Appendix N
Fire Protection Plan

Fire Protection Plan

Pacific Project

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AMSL	Above Mean Sea Level
APN	Assessor's Parcel Number
BTU	British Thermal Unit
CAL FIRE	California Department of Forestry and Fire Protection
CBC	California Building Code
CC&Rs	Covenants, Conditions and Restrictions
CFC	California Fire Code
FAHJ	Fire Authority Having Jurisdiction
FMZ	Fuel Modification Zone
FPP	Fire Protection Plan
FRAP	Fire and Resource Assessment Program
GIS	Geographic Information Systems
HOA	Homeowner's Association
ISO	Insurance Service Office
MPH	miles per hour
NFPA	National Fire Protection Association
Project	Pacific Project
SMFD	San Marcos Fire Department
SRA	State Responsibility Area
USGS	United States Geological Survey
VWD	Vallecitos Water District
VFD	Vista Fire Department
VHFHSZ	Very High Fire Hazard Severity Zone
WRCC	Western Regional Climate Center
WUI	Wildland Urban Interface

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Executive Summary

The Pacific Project proposes the development of 449 residential units, including a mix of apartments, rowhomes, villas, and affordable flats on approximately 15.09 acres of the 33.2-acre project site. The proposed residential units would include a mix of apartments with a five-story podium building, three-story rowhomes, three-story villas, and affordable flats within a four-story building. The project includes a total of 927 parking spaces and 134,985 square feet of common open space area. 68 of the 449 total units (15% of the total) would be designated as deed-restricted affordable units. The approximately 33.2-acre Project site is an infill site located in the western portion of the City of San Marcos (City), at the northwest corner of S. Las Posas Road and Linda Vista Drive, comprised of Assessor's Parcel Numbers (APNs) 219-222-01, 219-222-02, 219-222-03, and 219-222-04. La Mirada Road abuts the site's northern boundary, while South Pacific Street abuts the property's western boundary. The Project complies with Fire Code standards for private road widths and requests acceptance by SMFD for several dead-end streets that exceed 150 feet without a turnaround.

The Project site is located directly across from the Grand Plaza shopping center on S. Las Posas Road. Light industrial uses are adjacent to the Project site's northern, southern, and western boundary, and Bradley Park is located across from the Project site's southwestern corner. Single- and multi-family residential uses are located to the west and south of Bradley Park. The Project site is relatively flat, ranging in elevation from approximately 527 feet above mean sea level (amsl) in the southeast portion of the project area to 551 feet in the northwest corner of the Project site. The Project is located in an area that is highly urbanized.

The Pacific Project property lies within an area considered a Non-High Hazard Severity Zone, as designated by the City of San Marcos and the California Department of Forestry and Fire Protection (CAL FIRE). Fire hazard designations are based on topography, vegetation, and weather, amongst other factors. The Project site is within a developed City landscape, surrounded by urban land uses on all sides. The Project site is not considered by Dudek to meet the definitions of wildland given its urban location. Further, the site currently, and post-project, would not represent a significant wildfire hazard based on the flat terrain, fuel types, including low growing vegetation and vernal pools, which by definition, preclude the growth of heavier fuel types that could, over time, present a wildfire threat.

The Project site is within the jurisdiction of the San Marcos Fire Department (SMFD). The SMFD operates two fire stations that could respond to an incident on the Project site, including Station Nos. 1 and 2, with additional response from Vista Fire Department (VFD) Station 4, if necessary. Total response time to the Project site is expected to be less than 7 minutes from Station No. 2, given its location less than 5.0 miles from the Project site. SMFD Station No. 1 & VFD Station 4 will respond to an incident on the Project site only if necessary. Therefore, emergencies within the Project site would conform to SMFD's emergency response standard for first units (average maximum initial response of no more than 8 minutes for fire apparatus and 9 minutes for ambulance, 90% of calls). In addition, automatic/mutual aid agreements are in place with all surrounding communities and have been recently improved through the implementation of a computer-aided dispatch system.

1 Introduction

This Fire Protection Plan (FPP) has been prepared for the Pacific Project in San Marcos, California. The purpose of this plan is to generate and memorialize the fire safety requirements of the Fire Authority Having Jurisdiction (FAHJ), namely the San Marcos Fire Department (SMFD). Requirements are based on site-specific characteristics and incorporate input from the Project's developer/applicant, Project planners, engineers, and architects, as well as SMFD.

As part of the assessment, the plan has considered the property location and its topography, surrounding urban land uses, climatic conditions, fire history, and the proposed land use. The plan addresses water supply, access (including secondary/emergency access where applicable), structural ignitability and ignition resistive building features, fire protection systems and equipment, and impacts to existing emergency services. The FPP recommends measures that developers/builders will take to reduce the probability of structural ignition throughout the Project.

