Ornamental Shrubs and Perennials

ABELIA X GRANDIFLORA 'SHERWOODII' / DWARF ABELIA
ABULITON SP. / FLOWERING MAPLE
BUDDLEJA SP. / BUTTERFLY BUSH
BOUGAINVILLEA SP. / BOUGAINVILLEA (To be maintained per Fire Protection Plan)
BUXUS MICROPHYLLA / LITTLELEAF BOXWOOD
CALLIANDRA CALIFORNICA / BAJA FAIRY DUSTER
CARISSA MACROCARPA / NATAL PLUM
CEANOTHUS CYANEUS (SCARIFIED) / NCN
CEANOTHUS G. 'ANCHOR BAY' / ANCHOR BAY CEANOTHUS
CISTUS LADANIFER / CRIMSON-SPOT ROCKROSE
CISTUS SP. / ROCKROSE
CLEOME ISOMERIS / BLADDERPOD SPIDERFLOWER
EREMOPHILA MACULATA 'VALENTINE' / VALENTINE EMU BUSH
ESCALLONIA ~~X~~ SP. / ESCALLONIA VARIETIES
GALVEZIA SPECIOSA / ISLAND BUSH SNAPDRAGON
GREVILLEA ~~X .NOELLII'~~ CULT. / GREVILLEA CULTIVARS
IVA HAYESIANA / SAN DIEGO POVERTY WEED
LAVANDULA DENTATA / FRENCH LAVENDER
LAVANDULA STOECHAS / SPANISH LAVENDER
LANTANA SP. / LANTANA
LEUCOPHYLLUM SP. / TEXAS RANGER
MYRTUS COMMUNIS 'COMPACTA' / DWARF MYRTLE
NANDINA SP. / HEAVENLY BAMBOO
PITTOSPORUM TENUIFOLIUM / KOHUHU
PITTOSPORUM TOBIRA / MOCK ORANGE
PITTOSPORUM T. 'WHEELER'S DWARF' / WHEELER'S DWARF MOCK ORANGE

Fanita Ranch Plant List

PARK AND INTERIOR PLANTING (cont.)

Ornamental Shrubs and Perennials (cont.)

PRUNUS CAROLINIANA 'BRIGHT 'N TIGHT' / 'BRIGHT 'N TIGHT' CAROLINA LAUREL
RHAPHIOLEPIS / INDIAN HAWTHORN
ROSA SP. / ROSE
RUSSELIA EQUISETIFORMIS / CORAL FOUNTAIN
VERBENA SP. / VERBENA
WESTRINGIA FRUTICOSA / COAST ROSEMARY

Ornamental Grasses or Grass-like Plants

ANIGOZANTHOS SP. / KANGAROO PAWS
ARMERIA MARITIMA / COMMON THRIFT
ARISTIDA PURPUREA / PURPLE THREEAWN
BULBINE FRUTESCENS / STALKED BULBINE
CHONDROPETALUM TECTORUM / SMALL CAPE RUSH
DIANELLA CAERULEA `CASSA BLUE` / CASSA BLUE FLAX LILY
DIANELLA REVOLUTA `LITTLE REV` / LITTLE REV FLAX LILY
DIANELLA TASMANICA `VARIEGATA` / FLAX LILY
DIETES 'LEMON DROP' / LEMON DROP FORTNIGHT LILY
FESTUCA GLAUCA / BLUE FESCUE
FESTUCA MAIREI / ATLAS FESCUE
HELICTOTRICHON SEMPERVIRENS / BLUE OAT GRASS
HEMEROCALLIS SP. / DAYLILY
IRIS DOUGLASIANA / DOUGLAS IRIS
JUNCUS PATENS / CALIFORNIA GRAY RUSH
KNIPHOFIA UVARIA / RED HOT POKER
LOMANDRA LONGIFOLIA `SEA BREEZE` / DWARF MAT RUSH
PHORMIUM TENAX VAR. / NEW ZEALAND FLAX
TULBAGHIA SP. / SOCIETY GARLIC

Groundcovers

ACHILLEA 'MOONSHINE' / MOONSHINE YARROW
ARTEMISIA 'CANYON GRAY' / PROSTRATE COASTAL SAGE BRUSH
BACCHARIS P. 'PIGEON POINT' / DWARF COYOTE BUSH
CARISSA MACROCARPA `GREEN CARPET` / GREEN CARPET NATAL PLUM
CEANOTHUS `CENTENNIAL` / CENTENNIAL LILAC
CEANOTHUS G. HORIZONTALIS / CARMEL CREEPER
CISTUS SP. / ROCKROSE
COPROSMA 'KIRKII' / CREEPING MIRROR PLANT
COTONEASTER DAMMERI `LOWFAST` / LOWFAST BEARBERRY COTONEASTER
CRASSULA MULTICAVA / FAIRY CRASSULA
DYMONDIA MARGARETAE / DYMONDIA
ERIGERON KARVINSKIANUS / SANTA BARBARA DAISY
FRAGARIA CHILOENSIS / ORNAMENTAL STRAWBERRY
GAZANIA SP. / GAZANIA
GREVILLEA LANIGERA `COASTAL GEM` / COASTAL GEM GREVILLEA
GREVILLEA LANIGERA `MT. TAMBORITHA` / MT. TAMBORITHA GREVILLEA
LANTANA MONTEVIDENSIS / PURPLE TRAILING LANTANA
LANTANA X `NEW GOLD` / NEW GOLD LANTANA
MYOPORUM PARVIFOLIUM 'PINK' / PINK MYOPORUM
MYOPROUM X 'PACIFICA' / TRAILING MYOPORUM

Fanita Ranch Plant List

PARK AND INTERIOR PLANTING (cont.)

Groundcovers (cont.)

OSTEOSPERMUM FRUTICOSUM `LAVENDER` / AFRICAN DAISY
SENECIO SP. / BLUE CHALKSTICKS
THYMUS SP. / THYME

Vines

CLEMATIS ARMANDII / EVERGREEN CLEMATIS
DISTICTUS SP. / TRUMPET VINE
JASMINUM SP. / JASMINE
LONICERA SP. / HONEYSUCKLE
MACFADYENA UNGUIS-CATI / CAT'S CLAW VINE
TRACHYLOSPERMUM JASMINOIDES / STAR JASMINE

Shade Tolerant Plants

BUXUS X `CHICAGOLAND GREEN` / GLENCOE BOXWOOD
COPROSMA REPENS / MIRROR PLANT
CORDYLINE X `DESIGN-A-LINE BURGUNDY / CORDYLINE
CYRTOMIUM FALCATUM / HOLLY FERN
DIANELLA CULTIVARS / FLAX LILY CULTIVARS
DIETES / FORTNIGHT LILY
FATSIA JAPONICA / JAPANESE ARALIA
FRAGARIA CHILOENSIS / ORNAMENTAL STRAWBERRY
HEUCHERA SP. / CORAL BELLS
MAHONIA EURYBRACTEATA 'SOFT CARESS' / SOFT CARESS MAHONIA
MYRICA CALIFORNICA / PACIFIC WAX MYRTLE
NANDINA DOMESTICA VARIETIES / HEAVENLY BAMBOO
PHILODENDRON SP. / PHILODENDRON
PITTOSPORUM CRASSIFOLIUM / KARO PITTOSPORUM
POLYSTICHUM MUNITUM / WESTERN SWORD FERN
RIBES VIBURNIFOLIUM / CATALINA CURRANT
SANSEVIERIA TRIFASCIATA / MOTHER-IN-LAW'S TONGUE
SYMPHORICARPOS ALBA / SNOWBERRY
WESTRINGIA FRUTICOSA `WYNABBIE GEM` / WYNABBIE GEM COAST ROSEMARY

EDIBLE/MEDICINAL PLANTS

Trees

ANACARDIUM OCCIDENTALE / CASHEW
ANNONA CHERIMOLA / CHERIMOYA
ARBUTUS UNEDO / STRAWBERRY TREE
CERATONIA SILIQUA / CAROB
CITRUS KUMQUAT 'MEIWA' / MEIWA KUMQUAT
CITRUS RETICULATA 'GOLD NUGGET' / GOLD NUGGET MANDARIN ORANGE
CITRUS X AURANTIIFOLIA 'BEARSS SEEDLESS' / BEARSS SEEDLESS LIME CITRUS X LIMON
CITRUS 'IMPROVED MEYER' / MEYER LEMON
CITRUS X SINENSIS 'MORO' / MORO BLOOD ORANGE
CITRUS X SINENSIS 'NAVEL' / NAVEL ORANGE
CITRUS X SINENSIS 'WASHINGTON NAVEL' / ORANGE
CITRUS X TANGELO 'MINNEOLA' / HONEYBELL TANGELO
DIOSPYROS KAKI 'FUYU' / FUYU PERSIMMON
ERIOBOTRYA JAPONICA / LOQUAT

Fanita Ranch Plant List

EDIBLE/MEDICINAL PLANTS (cont.)

Trees (cont.)

FEIJOA SELLOWIANA / PINEAPPLE GUAVA
FICUS CARICA / COMMON FIG
FICUS CARICA 'MISSION' / MISSION FIG
JUGLANS CALIFORNICA / CALIFORNIA WALNUT
LAURUS NOBILIS / SWEET BAY
LITCHI CHINENSIS / LYCHEE
MACADAMIA INTERFRIFOLIA / MACADAMIA NUT
MALUS DOMESTICA 'HONEYCRISP' / HONEYCRISP APPLE
OLEA EUROPAEA VAR. / EUROPEAN OLIVE (To be maintained per FPP)
PERSEA AMERICANA 'BACON' / AVOCADO (To be maintained per FPP)
PERSEA AMERICANA 'FUERTE' / FUERTE AVOCADO (To be maintained per FPP)
PERSEA AMERICANA 'GWEN' / GWEN AVOCADO (To be maintained per FPP)
PERSEA AMERICANA 'HASS' / AVOCADO (To be maintained per FPP)
PISTACIA VERA / PISTACIO
PUNICA GRANATUM 'WONDERFUL' / POMEGRANATE
PRUNUS ARMERIACA 'CHINESE' / CHINESE APRICOT
PRUNUS MARITIMA / BEACH PLUM
PRUNUS PERSICA 'SANTA BARBARA' / SANTA BARBARA PEACH
PSIDIUM CATTLEIANA / GUAVA
PYRUS SP. / PEAR
ZIZIPHUS JUJUBA / JUJUBE

Vines

HUMULUS LUPULUS / HOPS (To be maintained per FPP)
PASSIFLORA SP. / PASSION FLOWER
RUBUS IDAEUS 'INDIAN SUMMER' / INDIAN SUMMER RASPBERRY
RUBUS 'MARION' / MARION BLACKBERRY
RUBUS 'TRIPLE CROWN' / TRIPLE CROWN BLACKBERRY
VITIS CALIFORNICA / GRAPE
VITIS VINIFERA 'CHARDONNAY' / CHARDONNAY GRAPE
VITIS VINIFERA 'MERLOT' / MERLOT GRAPE
VITIS VINIFERA 'PINOT NOIR' / PINOT NOIR GRAPE
VITIS VINIFERA 'THOMPSON SEEDLESS' / THOMPSON SEEDLESS GRAPE
WISTERIA SINESIS / WISTERIA

Shrubs / Perennials

ABELIA GRANDIFLORA VARIETIES / GLOSSY ABELIA
ARBUTUS UNEDO 'COMPACTA' / DWARF STRAWBERRY TREE
ALLIUM SCHOENOPRASUM / CHIVES
ALLIUM TUBEROSUM / GARLIC CHIVES
ALOYSIA TRIPHYLLA / LEMON VERBENA
CAMELLIA SINENSIS / GREEN TEA
CAPSICUM ANNUUM 'CHILLY CHILLI' / CHILLY CHILLI ORNAMENTAL CHILLI
CARISSA MACROCARPA 'TOMLINSON' / TOMLINSON NATAL PLUM
CYMBOPOGON CITRATUS / LEMON GRASS
CYNARA SCOLYMUS 'IMPROVED GREEN GLOBE' / GREEN GLOVE ARTICHOKE
ECHINACEA PURPUREA / PURPLE CONEFLOWER
HAMAMELIS VIRGINIANA / WITCH HAZEL
LAVANDULA DENTATA / FRENCH LAVENDER
LAVANDULA STOECHAS / SPANISH LAVENDER
LYCIUM BARBARUM / FIRECRACKER GOJI BERRY

Fanita Ranch Plant List

EDIBLE/MEDICINAL PLANTS (cont.)

Shrubs / Perennials (cont.)

RIBES RUBRUM 'RED LAKE' / RED LAKE CURRANT
ROSA DAMASCENA / OTTO ROSE
ROSA CANINA / ROSE
SACCHARUM OFFICINARUM / SUGAR CANE
SALIX ALBA / WHITE WILLOW
SALVIA ELEGANS / PINEAPPLE SAGE
SALVIA OFFICINALIS CULT. / SAGE
SAMBUCUS CANADENSIS 'ADAMS' / ADAMS ELDERBERRY
SAMBUCUS NIGRA / COMMON ELEDERBERRY
SIMMONDSIA CHINENSIS / JOJOBA
STEVIA REBAUDIANA / STEVIA
THYMUS VULGARIS / ENGLISH THYME
VACCINIUM CORYMBOSUM VAR. / BLUEBERRY
VITEX AGNUS-CASTUS / CHASTE TREE
ZINGIBER OFFICINALE / GINGER

Succulents and Cacti

ALOE VERA / ALOE VERA
HYLOCEREUS UNDATUS / DRAGON FRUIT
OPUNTIA FICUS-INDICA / PRICKLY PEAR OR NOPALES

Groundcovers

ACHILLEA MILLEFOLIUM / YARROW
ARNICA CHAMISSONIS / MEADOW ARNICA
CHRYSOPOGON ZIZANIOIDES / VETIVER
FRAGARIA X ANANASSA VAR. / STRAWBERRY
CENTELLA ASIATICA / GOTU KOLA
CHAMAEMELUM NOBILE / ROMAN CHAMOMILE
EQUISETIUM ARVENSE L. / FIELD HORSETAIL
HELICHRYSUM ITALICUM / CURRY PLANT
MENTHA PIPERITA / PEPPERMINT
ORIGANUM VULGARE / ITALIAN OREGANO
TARAXACUM OFFICINALE / DANDELION
THYMUS X CITRIODORUS 'AUREUS' / GOLDEN LEMON THYME
THYMUS SERPYLLUM 'MAGIC CARPET' / MAGIC CARPET CREEPING THYME

Annual/Biannual Herbs

ARCTIUM LAPPA / BURDOCK
AVEUA SATIVA / OATS
CALENDULA OFFICINALIS / CALENDULA
CAPSCICUM FRUTESCENS / CAYENNE
HELIANTHUS ANNUUS / SUNFLOWER
MATRICARIA RECUTITA / GEMAN CHAMOMILE
TRIFOLIUM PRATENSE / RED CLOVER
WITHANIA SOMNIFERA / ASHWAGANDHA

Vegetables

Various leaf vegetables such as arugula, cabbage, chard, lettuce, etc.
Various root, bulb and tubers such as carrot, potato, onion, leeks, turnips, etc.
Various other vegetables such as tomato, beans, peas, asparagus, cauliflower, etc.

Fanita Ranch Plant List

RIPARIAN / BIORETENTION BASIN PLANTING

Trees (Subject to Stand Density and Spacing Review)

ACER MACROPHYLLUM / BIG LEAF MAPLE
ALNUS RHOMBIFOLIA / WHITE ALDER
CERCIS OCCIDENTALIS / WESTERN REDBUD MULTI-TRUNK
PLATANUS RACEMOSA / CALIFORNIA SYCAMORE MULTI-TRUNK
POPULUS FREMONTII / FREMONT COTTONWOOD
QUERCUS AGRIFOLIA / COAST LIVE OAK MULTI-TRUNK
SALIX GOODDINGII / BLACK WILLOW
SALIX LAEVIGATA / RED WILLOW
SALIX LASIOLEPIS / ARROYO WILLOW
SALIX LUCIDA / LANCE-LEAF WILLOW
SAMBUCUS MEXICANA / MEXICAN ELDERBERRY

Shrubs and Grasses (Subject to understory clearance review)

ACHILLEA MILLEFOLIUM / YARROW
AMBROSIA PSILOSTACHYA / RAGWEED
AMBROSIA CONFERTIFOLIA / THIN-LEAF RAGWEED
ANEMOPSOS CALIFORNICA / YERBA MANSA
ARISTIDA PURPUREA / PURPLE THREEAWN
ARTEMISIA DOUGLASIANA / MUGWORT
ARTEMISIA PALMERI / PALMER SAGEWORT
ASCLEPIAS FASCICULARIS / NARROW-LEAF MILKWEED
BACCHARIS DOUGLASII / MARSH BACCHARIS
CAREX PRAEGACILLIS / CALIFORNIA FIELD SEDGE
CAREX SUBFUSCA / RUSTY SEDGE
DIANELLA CAERULEA `CASSA BLUE` / CASSA BLUE FLAX LILY
DIANELLA TASMANICA `VARIEGATA` / FLAX LILY
DISTICHLIS SPICATA / SALT GRASS
ELEOCHARIS MACROSTACHYA / PALE SPIKE RUSH
ELYMUS TRITICOIDES / BEARDLESS WILD-RYE
EPILOBIUM CILIATUM CILATUM / WILLOW HERB
FESTUCA CALIFORNICA / CALIFORNIA FESCUE
FESTUCA MAIREI / ATLAS FESCUE
FESTUCA RUBRA / RED FESCUE
IRIS DOUGLASIANA / DOUGLAS IRIS
IVA HAYESIANA / SAN DIEGO POVERTY WEED
JUNCUS BUFONIUS / TOAD RUSH
JUNCUS DUBIUS / MARIPOSA RUSH
JUNCUS MEXICANUS / MEXICAN RUSH
JUNCUS PATENS / CALIFORNIA GRAY RUSH
LEYMUS CONDENSATUS 'CANYON PRINCE' / CANYON PRINCE WILD RYE
LOMANDRA LONGIFOLIA `SEA BREEZE` / DWARF MAT RUSH
PHACELIA CICUTARIA VAR. HISPIDA/ CATERPILLAR PHACELIA
PLUCHEA ODORATA / MARSH FLEABANE
RIBES SPECIOSUM / GOOSEBERRY
ROSA CALIFORNICA / CALIFORNIA ROSE
SALIX EXIGUA / SANDBAR WILLOW
SCIRPUS CENUUS / LOW BULLRUSH
SYSYRINCHIUM BELLUM / BLUE-EYED GRASS

Fanita Ranch Plant List

ROADSIDE FUEL MODIFICATION ZONES AND MEDIANS

Trees (Subject to Spacing and Road Clearance Review)

ARBUTUS UNEDO / STRAWBERRY TREE MULTI-TRUNK
ARBUTUS X 'MARINA' / ARBUTUS MULTI-TRUNK
CASSIA SPLENDIDA 'GOLDEN' / GOLDEN WONDER CASSIA
CERCIDIUM X 'DESERT MUSEUM' / DESERT MUSEUM PALO VERDE
CERCIS CANADENSIS 'FOREST PANSY' / FOREST PANSY EASTERN REDBUD
CHILOPSIS LINEARIS CULT. / DESERT WILLOW CULTIVARS
CHILOPSIS LINEARIS CULT. / DESERT WILLOW CULTIVARS
CINNAMOMUM CAMPHORA / CAMPHOR TREE
ERYTHRINA X SYKESII / AUSTRALIAN CORAL TREE
HANDROANTHUS IMPETIGINOSUS / PINK TRUMPET TREE
HYMENOSPORUM FLAVUM / SWEETSHADE
JACARANDA MIMOSIFOLIA / JACARANDA
KOELREUTERIA PANICULATA / GOLDEN RAIN TREE
LAGERSTROEMIA HYBRID / CRAPE MYRTLE
LOPHOSTEMON CONFERTUS / BRISBANE BOX
MAGNOLIA GRANDIFLORA / SOUTHERN MAGNOLIA
MAGNOLIA GRANDIFLORA 'RUSSET' / RUSSET SOUTHERN MAGNOLIA
PISTACIA CHINENSIS / CHINESE PISTACHE
PLATANUS ACERIFOLIA CULT. / LONDON PLANE TREE CULTIVARS
QUERCUS AGRIFOLIA / COAST LIVE OAK
QUERCUS ENGELMANNII / ENGELMANN OAK
QUERCUS ILEX / HOLLY OAK
QUERCUS SUBER / CORK OAK
RHUS LANCEA / AFRICAN SUMAC MULTI-TRUNK OR STANDARD
TIPUANA TIPU / TIPU TREE
X CHITALPA TASHKENTENSIS / CHITALPA

Shrubs / Perennials (Subject to understory clearance review)

ABELIA X GRANDIFLORA 'SHERWOODII' / DWARF ABELIA
BUDDLEJA SP. / BUTTERFLY BUSH
BUXUS MICROPHYLLA / LITTLELEAF BOXWOOD
CALLIANDRA CALIFORNICA / BAJA FAIRY DUSTER
CARISSA MACROCARPA / NATAL PLUM
CEANOTHUS G. 'ANCHOR BAY' / ANCHOR BAY CEANOTHUS
CISTUS SP. / ROCKROSE
EREMOPHILA MACULATA 'VALENTINE' / VALENTINE EMU BUSH
ESCALLONIA ~~X~~ SP. / ESCALLONIA VARIETIES
GALVEZIA SPECIOSA / ISLAND BUSH SNAPDRAGON
GREVILLEA CULTIVARS / GREVILLEA CULTIVARS
IVA HAYESIANA / SAN DIEGO POVERTY WEED
LANTANA SP. / LANTANA
LAVANDULA DENTATA / FRENCH LAVENDER
LAVANDULA STOECHAS / SPANISH LAVENDER
LEUCOPHYLLUM SP. / TEXAS RANGER
MYRTUS COMMUNIS 'COMPACTA' / DWARF MYRTLE
NANDINA SP. / HEAVENLY BAMBOO
PITTOSPORUM T. 'WHEELER'S DWARF' / WHEELER'S DWARF MOCK ORANGE
PITTOSPORUM TENUIFOLIUM / KOHUHU
PITTOSPORUM TOBIRA / MOCK ORANGE
PRUNUS CAROLINIANA 'BRIGHT 'N TIGHT' / 'BRIGHT 'N TIGHT' CAROLINA LAUREL
RHAMNUS CALIFORNICA 'LITTLE SUR' / LITTLE SUR CALIFORNIA COFFEEBERRY

Fanita Ranch Plant List

ROADSIDE FUEL MODIFICATION ZONES AND MEDIANS (cont.)

Shrubs / Perennials (Subject to understory clearance review) (cont.)