The following tasks were performed as part of the analysis conducted for this plan:

- Gather site-specific climate, terrain, and fuel data;
- Collect site photographs;
- Process and analyze the data using the latest GIS technology;
- Analyze and guide the design of proposed infrastructure;
- Analyze the existing emergency response capabilities;
- Assess the risk associated with the Project and the Project site; and
- Prepare FPP report documenting the site's fire safety.

Field observations were utilized to augment existing digital site data in formulating the recommendations presented in this FPP. Refer to Appendix A for site photographs of existing site conditions.

This FPP is consistent with the City of San Marcos Municipal Code (Chapter 17.64- Fire Code). Further, the FPP is consistent with the California Code of Regulations Titles 14 and 24, the 2019 California Fire Code (CFC), and 2019 California Building Code (Chapter 7A).

1.1 Project Summary

1.1.1 Location

The approximately 33.2-acre Project site is an infill site located in the western portion of the City of San Marcos (City), at the northwest corner of S. Las Posas Road and Linda Vista Drive, comprised of Assessor's Parcel Numbers (APNs) 219-222-01, 219-222-02, 219-222-03, and 219-222-04. La Mirada Road abuts the Project site's northern boundary, while Pacific Street abuts the property's western boundary. The Grand Plaza shopping center is located directly across S. Las Posas Road. Light industrial uses are adjacent to the Project site's northern, southern, and western boundary, and Bradley Park is located across from the site's southwestern corner. Single- and multi-family residential uses are located to the west and south of Bradley Park. The Project location is depicted in Figure 1, Project Vicinity.

The entirety of the Pacific property lies within the local responsibility area (LRA) as a Non-Very High Fire Hazard Severity Zone (Non-VHFHSZ) by CAL FIRE (Figure 2, Fire Hazard Severity Zone Map).

1.1.2 Current On-site and Surrounding Land Use

The Project site is located in an urban setting and is considered an infill site. The Project site is currently vacant and has no existing impervious areas. The Project site surface conditions generally consist of rolling unimproved earthen terrain, with native grasses and vegetation. The Project site is immediately bordered by S. Las Posas Road to the east, Linda Vista Drive to the south, La Mirada Road along the northern boundary and Pacific Street abuts the property's western boundary.

Surrounding land uses include industrial uses to the north, south, and west, and commercial uses to the east, specifically the Grand Plaza shopping center is located directly across S. Las Posas Road. The 24-acre Bradley Park is located across from the Project site's southwestern corner. Residential uses are located to the south and west of Bradley Park. Surrounding land uses outside of the immediately adjacent industrial and commercial land uses include designated parks, single and multi-family residential, and schools/educational facilities. The closest freeway is State Route 78 located approximately 0.44 mile north of the Project site.

1.1.3 Project Description

The approximately 33.2-acre project site is an infill site located in the western portion of the City of San Marcos, at the northwest corner of S. Las Posas Road and Linda Vista Drive, comprised of Assessor's Parcel Numbers (APNs) 219-222-01, 219-222-02, 219-222-03, and 219-222-04. La Mirada Drive abuts the site's northern boundary, while South Pacific Street abuts the property's western boundary. The Grand Plaza shopping center is located directly across S. Las Posas Road. Light industrial uses are adjacent to the site's northern, southern, and western boundary, and Bradley Park is located across from the site's southwestern corner. Single- and multi-family residential uses are located to the west and south of Bradley Park.

Per Figure 3, the Project would allow for the development of 449 residential units, including a mix of apartments, rowhomes, villas, and affordable flats on approximately 15.09 acres of the 33.2-acres project site. Proposed residential units would include a mix of apartments within a five-story podium building, three-story rowhomes, three-story villas, and affordable flats within a four-story building. The number of units proposed per housing type is outlined in the table below:

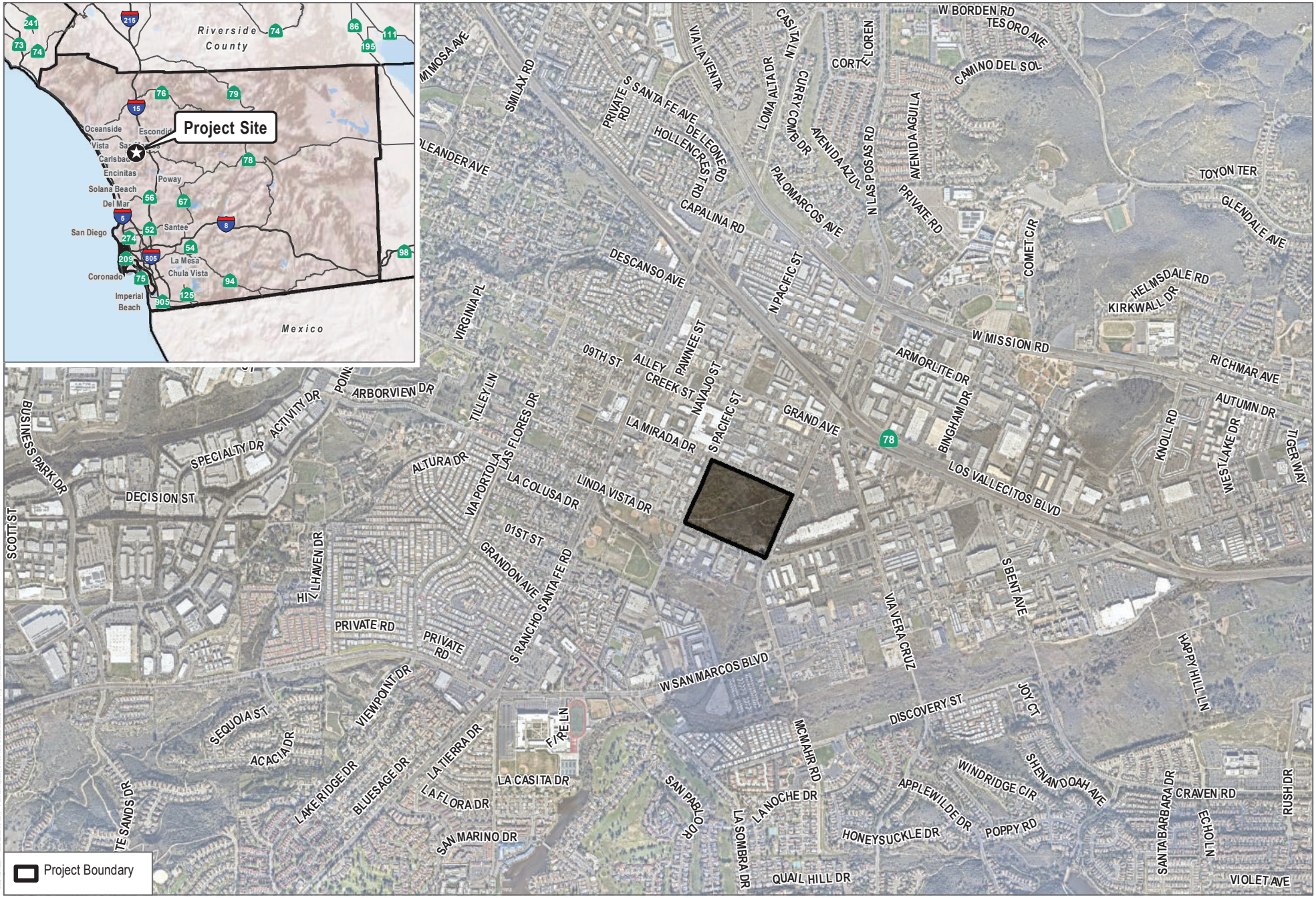
Housing Type	Number of Units
Rowhomes	101
Villas	108
Apartments	172
Affordable Flats	68
Total	**449**

68 of the 449 total units (15 percent of the total) would be designated as deed-restricted affordable units. The Project would also include a total of 927 parking spaces and 134,985 square feet of common open space area. The Project also proposes landscaping, bio-retention areas and circulation improvements. The remaining

approximately 17.94 acres of the 33.2-acre Project site would be preserved and restored open space and habitat area. The Project would have a density of approximately 13.5 dwelling units per acre (DU/AC), including the proposed open space and habitat area.

The project proposes a General Plan Amendment, Rezone, Specific Plan, Tentative Map, and Multi-Family Site Development Plan. The General Plan Amendment and Rezone would change the General Plan designation and Zoning from Industrial (I) to Specific Plan Area (SPA). The Specific Plan has been prepared with the intent to provide a comprehensive plan to ensure the efficient development of a new residential community. The Specific Plan serves as both a policy document and a regulatory document for the systematic implementation of the policies and goals of the General Plan. The Tentative Map presents specific lot configurations for the site. The Multi-Family Site Development Plan will configure the site for multi family dwelling units, street configuration, infrastructure, recreational open space, and private open space.