RHAPHIOLEPIS / INDIAN HAWTHORN
RIBES SPECIOSUM / FUCHSIA FLOWERING GOOSEBERRY
ROSA SP. / ROSE
RUSSELIA EQUISETIFORMIS / CORAL FOUNTAIN
VERBENA SP. / VERBENA
WESTRINGIA FRUTICOSA / COAST ROSEMARY

Succulents and Cacti (Subject to understory clearance review)

AEONIUM CANARIENSE / GIANT VELVET ROSE
AGAVE AMERICANA / CENTURY PLANT
AGAVE ATTENUATA / AGAVE
AGAVE PARRYI / PARRY AGAVE
AGAVE WEBERI / WEBER'S AGAVE
AGAVE X 'BACCARAT' / CRYSTAL BOWL AGAVE
AGAVE X 'BLUE GLOW' / BLUE GLOW AGAVE
ALOE ARBORESCENS / TORCH ALOE
ALOE MACULATA / SOAP ALOE
ALOE NOBILIS / GOLD TOOTH ALOE
ALOE PLICATILIS / FAN ALOE
ALOE VERA / ALOE VERA
ALOE X 'BLUE ELF' / ALOE
CISTANTHE GRANDIFLORA / ROCK PURSLANE
CRASSULA OVATA / JADE PLANT
CYLINDROPUNTIA PROLIFERA / COAST CHOLLA
DASYLIRION WHEELERII / GREY DESERT SPOON
DUDLEYA SP. / DUDLEYA
EUPHORBIA TIRUCALLI / STICKS ON FIRE
HESPERALOE PARVIFLORA / RED YUCCA
OPUNTIA FICUS-INDICA / PRICKLY PEAR OR NOPALES
OPUNTIA LITTORALIS / COAST PRICKLY PEAR
OPUNTIA VIOLACEA 'SANTA RITA' / PURPLE PRICKLEY PEAR

Ornamental Grasses or Grass-like Plants (Subject to understory clearance review)

ANIGOZANTHOS SP. / KANGAROO PAWS
ARMERIA MARITIMA / COMMON THRIFT
BULBINE FRUTESCENS / STALKED BULBINE
DIANELLA CAERULEA `CASSA BLUE` / CASSA BLUE FLAX LILY
DIANELLA REVOLUTA `LITTLE REV` / LITTLE REV FLAX LILY
DIANELLA TASMANICA `VARIEGATA` / FLAX LILY
DIETES 'LEMON DROP' / LEMON DROP FORTNIGHT LILY
FESTUCA GLAUCA / BLUE FESCUE
FESTUCA MAIREI / ATLAS FESCUE
HELICTOTRICHON SEMPERVIRENS / BLUE OAT GRASS
HEMEROCALLIS SP. / DAYLILY
IRIS DOUGLASIANA / DOUGLAS IRIS
KNIPHOFIA UVARIA / RED HOT POKER
LOMANDRA LONGIFOLIA `SEA BREEZE` / DWARF MAT RUSH
PHORMIUM TENAX VAR. / NEW ZEALAND FLAX
TULBAGHIA SP. / SOCIETY GARLIC

Fanita Ranch Plant List

ROADSIDE FUEL MODIFICATION ZONES AND MEDIANS (cont.)

Groundcovers (Subject to understory clearance review)

ACHILLEA MILLEFOLIUM / COMMON YARROW
ACHILLEA 'MOONSHINE' / MOONSHINE YARROW
ARTEMISIA 'CANYON GRAY' / PROSTRATE COASTAL SAGE BRUSH
BACCHARIS P. 'PIGEON POINT' / DWARF COYOTE BUSH
BACCHARIS PILULARIS 'TWIN PEAKS NO.2' / DWARF COYOTE BUSH
CARISSA MACROCARPA `GREEN CARPET` / GREEN CARPET NATAL PLUM
CEANOTHUS `CENTENNIAL` / CENTENNIAL LILAC
CEANOTHUS G. 'HEART'S DESIRE' / PT. REYES CEANOTHUS
CEANOTHUS G. HORIZONTALIS / CARMEL CREEPER
CISTUS SP. / ROCKROSE
COPROSMA 'KIRKII' / CREEPING MIRROR PLANT
COPROSMA 'KIRKII' / CREEPING MIRROR PLANT
COTONEASTER DAMMERI `LOWFAST` / LOWFAST BEARBERRY COTONEASTER
CRASSULA MULTICAVA / FAIRY CRASSULA
DYMONDIA MARGARETAE / DYMONDIA
ERIGERON KARVINSKIANUS / SANTA BARBARA DAISY
FRAGARIA CHILOENSIS / ORNAMENTAL STRAWBERRY
GAZANIA SP. / GAZANIA
GREVILLEA LANIGERA `COASTAL GEM` / COASTAL GEM GREVILLEA
GREVILLEA LANIGERA `MT. TAMBORITHA` / MT. TAMBORITHA GREVILLEA
LANTANA MONTEVIDENSIS / PURPLE TRAILING LANTANA
LANTANA X `NEW GOLD` / NEW GOLD LANTANA
MYOPORUM PARVIFOLIUM 'PINK' / PINK MYOPORUM
MYOPROUM X 'PACIFICA' / TRAILING MYOPORUM
OSTEOSPERMUM FRUTICOSUM `LAVENDER` / AFRICAN DAISY
RIBES VIBURNIFOLIUM / EVERGREEN CURRANT
SENECIO SP. / BLUE CHALKSTICKS
THYMUS SP. / THYME

EXTERIOR SLOPES - BRUSH MANAGEMENT ZONES

Fuel Management Zone 1

ACHILLEA MILLEFOLIUM / COMMON YARROW
ARBUTUS UNEDO / STRAWBERRY TREE MULTI-TRUNK
ARBUTUS X 'MARINA' / ARBUTUS MULTI-TRUNK
BACCHARIS PILULARIS 'TWIN PEAKS NO.2' / DWARF COYOTE BUSH
CARISSA MACROCARPA `GREEN CARPET` / GREEN CARPET NATAL PLUM
CEANOTHUS CYANEUS (SCARIFIED) / BIG POD CEANOTHUS
CEANOTHUS G. 'HEART'S DESIRE' / PT. REYES CEANOTHUS
CEANOTHUS G. HORIZONTALIS / CARMEL CREEPER
CEANOTHUS MEGACARPUS / COAST CEANOTHUS
CEANOTHUS RAMULOSUS 'RODEO LAGOON' / RODEO LAGOON CEANOTHUS
CEANOTHUS TOMENTOSUS / WOOLLY LEAF CEANOTHUS
CHILOPSIS LINEARIS CULT. / DESERT WILLOW CULTIVARS

Fanita Ranch Plant List

EXTERIOR SLOPES - BRUSH MANAGEMENT ZONES (cont.)

Fuel Management Zone 1 (cont.)

COPROSMA 'KIRKII' / CREEPING MIRROR PLANT
DUDLEYA SP. / DUDLEYA
MYOPORUM PARVIFOLIUM 'PINK' / PINK MYOPORUM
PRUNUS ILICIFOLIA ILICIFOLIA / HOLLYLEAF CHERRY
QUERCUS AGRIFOLIA / COAST LIVE OAK
QUERCUS ENGELMANNII / ENGELMANN OAK
QUERCUS SUBER / CORK OAK
RHAMNUS CALIFORNICA / CALIFORNIA COFFEEBERRY
RHAMNUS CROCEA / REDBERRY
RHAMNUS CROCEA ILICIFOLIA / HOLLYLEAF REDBERRY
RHUS INTEGRIFOLIA / LEMONADE BERRY
RHUS LANCEA / AFRICAN SUMAC MULTI-TRUNK OR STANDARD
RIBES INDECORUM / WHITE FLOWERED CURRANT
RIBES SPECIOSUM / FUCHSIA FLOWERING GOOSEBERRY
RIBES VIBURNIFOLIUM / EVERGREEN CURRANT
SAMBUCUS MEXICANA / MEXICAN ELDERBERRY
CYLINDROPUNTIA PROLIFERA / COAST CHOLLA
OPUNTIA LITTORALIS / COAST PRICKLY PEAR

Herbaceous Plants in Fuel Modification Zones

ELYMUS CONDENSATUS / GIANT WILD RYE
ERIOPHYLLUM CONFERTIFOLIUM / GOLDEN YARROW
ESCHSCHOLZIA CALIFORNICA / CALIFORNIA POPPY
GNAPHALIUM CALIFORNICUM / CALIFORNIA EVERLASTING
HELIANTHEMUM SCOPARIUM / RUSHROSE
LASTHENIA CALIFORNICA / COAST GOLDFIELDS
LUPINUS SUCCULENTUS / ARROYO LUPINE
NEMOPHILA MENZIESII / BABY BLUE EYES
PLANTAGO ERECTA / DOT-SEED PLANTAIN
STIPA PULCHRA / PURPLE NEEDLE GRASS

HABITAT AREAS

ACMISPON GLABER / DEERWEED
ARTEMISIA CALIFORNICA / CALIFORNIA SAGEBRUSH
BACCHARIS PILULARIS / COYOTE BRUSH
BACCHARIS SAROTHROIDES / CHAPARRAL BROOM
BAHIOPSIS LACINIATA / SAN DIEGO SUNFLOWER
CASTILLEJA EXSERTA / PURPLE OWL'S CLOVER
CEANOTHUS TOMENTOSUS / WOOLLY LEAF CEANOTHUS
CORDYLANTHUS RIGIDUS VAR. SETIGERUS / DARK-TIPPED BRID'S-BEAK
CRYPTANTHA SP. / CRYPTANTHA
CYLINDROPUNTIA PROLIFERA / COAST CHOLLA
ENCELIA CALIFORNICA / CALIFORNIA ENCELIA
EPILOBIUM CANUM CANUM / CALIFORNIA FUSHIA
ERIODICTYON CRASSIFOLIUM / FELT-LEAF YERBA SANTA
ERIOGONUM FASCICULATUM / CALIFORNIA BUCKWHEAT
ERIOPHYLLUM CONFERTIFOLIUM / GOLDEN YARROW
ESCHSCHOLZIA CALIFORNICA / CALIFORNIA POPPY

Fanita Ranch Plant List

HABITAT AREAS (cont.)

FESTUCA MICROSTACHYS / SMALL FESCUE
GALIUM ANGUSTIFOLIUM / NARROW-LEAVED BEDSTRAW
GNAPHALIUM CALIFORNICUM I CALIFORNIA EVERLASTING
HAZARDIA SQUARROSA / SAWTOOTH GOLDENBUSH
HETEROMELES ARBUTIFOLIA / TOYON
ISOCOMA MENZIESSII / COAST GOLDENBUSH
ISOMERIS ARBOREA / BLADDERPOD
LASTHENIA CALIFORNICA I GOLDFIELDS
LESSINGIA FILAGINIFOLIA / SAND ASTER
LONICERA SUBSPICATA VAR. DENUDATA/ SOUTHERN HONEYSUCKLE
LUPINUS BICOOR / PYGMY LUPINE
LUPINUS SUCCULENTUS / ARROYO LUPINE
MALACOTHAMNUS FASCICULATA / CHAPARRAL MALLOW
MALOSMA LAURINA / LAUREL SUMAC
MARAH MACROCARPUS / WILD CUCUMBER
MELICA IMPERFECTA / MELIC GRASS
MIMULUS AURANTIACUS / STICKY MONKEYFLOWER
MIRABILIS LAEVIS / CALIFORNIA WISHBONE BUSH
NEMOPHILA MENZIESll / BABY BLUE EYES
OPUNTIA LITTORALIS / COAST PRICKLY-PEAR
PHACELIA DISTANS / COMMON PHACELIA
PHACELIA PARRYI / PARRY'S PHACELIA
PLANTAGO ERECTA / DOTSEED PLANTAIN
PRUNUS ILICIFOLIA / HOLLYLEAF CHERRY
RHAMNUS CROCEA / SPINY REDBERRY
RHUS INTEGRIFOLIA / LEMONADE BERRY
RIBES INDECORUM / WHITE FLOWERED CURRANT
RIBES SPECIOSUM / FUCHSIA FLOWERING
RHUS INTEGRIFOLIA / LEMONADE BERRY
SALVIA APIANA / WHITE SAGE
SALVIA MELLIFERA / BLACK SAGE
SAMBUCUS MEXICANA / BLUE ELDERBERRY
STIPA LEPIDA / FOOTHILL NEEDLE GRASS
STIPA PULCHRA / PURPLE NEEDLE GRASS
XYLOCOCCUS BICOLOR / MISSION MANZANITA
YUCCA WHIPPLEI / OUR LORD'S CANDLE

NCN = No Common Name
FPP = Fire Protection Plan

Appendix H

Construction Fire Prevention Plan

FANITA RANCH
CONSTRUCTION FIRE PREVENTION PLAN

Prepared for:

City of Santee Fire Department
10601 Magnolia Avenue, Building #5
Santee, California 92071
Contact: Bruce Kerl

On behalf of Applicant:

HomeFed Corp
1903 Wright Place, Suite 220
Carlsbad, California 92008
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Prepared by:

DUDEK
605 Third Street
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MAY 2020

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List of Acronyms and Abbreviations

AMSL	Above Mean Sea Level
CAL FIRE	California Department of Forestry and Fire Protection
CFC	California Fire Code (2016)
CFD	Community Facilities District
CFPP	Construction Fire Prevention Plan
CFR	Code of Federal Regulations
FAHJ	Fire Authority Having Jurisdiction
IC	Incident Command or Incident Commander
NFPA	National Fire Protection Association
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
Proposed Project	Fanita Ranch Specific Plan
RFW	Red Flag Warning
SFD	Santee Fire Department
SSO	Site Safety Officer/Fire Safety Coordinator
TBD	To be determined
USGS	U.S. Geological Survey

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Definitions

1. **Activity Risk**: Activity risks include those actions that present a risk of igniting a wildfire.
2. **Fire Patrol**: A Fanita Ranch individual will be assigned as "Fire Patrol" specifically to monitor work activities when an Activity Risk exists for fire compliance. The Fire Patrol personnel shall regularly patrol the area on foot and monitor the area for any signs of fire or unsafe practices. They shall have no other duties and shall not be sitting in a vehicle or using a cell phone or computer except for emergency-related calls or for checking for Red Flag Warning or other fire hazard or weather conditions.
3. **Fire Season**: Fire season is no longer officially designated by the wildland fire agencies. Southern California is considered to be in fire season on a yearlong basis. CALFIRE adjusts their staffing patterns as fire conditions moderate or escalate and this can be used as an indicator of potential fire activity.
4. **Fire Tools**: Essential firefighting tools to be staged near work activities are a 46-inch round point shovel, Pulaski, McLeod, 5-gallon "Indian" Backpack hand pump or water fire extinguisher, and a minimum 10 pound 4A:80BC Dry Chemical Fire extinguisher.
5. **Incident Commander (IC)**: The Fanita Ranch Site Safety Officer will be the positively identified single point of contact for all utility resources (people and equipment) on an emergency incident. This person will interface with the Incident Command, as necessary.
6. **Incident Command System (ICS)**: The Incident Command System is "a systematic tool used for the command, control, and coordination of emergency response" according to the United States Federal Highway Administration. A more detailed definition of an ICS according to the United States Center for Excellence in Disaster Management & Humanitarian Assistance is "a set of personnel, policies, procedures, facilities, and equipment, integrated into a common organizational structure designed to improve emergency response operations of all types and complexities.
7. **Plan**: The Construction Fire Prevention Plan (CFPP).
8. **Red Flag Warning (RFW):** A Red Flag Warning is issued for a stated period of time by the National Weather Service using pre-determined criteria to identify particularly critical wildfire danger in a particular geographic area. All construction and maintenance activities that may result in heat or flame ignitions shall temporarily cease during RFWs, as defined herein.
9. **Site Safety Officer (SSO):** The Site Safety Officer or Fire Safety Coordinator serves as a liaison to the emergency service agencies and all contractors or inspectors on the jobsite for the utilities on emergency incidents and construction-related activities. The SSO has the authority to stop any project work that appears to pose a particular fire risk or hazard.

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1 Summary

This Construction Fire Prevention Plan (CFPP) provides basic direction for fire safety awareness on the Fanita Ranch Project site during construction. CFPPs do not anticipate every potential fire scenario that may occur during construction, but attempt to educate site personnel to the very real danger associated with fire ignitions. Fire ignitions can, if they involve site or off-site vegetation under certain weather conditions, develop into large scale wildfires that burn many acres and can threaten public and private assets. Therefore, this CFPP provides standard protocols and approaches for reducing the potential of ignitions for typical construction site activities. When employed, the concepts discussed herein will help minimize and avoid ignitions as well as extinguish any ignitions while they are small and controllable.

Note: as detailed in Section 8, this CFPP requires all site activities that may result in vegetation ignitions to cease during declared Red Flag Warning (RFW) periods. The National Weather Service may issue RFWs at any time when humidity and wind conditions meet pre-determined thresholds that would promote fire ignition and spread. Because the majority of acreage burned in California occurs during RFW weather conditions, all construction activities will be prohibited until the RFW has been lifted.

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2 Introduction

The Fanita Ranch Project (Project) is located along the northern portion of the City of Santee (City) in eastern San Diego County, California. The City is located approximately 18 miles east of downtown San Diego and the Pacific Ocean. Figure 1 illustrates the Proposed Project's regional location. The project site is north of State Route (SR) 52 and west of SR-67. Access to the project site during the construction phase will be provided from Fanita Parkway and Cuyamaca Street.

The following Construction Fire Prevention Plan (CFPP) has been prepared for the construction phase of the Fanita Ranch project site. The Project area is 2,638.1 acres of vacant land, of which approximately 987 acres are proposed for the development of a master-planned, residential community and the remaining acreage (1,651 acres) set aside as open space preserve. Development is clustered within three villages: Fanita Commons, Orchard Village, and Vineyard Village. At build-out, the Proposed Project would include single-family and multi-family residential, mixed-use, commercial uses, a public safety site, a school site, park and recreation facilities, and related water, sewer, electrical and roadway infrastructure necessary within a planned community. The Project lies within Township 15 South, Range 1 West in the southeastern portion of Section 8, central portion of Sections 17 and 20, northwestern portion of Sections 16 and 21, and portions of Sections 3, 4, 9 and 10 of the Poway, La Mesa, El Cajon, and San Vicente Reservoir U.S. Geographical Survey 7.5-minute quadrangle maps, respectively. The projects most southerly property boundary is approximately 0.2 miles north of Mast Blvd (See Figure 2 – Project Location Map).

The proposed project site is bordered on the east by residential development in the unincorporated San Diego County communities of Lakeside and Eucalyptus Hills and to the south by City of Santee residential neighborhoods. The East Elliott portion of Marine Corps Air Station Miramar and the Sycamore Landfill are located to the west of the Fanita Ranch site. The Proposed Project is bordered to the north by the County's Goodan Ranch regional Park and Sycamore Canyon Open Space Preserve.

The proposed project's surrounding topography varies including prominent ridgelines with large rock outcroppings and steeper hillsides to the east and north. The Fanita Ranch property is characterized by two primary drainages (Sycamore Canyon and Clark Canyon) and their associated sub-drainages. Both canyons intersect just outside the northwestern corner of the property and drain along its western boundary exiting the property into the Santee Recreational Lakes.

The project area is largely undisturbed and the dominant vegetation types are chaparral, grasslands, and Diegan coastal sage scrub. A number of dirt roads and trails crisscross the project site. Over the years, portions of the property have been used for various unauthorized land uses, including horseback riding, hiking, mountain biking, off-roading, motorcycling, and occasional dumping. Accessible areas on the property are fenced and gated to inhibit unauthorized vehicular use, although trespassing recreational uses continue.

On-site elevations range from 417 feet above mean sea level (AMSL) in the southeast corner of the property to 1,215 feet AMSL near the northeast corner of the property. The majority of the terrain is moderate and steep hillsides and ridges that separate the site's sub-drainages. Large rock outcroppings commonly occur throughout the property's slopes. The slopes and drainages are generally trending east to west and are in alignment trending with the extreme Santa Ana wind events, which can influence fire spread by creating wind-driven fires.

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0 4 8 Miles

FIGURE 1

Regional Location Map

Fanita Ranch Construction Fire Prevention Plan

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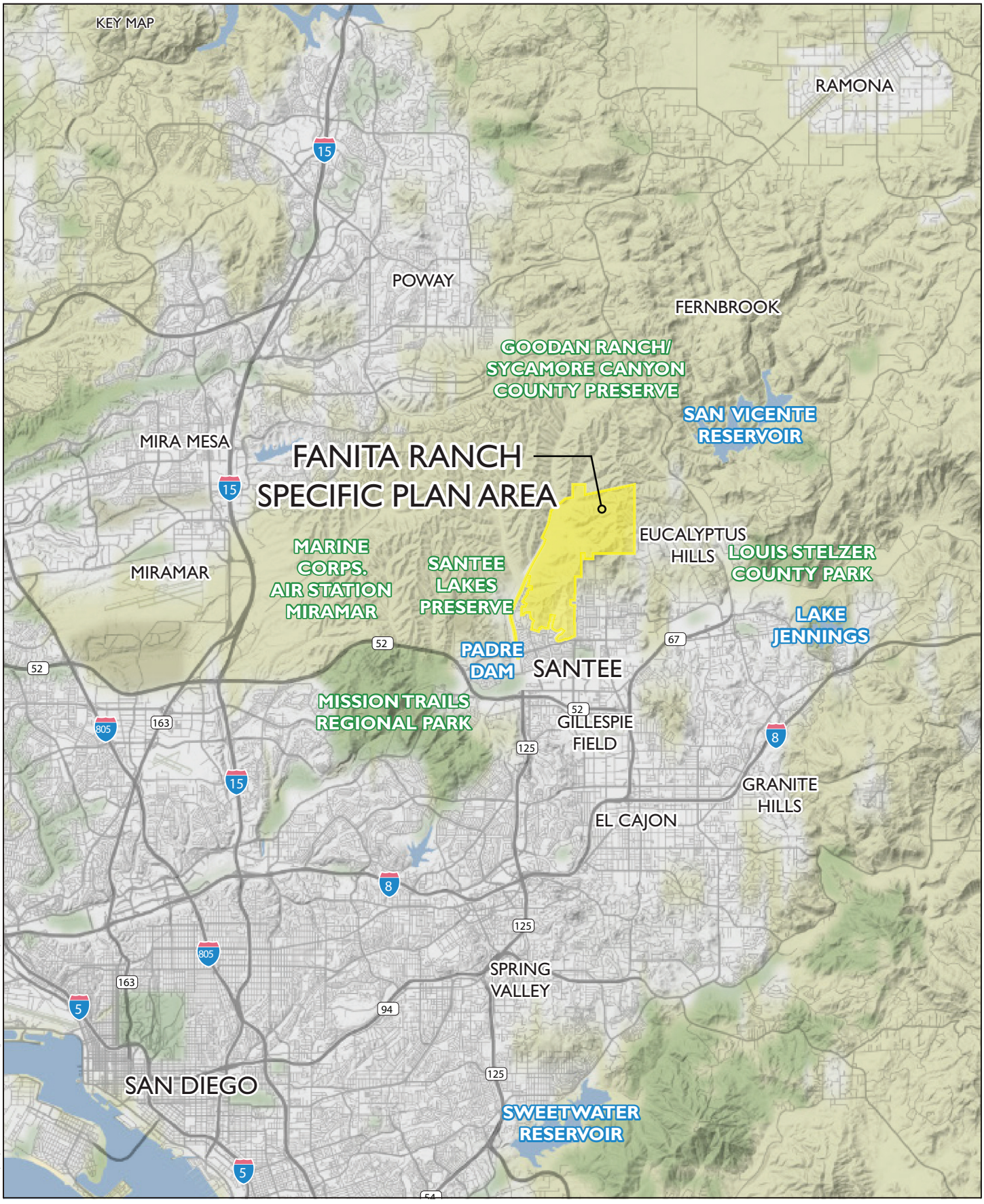

SOURCE: ESRI

FIGURE 2

Project Location Map

Fanita Ranch Construction Fire Prevention Plan

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3 Emergency Notification Procedures

Any fire event at or near the site will trigger the emergency notification procedures identified in this section. Fire reporting is critical for tracking where, when, how, and why fire ignitions occur and will help the fire agencies develop protocols for reducing their occurrence.

3.1 First Call = 9-1-1

Reporting fires and other emergencies: The first call should be to 9-1-1 so that appropriate apparatus can be dispatched.

The personnel in Table 1 are the primary site contacts to be notified during a fire emergency.

Table 1. Emergency Notification Primary Contacts

Name*	Position	Telephone Number*
TBD	Site Safety Officer	TBD
TBD	Site Manager	TBD
TBD	Project Manager	TBD
TBD	Project Engineer	TBD
TBD	Construction Supervisor	TBD

Note:

* Upon designation of each of the positions listed, the Names and contact numbers and emails shall be inserted into this table.

Technical Staff Contact: *Project contact information will be provided to local fire agencies/stations to assist responding firefighters during an emergency. A copy of this CFPP will be submitted to the responding fire agencies.*

The first call should be to 9-1-1 so that emergency responders can be dispatched. Travel times to the site require notification of 9-1-1 as early as possible after the fire or other emergency has been observed.

Emergency related contacts near the site include:

- Fire/Emergency Medical (City of Santee Fire Department)
- San Diego County Sheriff (Santee Office) – 619.956.4000
- California Highway Patrol (El Cajon Office) – 619.401.2000
- Hospital – Sharp Grossmont Hospital – 619.740.6000

To facilitate the arrival of fire services during construction, an emergency response meeting point will be established with the City of Santee Fire Department. The Site Safety Officer (SSO) or designee will meet the emergency response team at the meeting point, likely the Project's main entrance, to lead them into the site. The meeting point will be selected with fire agency input.

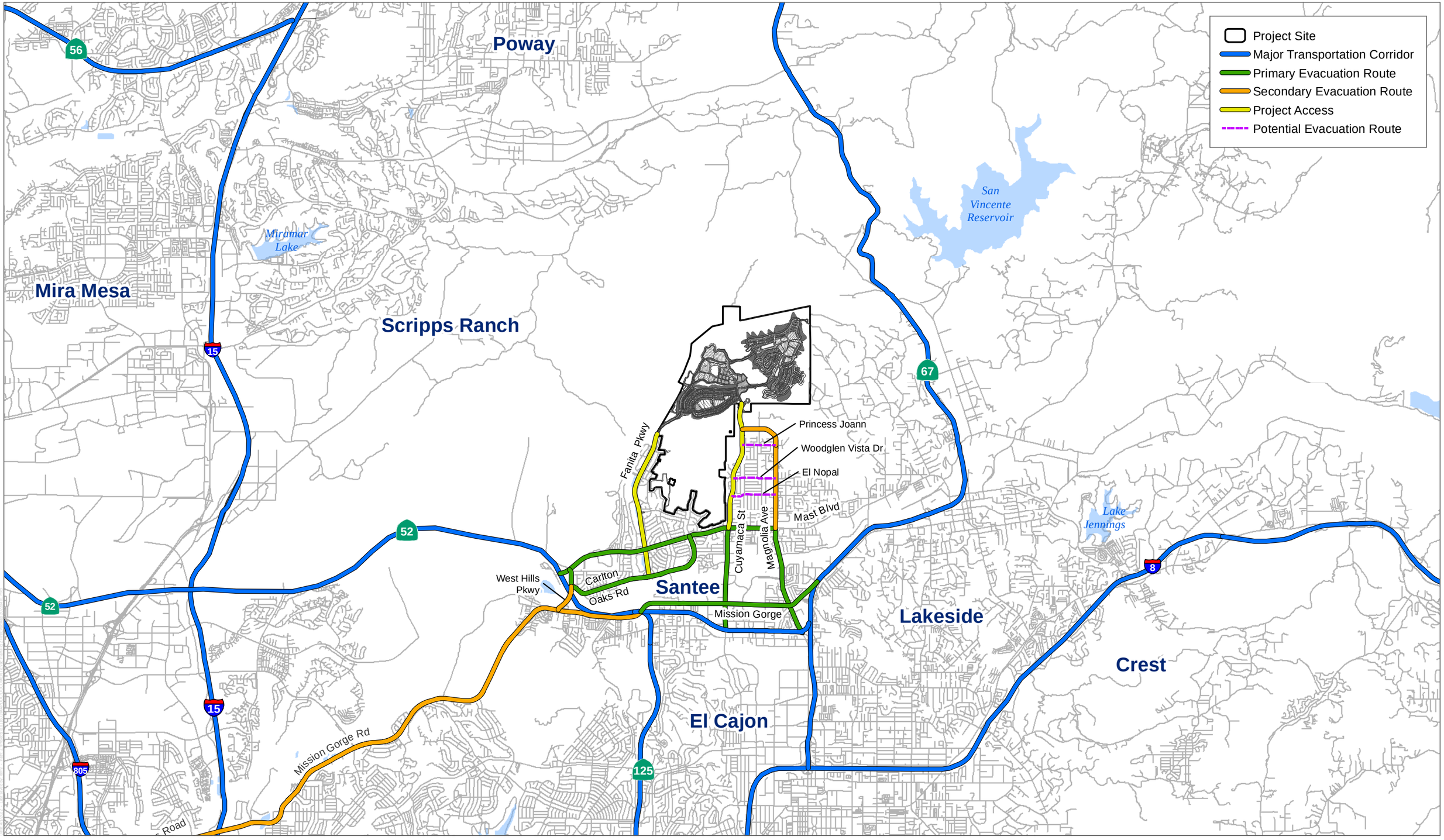
3.2 Evacuation Procedures

During significant emergency situations at or near the Project site, the site manager and/or SSO, in consultation with law or fire authorities, as possible, may issue an evacuation notice. When an evacuation has been called, all site employees will gather at a designated assembly area and the SSO will account for all personnel, as time allows. Once all employees are accounted for, or sooner if dictated by the emergency, the vehicles will safely convoy from the site to safe zones, which are generally areas off-site away from the threat. Should there still be persons within the site after the evacuation has been called, the SSO will send convened personnel off site to safe zones and the SSO and supervisors will perform a sweep of the project site to locate persons and reconvene at the assembly area. Once all personnel are accounted for, they will exit the site. Should a structure or wildland fire (or other emergency) occur that threatens the primary assembly area; other locations may be designated as secondary assembly areas by the SSO or supervisors, as dictated by the situation. The SSO and/or Site Supervisors should be prepared to be available to the Incident Commander (IC) throughout the Incident to facilitate information exchange.

3.2.1 Evacuation Routes

Depending on the type and severity of the emergency, along with weather and/or localized site conditions, roadways designated on Figure 3 will be used for evacuating the area. The primary site access and evacuation route to the west and south is via Fanita Parkway, interconnects with Mast Boulevard to the south. Mast Boulevard offers travel options to SR-52 east or west, or continuing south to West Hills Parkway, which intersects with Mission Gorge Road to the south and west and into the City of San Diego. Secondary site access and evacuation route to the south is on Cuyamaca Street, which provides two routes to the commercial-developed portions of Santee. The first evacuation route continues south to SR-52 with travel options to the east (City of Lakeside and SR-67) or to the west towards Interstate 15 (I-15). The second route would connect with Magnolia Avenue via Princess Joann Road. Magnolia Avenue continues south through residential developments to SR-67 north or south and SR-52 west.

The SSO and site managers are primarily responsible for evacuations. They will employ procedures to determine the emergency, talk with fire officials, as possible, and declare the emergency status. Foreman level supervisors shall assist in accounting for personnel.



SOURCE: SANDAG, 2017; HUNSAKER 2019

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0 3,550 7,100 Feet

FIGURE 2

Fire Evacuation Plan

Fanita Ranch Conceptual Wildland Fire Evacuation Plan

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4 Fanita Ranch Project Roles and Responsibilities

All employees should know how to prevent and respond to fires, and are responsible for adhering to policies regarding fire emergencies. In particular, the following sections detail general responsibilities, by position.

4.1 Project Owner/Management

A Final Environmental Impact Report, including a site specific Fire Protection Plan (FPP) to determine overall fire risk was prepared and approved for the Project. The Project is required to implement necessary measures to reduce the risk and comply with federal, state, and local fire safety/protection policies. Additionally, Site contractor supervisors will conduct necessary training and make equipment available to provide a safe working environment for employees and contractors.

4.2 Site Safety Officer

The SSO or a designated Site Fire Safety Coordinator will manage the Project's FPP and this CFPP and shall maintain all records pertaining to the plan. Among the other responsibilities of the SSO are:

- Understanding the CFPP and its mandates for training, fire prevention, fire suppression, and evacuation.
- Understanding the fire risk associated with the site and with activities that will occur on site.
- Developing and administering the fire prevention and safety training program.
- Ensuring that fire control equipment and systems are properly maintained and in good working condition.
- Monitoring combustibles on the site and managing where they are stored.
- Conducting fire safety surveys and making recommendations.
- Posting fire rules on the project bulletin board at the contractor's field office and areas visible to employees.
- Stopping project work activities that pose a fire hazard or are not in compliance with this CFPP.
- Reporting all fires ignited on the site, whether structural, vegetation, electrical, or other to SFD.

4.3 Supervisors

Supervisors are responsible for:

- Ensuring that employees receive appropriate fire safety training
- Notifying the SSO when changes in operation increase the risk of fire
- Enforcing fire prevention and protection policies
- Accounting for employees/contractors in the case of an evacuation
- Performing site sweeps to round up staff
- Facilitating fire agency access to the site
- Cooperating with the fire agencies/Incident Command during and following fires
- Identifying unsafe work practices that may lead to fire ignitions

4.4 Employees/Contractors

All employees and contractors shall:

- Complete all required training before working on site without supervision
- Conduct operations safely to limit the risk of fire
- Report potential fire hazards to their supervisors
- Follow fire emergency procedures
- Understand the emergency evacuation protocols

5 Fire Safety Plan Goals

The primary goals of this CFPP are to address the identified ignition sources and risks so that the personnel involved with constructing and final decommissioning of the Project have clearly defined protocols and procedures for reducing fire risk and maintaining a fire safe worksite. Among the goals developed for the Jacumba Solar Project site are:

- Prevent/minimize fires during construction, operation and decommissioning
- Provide a safe work-site for all employees, contractors, visitors and emergency personnel
- Prevent shock to emergency responders, workers, and unauthorized trespassers
- Prevent arcing or sparking, which could ignite vegetation on site
- Prevent or minimize dollar loss to the equipment
- Prevent or minimize potential for a fire starting on site to spread off site
- Provide water, appropriate fire extinguishers and access for firefighters
- Provide adequate signage and shut off devices to stop power feed into power lines in the event of a line failure, or fire in right of way
- Provide water trucks equipped with fire extinguishers, hoses, shovels, and Pulaski's when work involves the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and/or explosives.
- Provide the ability to report a fire or other emergency to 9-1-1 without delay and to make contact with internet websites and personnel
- Report all fire ignitions, regardless of size, to the SFD

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6 Site and Project Description

6.1 Location

The Project is located approximately 18 miles east of downtown San Diego and north of SR-52 (See Figure 1 – Regional Location Map). The Project Area is approximately 2,638 acres of vacant land, of which approximately 987 acres are proposed for the development of a master-planned, residential community and the remaining acreage (1,651 acres) set aside as open space preserve. The Project lies within Township 15 South, Range 1 West in the southeastern portion of Section 8, central portion of Sections 17 and 20, northwestern portion of Sections 16 and 21, and portions of Sections 3, 4, 9 and 10 of the Poway, La Mesa, El Cajon, and San Vicente Reservoir U.S. Geographical Survey 7.5-minute quadrangle maps, respectively. The projects most southerly property boundary is approximately 0.2 miles north of Mast Blvd (See Figure 2 – Project Location Map).

6.2 Vegetation

The proposed project footprint and preserve areas are currently undeveloped and are comprised of a variety of vegetation types that were mapped by Dudek biologists (2016). Vegetative fuels on site are primarily non-native grassland, chaparral, and coastal sage scrub, although smaller pockets of eucalyptus woodland, oak riparian forest, marsh, wetland, and ornamental vegetation types are present. The native vegetation is adapted to periodic wildfire events. 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 less flammable, but would burn under certain, more intense fire conditions.

Fire history information evaluated in relation to Fanita Ranch, as described in section 2.2.6 of the Fanita Ranch FPP, indicates that a majority of the site's vegetation last burned in 2003. As such, the property's vegetation is still considered in recovery, with younger plants and reduced fuel loading, but over time, without disturbance, would be expected to increase in biomass. Disturbed habitat and urban/developed land cover types are also present on site, although limited in overall occurrence.

The Proposed Project footprint would be converted to roads, structures, and maintained landscape vegetation. Native vegetative fuels allowed to remain within the outer thinning fuel modification zones and riparian areas would be modified as a result of development. The modification would include altering current densities, distributions, and species composition. The vegetation outside the Proposed Project's perimeter fuel modification zones are the primary wildfire concern for Fanita Ranch. These areas would be preserved as open space and would continue to be dominated by chamise-chaparral, southern mixed chaparral, Diegan coastal sage scrub, and non-native grassland fuel beds. The proposed project's fire protection features, including the code-exceeding fuel modification zones, were designed to be fire-hardened for the type of wildfire these areas could produce and provide a system of fire protection.

6.3 Project Description

The Fanita Ranch Project proposes a 987-acre master-planned community with phased development on the 2,638.1-acre Fanita Ranch property. The Proposed Project site is comprised of residential villages with approximately 2,949 residential units, a school site, commercial uses, agricultural uses, and park uses. The Fanita Ranch Project is comprised of three villages: Fanita Commons, Orchard Village, and Vineyard Village. The *Fanita Commons* would be located in the northwest portion of the project site. The *Orchard Village* is situated south of *Fanita Commons* and the *Vineyard Village* is located in the northeastern portion of the site. At build-out, the Proposed Project would include single-family and multi-family residential, mixed-use, commercial use, a public safety site, a school site, park and recreation facilities, and related water, sewer, electrical and roadway infrastructure necessary within a planned community. Accompanying infrastructure would consist of an internal road circulation system, water, sewer, and storm water drainage systems, and utilities. Public facilities and services and phase development would be coordinated so that services are available and ready to serve the residences as the need arises.

In addition to the residential, commercial, school and fire station sites, there would be community/neighborhood parks and pocket parks. The parks would include amenities such as open lawn areas, multi-use courts, picnic areas, and children's play areas. These parks would be distributed throughout each of the different villages to compliment the many miles of community trails, and large open space preserve areas.

The project would include an extensive trail system including roadside pathways, or "linear parks", multiuse trails through the community, and multiuse and rural trails through the open space area. Multiuse trails would include existing dirt trails, paved utility access ways, and new soft-surface trails. Existing dirt trails not used as part of the trail plan may be restored with native habitat revegetation. The project would include access points to trail systems to facilitate emergency response. Trails would be managed and maintained by the HOA or other approved entity.

The Proposed Project would be required to complete off-site improvements. Off-site roadway improvements include widening the existing two-lane Fanita Parkway to four lanes north of Mast Boulevard to Ganley. Two lanes would be provided from Ganley to Main Village and auxiliary lanes provided along the project frontage. The project proposes also providing a connection to Cuyamaca Street.

The project would preserve approximately 1,651 acres of land as permanent Habitat Preserve. This largely contiguous block of land is located in the northern and southern portion of the project area. Development in the Preserve would include recreational trails and utility maintenance access as required for existing infrastructure, which are largely in place as existing dirt roads. The Preserve would be managed and maintained per the Project's Sub-Area plan or applicable habitat management plan.

7 Project Specific Risk Summary

7.1 Fire Risk

Fire risks must be assessed based upon the potential frequency (probability of an incident occurring) and consequence (potential damage should an event occur). The evaluation of fire risks must take into account the frequency and severity of fires and other significant incidents. This includes common risks and heightened sources of risk.

Common risks that result in emergency calls include accidental injuries (residential, vehicle, other), medical related incidents including heart attacks, strokes and other serious conditions and illnesses, accidental vegetation fires, and occasional structure fires. The study area also includes a major transportation corridor risk category that has a higher occurrence rate than commonly realized in other areas. Vehicle related incidents along the SR-67 freeway, are likely to occur at higher levels in the Project area than in areas without a major freeway. Roadside fires are also a significant risk with spread into the adjacent wildlands possible.

Among the listed potential causes of fire incidents involving construction of a residential community that are relevant for this study are:

- Explosion/Arcs, arc flashing, electrical shorts, sparking, motor or other machinery fire, wiring and harnessing fire, overheated junction boxes, rodents chewing on wires and causing arcing, etc.
- Collapse of supporting structure causing electrical shorts and fire
- Overgrown vegetative fuel
- Equipment and supplies storage
- Trash cans, smoking areas, and other combustible storage around construction sites

The Project's fire risks are associated with the following:

7.1.1 Construction Phase Risks

- **Earth-moving equipment** – create sparks, heat sources, fuel or hydraulic leaks, etc.
- **Chainsaws** – may result in vegetation ignition from overheating, spark, fuel leak, etc.
- **Vehicles** – heated exhausts/catalytic converters in contact with vegetation may result in ignition
- **Welders** – open heat source may result in metallic spark coming into contact with vegetation
- **Wood chippers** – include flammable fuels and hydraulic fluid that may leak and spray onto vegetation with a hose failure
- **Compost piles** – large piles that are allowed to dry and are left on-site for extended periods may result in combustion and potential for embers landing in adjacent vegetation
- **Grinders** – sparks from grinding metal components may land on a receptive fuel bed
- **Torches** – heat source, open flame, and resulting heated metal shards may come in contact with vegetation

- **Dynamite/blasting** – if necessary, blasting may cause vegetation ignition from open flame, excessive heat or contact of heated material on dry vegetation
- **Other human-caused accidental ignitions** – ignitions related to discarded cigarettes, matches, temporary electrical connections, inappropriately placed generators, poor maintenance of equipment, and others.

Fire Prevention Measures for all Construction Activities:

- Minimize combustible and flammable materials storage on site.
- Store any combustible or flammable materials that need to be on site away from ignition sources.
- Clear parking areas shall be cleared of all grass and brush by a distance of at least 10 feet.
- Keep evacuation routes free of obstructions.
- Label all containers of potentially hazardous materials with their contents and stored in the same location as flammable or combustible liquids.
- Perform "hot work" according to fire safe practices in a controlled environment and with fire suppression equipment at the job site. A fire watch person (Fire Patrol), with extinguishing capability (e.g., fire extinguishers), should be in place for all 'Hot Work" activities during construction. Ensure hot work adheres to the guidelines provided.
- Dispose of combustible waste promptly and according to applicable laws and regulations.
- Report and repair all fuel leaks without delay.
- Do not overload circuits or rely on extension cords where other options would be safer.
- Turn off and unplug electrical equipment when not in use.
- Direct contractors on site to restrict use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to outside during RFW. When the above tools and equipment are used, water trucks (4,000 gallon capacity) equipped with hoses, shovels, Pulaski's, and McLeod's shall easily be accessible to personnel.
- Equip all construction-related vehicles with a 10 pound 4A:80 BC Dry Chemical Fire Extinguisher, a 5-gallon backpack pump or water fire extinguisher, a 46-inch round point shovel, and a first-aid kit.
- When an evacuation has been called, all site personnel will gather at the designated assembly area and the SSO will account for all personnel. Once all personnel are accounted for, the vehicles will safely convoy from the site to safe zones, which are generally areas off-site away from the threat.

7.1.2 Consultants and Contractor On-site Risk

Consultants and contractors should know how to prevent and respond to fires, and are responsible for adhering to Fanita Ranch's policies regarding fire emergencies. These general fire prevention measures should help in the efforts to prevent a fire from occurring while on-site.

Fire Prevention Measures for Consultants/Contractors:

- Vehicles equipped with fire prevention equipment:
  - 10 pound, 4A:80BC dry chemical fire extinguisher
  - 46-inch round point shovel

  - 5-gallons of water or a 5-gallon water backpack
  - First-aid kit
- No driving (cars, trucks, ATVs or similar) over unmaintained and dry vegetation.
- Vehicles can be parked a minimum of 10 feet from any vegetation as long as the vehicle is parked in an area devoid of any vegetation.
- Site activities limited during Red Flag Warning Weather periods; stay alert to fire and weather conditions and evacuate employees, if safe to do so.
- Consultants/Contractors will conduct operations safely to limit the risk of fire
- Hot Work shall adhere to the guidelines provided below in Section 7.5.
- During significant emergency situations, an evacuation notice may be issued by the site manager/supervisor or SSO. When an evacuation has been called, all consultant or contractor employees will gather at the designated assembly area and the SSO will account for all personnel. Once all employees are accounted for, the vehicles will safely convoy from the site to safe zones, which are generally areas off-site away from the threat.

7.2 Fanita Ranch Project Risk Rating

The estimated risk associated with the Fanita Ranch site is considered to be low to moderate during construction and decommissioning and low during operation, based on the successful application of FPP and CFPP fire risk reducing requirements.

The active construction phase results in higher potential for fires. Hot works, vegetation clearing, and other activities that may result in flame or heat sources can ignite vegetation, especially if non-native grasses have established and cured. Although there will be a potential for structural/equipment fires and wildfires, the risk is considered manageable as indicated by the low historic fire occurrence in similar development Projects.

7.3 Risk Reduction Measures

The following measures will be employed, as appropriate, during each phase of the project (construction, operation and maintenance and decommissioning) to reduce the risk of ignitions. These measures will be enforced through the SSO and ongoing worker safety training.

- Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees. This shall include all consultants, contractors and subcontractors if more than one.
- Fires ignited on site shall be immediately reported to SFD.
- The engineering, procurement, and construction contracts for the project shall clearly state the fire safety requirements that are the responsibility of any person who enters the site, as described in this CFPP.
- All internal combustion engines used at the Project site shall be equipped with spark arrestors that are in good working order.
- Once initial two-track roads have been cut, light trucks and cars shall be used only on roads where the roadway is cleared of vegetation. Mufflers on all cars and light trucks shall be maintained in good working order.

- During construction, the Project will be equipped with at least one and up to three water trucks each of 4,000 gallon capacity. Each truck will be equipped with 50 feet of 0.25-inch fast response hose w/fog nozzles. Any hose size greater than 1 ½" shall use National Hose (NH) couplings.
- A cache of shovels, McLeod's, and Pulaski's shall be available at staging sites. The amount of equipment will be determined by consultation between SSO and SFD. Additionally, on-site pickup trucks will be equipped with first-aid kits, fire extinguishers and shovels. Contractor vehicles will be required to include the same basic equipment.
- Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.
- The on-site contractor shall make an effort to restrict use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives during RFW conditions. When the above tools and equipment are used, water trucks equipped with hoses, shovels, McLeod and Pulaski shall be easily accessible to personnel.
- A fire watch (person responsible for monitoring for ignitions) will be provided during hot works and shall monitor for a minimum of 30 minutes following completion of the hot work activities.
- Smoking shall not be in wildland areas and within 50 feet of combustible materials storage, and shall be limited to paved areas or areas cleared of all vegetation.
- Each project construction site (if construction occurs simultaneously at various locations) shall be equipped with fire extinguishers and firefighting equipment sufficient to extinguish small fires.
- The on-site contractor or Project staff shall coordinate with the SFD to create a training component for emergency first responders to prepare for specialized emergency incidents that may occur at the Project site.
- Construction workers at the site shall receive training on the proper use of firefighting equipment and procedures to be followed in the event of a fire. Training records shall be maintained and be available for review by the SFD.

7.4 Daily Fire Prevention Measures

To limit the risk of fires, all site staff, employees, and contractors shall take the following precautions:

- Fire safety shall be a component of daily tailgate meetings. Foremen will remind employees of fire safety, prevention, and emergency protocols on a daily basis.
- No Smoking will be allowed on site except in designated safe smoking areas which include cleared area with no combustible vegetation or materials and approved butt receptacles (noncombustible containment of cigarette butts). Smoking inside closed vehicles at the site may be allowed in designated areas away from vegetation, at the discretion of the SSO.
- Combustible materials will be stored in areas away from native vegetation. Whenever combustibles are being stored in the open air, the SSO shall be informed of the situation.
- Evacuation routes shall be maintained free of obstructions. Unavoidable evacuation route blockages shall be coordinated such that a secondary route is identified and available.
- Disposal of combustible waste in accordance with all applicable laws and regulations.
- Use and store flammable materials in areas away from ignition sources.

- Proper storage of chemicals, such that incompatible (i.e., chemically reactive) substances would be separated appropriately, shall be required.
- Performance of hot work (i.e., welding or working with an open flame or other ignition sources) in controlled areas under the supervision of a fire watch shall be required. Hot work permits are required and will be reviewed and granted by the SSO for all hot work.
- Equipment shall be kept in good working order by inspecting electrical wiring and appliances regularly and maintaining motors and tools free of excessive dust and grease.
- Immediate reporting of fuel or petroleum leaks shall be required. The site mechanic shall ensure that all leaks are repaired immediately upon notification.
- Immediate repair and cleanup of flammable liquid leaks shall be required.
- Extension cords shall not be relied on if wiring improvements are needed, and overloading of circuits with multiple pieces of equipment shall be prohibited.
- Turning off and unplugging electrical equipment when not in use.

7.4.1 Fire Prevention/Protection System Maintenance

The SSO (or trained specialist, when necessary) will ensure that fire suppression and related equipment is maintained according to manufacturers' specifications. National Fire Protection Association (NFPA) guidelines shall be implemented for specific equipment.

The following equipment is subject to ongoing maintenance, inspection, and testing procedures:

- Portable fire extinguishers;
- Fire alarm and suppression systems;
- Water trucks and associated equipment; and
- Emergency backup generators/systems and the equipment they support.

7.5 Hot Work

These requirements are primarily from California Fire Code (CFC) Chapter 26, Welding and other Hot Work, and NFPA 51B, Fire Prevention During Welding, Cutting and other Hot Work. Hot work is defined in the CFC as operations involving cutting, welding, thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, or other similar operations. Hot work areas are defined as the areas exposed to sparks, hot slag, radiant heat, or convective heat because of the hot work.

A Hot Work Permit shall be obtained for all hot work regardless of location from the SSO, following guidelines from the SFD. The SSO will require hot work to be done per requirements in NFPA 51B and the CFC Chapter 26.

Hot work shall only be done in fire safe areas designated by the SSO and shall comply with the following:

- All personnel involved in Hot Work shall be trained in safe operation of the equipment by the SSO. This will include providing training at “tailgate safety meetings”. They shall also be made aware of the risks involved and emergency procedures, such as how to transmit an alarm and who is responsible to call 9-1-1.

- Signage required in areas where workers may enter indicating “Caution; Hot Work in progress; Stay Clear” would be posted on site.
- Hot work would not be done on any containers which contain or have contained flammable liquids, gases, or solids until containers have been thoroughly cleaned, purged, or inerted.
- A dry chemical fire extinguisher with a minimum rating of 4A:80BC, a 5-gallon backpack pump or water fire extinguisher, and a 46-inch round point shovel, shall be readily accessible within 25 feet of hot work area.
- The safety manager shall inspect the hot work area before issuing a permit and shall then make daily inspections.
- Welding and cutting would comply with 2016 CFC) Chapter 35- welding and Hot Work.
- Electric arc hot work would comply with CFC Chapter 35.
- Piping manifolds and Hose Systems for Fuel Gases and Oxygen would comply with CFC Section 3509.
- Cylinder use and storage shall comply with 2016 CFC Chapter 53, “Compressed Gases.”
- Equipment would be approved by SFD, including torches, manifolds, regulators, or pressure reducing valves, and any acetylene generators.
- Personal Protective Clothing would be selected to minimize the potential for ignition, burning, trapping hot sparks, and electric shock.
- A fire watch will be in place for a minimum of 30 minutes, or longer as considered necessary by the SSO, following any hot work.
- Any ignitions would be immediately extinguished (as possible) by site personnel and the fire department would be notified of the incident.

The SSO shall have the responsibility to assure safe Hot Work operations, and shall have the authority to modify hot work activities associated with construction and/ maintenance activities, and to exceed the requirements in NFPA 51B and 2016 CFC, to the degree necessary to prevent fire ignition. Workers must be trained on the hot work information and criteria in this CFPP.

8 Red Flag Warning Protocol

Red Flag Warnings are issued by the National Weather Service and indicate that conditions are such (low humidity, high winds) that wildfire ignitions and spread may be facilitated. To ensure compliance with Red Flag Warnings restrictions, the National Weather Service website would be monitored at the site (http://www.srh.noaa.gov/ridge2/fire/briefing.php). During Red Flag Warnings, construction-related activities would be limited and precautions may be taken on site during periods of a Red Flag Warning, when conditions such as low humidity and high winds are present. Upon announcement of a Red Flag Warning, red flags will be prominently displayed at the entrance gate and main office, indicating to employees and contractors that restrictions are in place. Any hot work (work that could result in ignition sources or increase fire risk), grading, or any other work that could result in heat, flame, sparks, or may cause an ignition to vegetation would be prohibited during Red Flag Warning conditions. Project areas may be evacuated where personnel may be exposed to higher risks. If vehicles are required to be used during Red Flag Warning conditions, vehicles shall remain only on designated access roads on the site.

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9 Fire Safety Briefings, Inspections, and Training

9.1 Briefings and Inspections

The SSO would conduct routine, unannounced inspections a minimum of once, weekly. The SSO would develop an inspection check list to document these inspections.

Prior to Project construction, Project personnel would receive training on the contents of this CFPP, along with additional fire safety and fire prevention information provided by an informed SSO (or designee). As possible, firefighters from SFD will attend these meetings and provide input, which has a dual benefit of informing site personnel and providing Project familiarity for the firefighters.

Site supervisors/foremen will be responsible for sharing CFPP content with consultants and construction personnel throughout the duration of the Project. A review of the content of this CFPP would take place at a formal safety briefing at a minimum of once per month.

Each daily safety tailgate session should include an assessment of the day's fire-related risks or hazards and the mitigation for each.

Compliance, including monitoring compliance, with this CFPP is mandatory. All levels of project management have the authority to shut down any operation that presents an inappropriate amount of fire risk or hazard until it can be properly mitigated.

Violations of any of the requirements of this CFPP would be addressed by the SSO or other supervisory personnel, immediately. Appropriate consequences for repeated or serious negligence in respect to this CFPP would be dealt with accordingly. All Project-related vegetation fires, regardless of size, shall be promptly reported to the SSO and SFD to determine if appropriate mitigation measures are being taken.

9.2 Training Requirements

9.2.1 Basic Fire Safety Training

The SSO and or site supervisors/foremen would present basic fire prevention training to employees upon employment, and shall maintain documentation of the training, which includes the following:

- The Project-specific FPP
- Review of the Occupational Safety and Health Administration (OSHA)Fire Protection and Prevention (29 CFR 1926.24)
- Proper response and notification in the event of a fire;
- Instruction on the use of portable fire extinguishers (as determined by company policy in the Emergency Action Plan), and hand tools, such as shovels, and recognition of potential fire hazards.

The SSO would train persons entering the site on the fire hazards associated with the specific materials and processes to which they are exposed, and will maintain documentation of the training. Employees would receive this training at the following times:

- Upon first entering the facility
- Annually during a pre-planned meeting
- When changes in work processes necessitate additional training

Upon returning to the site after having been gone longer than 90 days

9.2.2 Site Supervisor Fire Safety Training

Prior to Project construction, site supervisors would receive a minimum of 1 hour training on wildland fire prevention and safety. This training would be provided by the SSO or qualified designee. This training would then be shared with all construction personnel by the site supervisor or the SSO.

Each site supervisor would be trained on the following:

- Fire reporting
- Extinguishing small fires in order to prevent them from growing into more serious threats.
- Fire prevention
- Identifying work activities that may result in a fire hazard

9.2.3 Communication

The ability to communicate with personnel working on the Project site is mandatory. Construction crews would be required to have a cell phone or satellite phone, and/or radios that are operational within the area of work to report an emergency. Contact information for lead construction personnel would be provided to respective agencies. Communication pathways and equipment would be tested and confirmed operational each day prior to initiating construction activities. Fires and medical emergencies would be immediately reported to SFD via 9-1-1.

Each on-site worker would carry at all times a laminated, CFPP card listing 24-hour contact information, including telephone numbers for reporting an emergency and immediate steps to take if an incident occurs. Information on the CFPP card would be updated as needed and redistributed to all workers before the initiation of any construction activities. The Project's compliance monitor would provide the CFPP cards to the site's SSO prior to construction kick-off so that all site staff can be provided training and receive their cards.

10 Project Personnel Fire Fighting Limitations

Responding to fires at the Project site, whether structural, wildland, or other, is the responsibility of SFD. Because their response to the site may require several minutes or more, Project employees and contractors should provide only initial firefighting efforts, and only if they have had appropriate training. No employee shall fight a fire beyond the incipient stage and the arrival of professional fire suppression personnel. Involvement in firefighting is voluntary and should only be attempted by trained, qualified individuals.

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11 Review and Approval

The signatory reviewing officials are acknowledging that HomeFed Corp. (applicant) has established a CFPP, which when properly implemented, maintained, and enforced will result in fire hazard and risk reduction for the Project's construction phase. Reviewing agencies do not accept any responsibility for the applicant's interpretation or implementation of this CFPP prior to, during, or following the construction of the Project or for any resulting actions associated with these activities.

Reviewed by:

_____	_____
HomeFed Corp. Site Safety Officer	Date
_____	_____
Santee Fire Department	Date

Approved by:

_____	_____
HomeFed Corp. Project Manager	Date

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Appendix A

Selected Fire Safety Regulations, Guidelines, and Standards

Appendix A
Selected Fire Safety Regulations, Guidelines, and Standards

The primary regulations related to fire at the Fanita Ranch construction facility are summarized below. Other regulations on energy producing and transmission facilities/operations may apply, but are not included herein as they are not related specifically to fire safety.

Federal and Other Regulations/Guidelines

- **NFPA 10, Fire Extinguishers**: A long-standing standard, which specifies the types, sizes, rating, and locations for portable fire extinguishers. It also provides information on how to calculate the number and size of portable fire extinguishers needed.
- **NFPA 22, Standard for Water Tanks for Private Fire Protection**: Provides recommendations for the design, construction, and installation of water storage tanks for private fire protection systems.
- **NFPA 30, Flammable and Combustible Liquids Code**: This standard provides recommendations for storage, use, and handling of flammable and combustible liquids. It provides detailed information regarding tank storage, spacing, dispensing of liquids, portable containers, and other related operations. NFPA 30 is referenced by the California Fire Code.
- **NFPA 70, National Electrical Code**: NFPA 70 is the standard for the design and installation of electrical systems. It includes recommendations for various types of occupancies and also provides recommendations and criteria for the location and installation of "explosion proof" electrical systems.
- **NFPA 72, National Fire Alarm and Signaling Code**: NFPA 72 is the standard for the design, installation, and operation of fire alarm systems in various occupancies. This standard is used by fire alarm system designers when designing and installing a system. It is utilized also by fire agencies when reviewing plans for new systems.
- **NFPA 497, Classification of Flammable Liquids, Gases, and Vapors, and for Electrical Area Installations in Chemical Process Areas:** NFPA 497 is the standard, which is utilized along with NFPA 70 to determine flammable gas, flammable liquid, and combustible liquid hazards and to recommend the areas that require explosion-proof electrical systems. It also sets forth the extent of the classified areas. Although the title says chemical process areas, it is used as a standard for explosion-proof electrical as it defines various risks and contains numerous diagrams to help the electrical system designer.

California Public Utilities Commission General Order 95: Rules for Overhead Transmission Line Construction

General Order 95 was initially adopted in 1941 and was most recently updated in 2009 for Southern California (http://162.15.7.24/PUBLISHED/Graphics/112890.PDF). General Order 95 governs the design, construction, and maintenance of overhead electrical lines. Rule 31.1 generally states that design, construction, and maintenance of overhead electrical lines should be done in accordance with accepted good practices for the given location conditions known at the time by the persons responsible for the design, construction, and maintenance of the overhead electrical lines and equipment. Rule 35 of General Order 95 (Tree Trimming) requires the following:

- 4 feet radial clearances for any conductor of a line operating at 2,400 volts or more, but less than 72,000 volts
- 6 feet radial clearances for any conductor of a line operating at 72,000 volts or more, but less than 110,000 volts
- 10 feet radial clearances for any conductor of a line operating at 110,000 volts or more, but less than 300,000 volts (this would apply to the project)
- 15 feet radial clearances for any conductor of a line operating at 300,000 volts or more.

Under California Public Utilities Code Section 1708.5, interested persons are permitted to petition the CPUC to adopt, amend, or repeal a regulation. In response to the 2007 wildfires in San Diego County, on November 6, 2007, SDG&E submitted a petition to the CPUC requesting that the CPUC issues an Order Instituting Rulemaking to determine whether General Order 95 should be amended or if more rules should be adopted to address disaster preparedness, including damage from Santa Ana wind-driven firestorms (CPUC and BLM 2008a). The petition requested that the CPUC consider several items, including the following:

- Operating rural electrical lines differently during severe fire weather
- Mitigating potential hazards associated with rural lines including undergrounding line, using steel poles in place of wood, and shortening spans between poles
- Better coordinating disaster management efforts among agencies, municipalities, local jurisdictions, and utilities
- Maintaining electrical line rights-of-way (ROWs) free of vegetation
- Adopting a state-wide Disaster Management Plan.

California Department of Forestry and Fire Protection (CAL FIRE)

Public Resource Code 4291 requires a reduction of fire hazards around buildings, requiring 100 feet of vegetation management around all buildings, and is the primary mechanism for conducting fire prevention activities on private property within CAL FIRE jurisdiction.

Public Resources Code 4292 states a that a minimum firebreak of 10 feet in all directions from the outer circumference of such pole or tower be established around any pole which supports a switch, transformer, lightning arrester, line junction, or end or corner pole. All vegetation shall be cleared within the firebreak.

Public Resources Code 4293 establishes the minimum vegetation clearance distances (between vegetation and energized conductors) required for overhead transmission line construction. Minimum clearances are discussed as follows:

- A minimum radial clearance of 4 feet shall be established for any conductor of a line operating at 2,400 or more volts but less than 72,000 volts.
- A minimum radial clearance of 6 feet shall be established for any conductor of a line operating at 72,000 or more volts but less than 110,000 volts.
- A minimum radial clearance of 10 feet shall be established for any conductor of a line operating at 110,000 or more volts but less than 300,000 volts.
- A minimum radial clearance of 15 feet shall be established for any conductor of a line operating at 300,000 or more volts.

Specific requirements applicable to the construction and operation of the Proposed Project include those from Public Resources Code, Division 4, Chapter 6:

Section 4427 – Operation of fire-causing equipment

Section 4428 – Use of hydrocarbon-powered engines near forest, brush, or grass-covered lands without maintaining firefighting tools

Section 4431 – Gasoline-powered saws, etc.; firefighting tools

Section 4442 – Spark arrestors of fire prevention measures, requirements, exemptions.

California Code of Regulations Title 14 Section, Sections 1252, 1253, and 1254

CCR Title 14 Sections 1252 and 1253 state that in San Diego County, power line hazard reduction standards are applicable year round. Power lines reduction strategies includes pole brush clearing and in southeastern San Diego County, and CAL FIRE is responsible for inspecting local implementation of these strategies.

CCR Title 14 Section 1254 states that the fire break minimum clearance requirements of California Public Resources Code 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached. The radius of the cylindroid is 3.1 meters (10 feet) measured horizontally from the outer circumference of the specified pole or tower with height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid with the ground to an intersection with a horizontal plane passing through the highest point at which a conductor is

attached to such pole of tower. Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows:

- At ground level: remove flammable materials, including but not limited to, ground liter, duff, and dead or desiccated vegetation that will allow fire to spread
- From 0–2.4 meters (0–8 feet) above ground level: remove flammable trash, debris, or other materials, including grass, herbaceous, and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 2.4 meters (8 feet)
- From 2.2 meters (8 feet) to horizontal plane of highest point of conductor attachment: remove dead, diseased, or dying limbs and foliage from living sound trees and any dead, diseased, or dying trees in their entirety.

Appendix I

Ignition Resistance Construction Requirements (CBC Chapter 7A)

As of the date of this fire protection plan, the following are the requirements for ignition resistant construction for The Proposed Project, including requirements under Chapter 7A of the California Building Code (CBC). In addition, exterior building construction including roofs, eaves, exterior walls, doors, windows, decks, and other attachments must meet the most current CBC Chapter 7A ignition resistance requirements at the time of building permit application.

1. All structures will be built with a Class A roof assembly, including a Class A roof covering. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.
2. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be fire stopped with approved materials or have one layer of minimum 72 pound mineral-surfaced non-perforated cap sheet complying with ASTM D 3909 installed over the combustible decking. However, openings on barrel tiles or similar roof coverings, must be fire stopped (bird stopped) with approved materials to prevent the accumulation of debris, bird nests, etc. between the tiles and decking material.
3. When provided, exposed valley flashings shall be not less than 0.019-inch (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of minimum 72 pound mineral-surfaced non-perforated cap sheet complying with ASTM D 3909 running the full length of the valley.
4. All rain gutters, down spouts and gutter hardware shall be constructed from metal or other non-combustible material to prevent wildfire ignition along eave assemblies.
5. All chimney, flue or stovepipe openings attached to a fireplace, stove, or other solid or liquid fuel burning equipment or device shall be equipped with an approved spark arrester. An approved spark arrester is defined as a device intended to prevent sparks from escaping into the atmosphere and constructed of nonflammable materials, having a 12-gauge minimum thicknesses with openings no greater than ½ inch, or other alternative material the Fontana Fire Protection District determines to provide equal or better protection. It shall be installed to be visible for the purposes of inspection and maintenance.
6. The exterior surface materials shall be non-combustible, including hard or ignition resistant, such as stucco. In all construction, exterior walls shall extend from the top of the foundation to the roof and terminate at 2-inch nominal solid blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.
7. All eaves, fascias, and soffits will be enclosed (boxed) with non-combustible materials. This shall apply to the entire perimeter of each structure. Eaves of heavy timber construction are not required to be enclosed as long as attic venting is not installed in the eaves. For the purposes of this section, heavy timber construction shall consist of a minimum of 4"x 6" rafter tails.
8. Paper-faced insulation shall be prohibited in attics or ventilated spaces.
9. Automatic interior fire sprinklers for single-family residences shall be installed according to the National Fire Protection Association (NFPA) 13D 2013 edition - *Standard for the Installation of Sprinkler Systems in One and Two-family Homes and Manufactured Homes*.
10. Roof vents, dormer vents, gable vents, foundation ventilation openings, ventilation openings in vertical walls, or other similar ventilation openings shall be louvered and covered with 1/8-inch, noncombustible, corrosion-resistant metal mesh or other approved material that offers equivalent protection. Turbine attic vents shall be prohibited.
    - Specialized vents with baffle systems or other methods to catch burning embers, such as Brandguard (www.brandguardvents.com) or approved equivalent shall be considered by the San Diego County Fire Authority and Building Official for all structure vents on all homes/garages in the Proposed Project.

11. Attic or foundation ventilation louvers or ventilation openings in vertical walls shall not exceed 144 square inches per opening and shall be covered with 1/8" inch mesh corrosion-resistant metal screen or other approved material that offers equivalent protection. Ventilation louvers and openings may be incorporated as part of access assemblies.
12. No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.
13. All fences and gate assemblies (fences, gates, and fence posts) attached or within five feet of a structure shall be of non-combustible material or pressure-treated exterior fire-retardant wood.
14. All projections (exterior balconies, decks, patio covers, unenclosed roofs and floors, and similar architectural appendages and projections) or structures less than five feet from a building shall be of non-combustible material, one-hour fire resistive construction on the underside, heavy timber construction, pressure-treated exterior fire- retardant wood or ignition resistant construction. When such appendages and projections are attached to exterior fire- resistive walls, they shall be constructed to maintain same fire-resistant standards as the exterior walls of the structure.
15. Accessory structures attached to buildings with habitable spaces and projections shall be in accordance with Chapter 7A of the CBC.
16. Detached accessory structures located less than 50 feet from a building containing habitable space shall be constructed in accordance with Chapter 7A of the CBC.
    - ***Exception:*** *Accessory structures less than 120 square feet in floor area located at least 30 feet from a building containing a habitable space.*
17. Exterior doors shall be approved non-combustible construction, solid core wood and shall conform to the performance requirements of standard SFM 12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 1⅜ inches thick with interior field panel thickness no less than 1¼ inches thick, or shall have a fire-resistance rating of not less than 20 minutes when tested according to National Fire Protection Association (NFPA) 252.
18. All glass or other transparent, translucent or opaque glazing materials, that is used in exterior windows, including skylights, or exterior glazed door assemblies shall be constructed of multipane glazing with one tempered pane meeting the requirements of Section 2406 (2013 CBC) Safety Glazing. .
19. Vinyl window assemblies are deemed acceptable if the windows have the following characteristics:
    - Frame and sash are comprised of vinyl material with welded corners
    - Metal reinforcements in the interlock area
    - Glazed with insulating glass, annealed or tempered (one layer of which must be tempered glass).
    - Frame and sash profiles are certified in AAMA Lineal Certification Program.
    - Certified and labeled to ANSI/AAMA/NWWDA 101/LS2-97 for Structural Requirements.