As part of the project, additional pedestrian connectivity would be provided along three of the adjacent street frontages. The project would provide a 6-foot sidewalk and Class II buffered bike lane along the project's frontage on Pacific Street; the project would provide a 12-foot urban trail (shared use path) along the project's frontage on Linda Vista Drive; and the project would also provide a 12-foot urban trail (shared use path) along the project's frontage on La Mirada Drive. In addition to the proposed sidewalk and trail connections, the project would add a bus stop and shelter with a bus turnout along South Las Posas Road adjacent to the development area and would install a 4-way traffic signal at the intersection of Linda Vista Drive and Pacific Street. Furthermore, the project would upsize approximately 1,458-feet of existing water pipe from 8-inches to 12-inches and would convert approximately 1,400-feet of existing overhead power lines to underground along La Mirada.



SOURCE: SANGIS 2020

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Fire Protection Plan for Pacific Project

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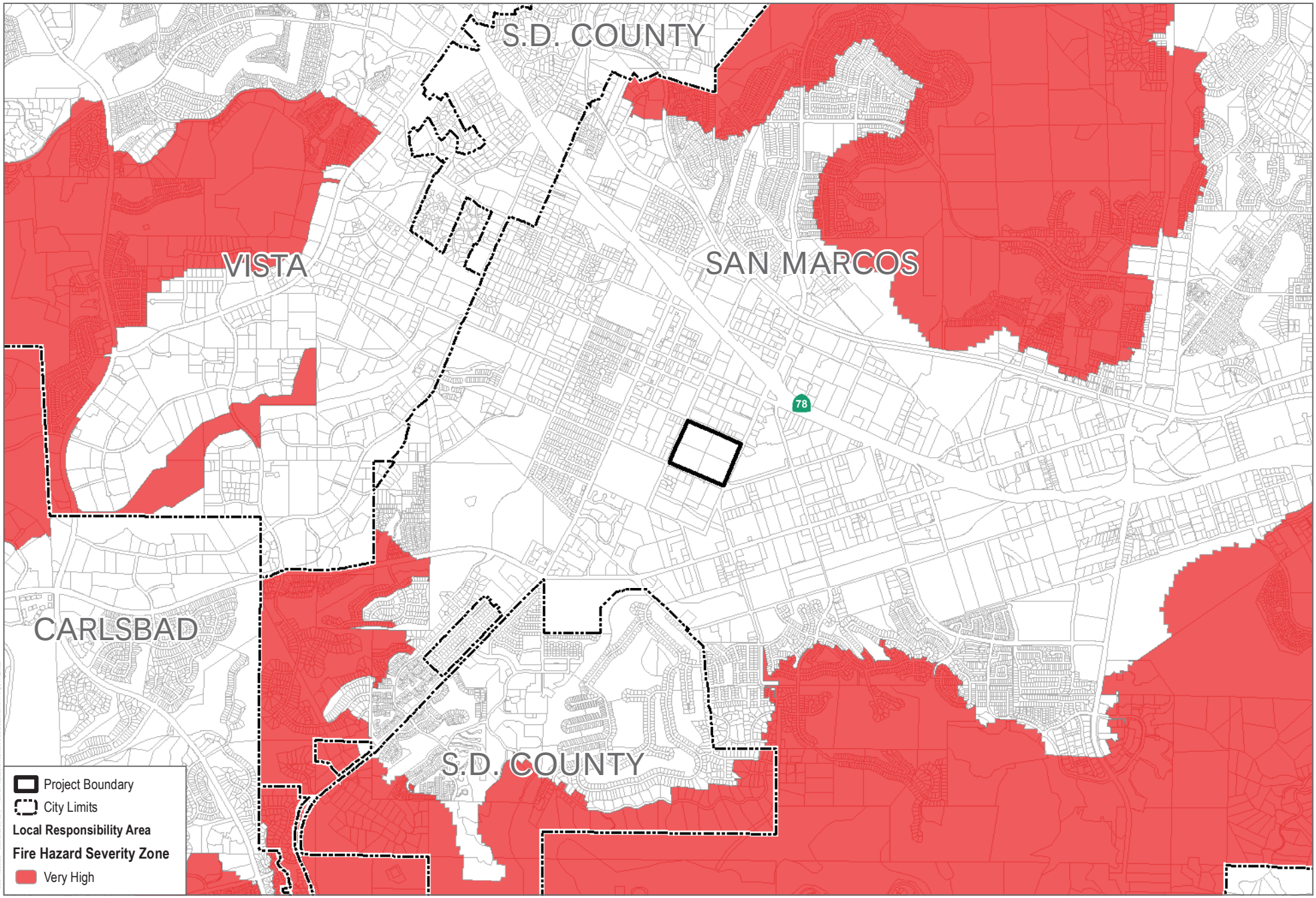

SOURCE: CAL FIRE 2009

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0 1,500 3,000 Feet

FIGURE 2

Fire Hazard Severity Zone

Fire Protection Plan for Pacific Project

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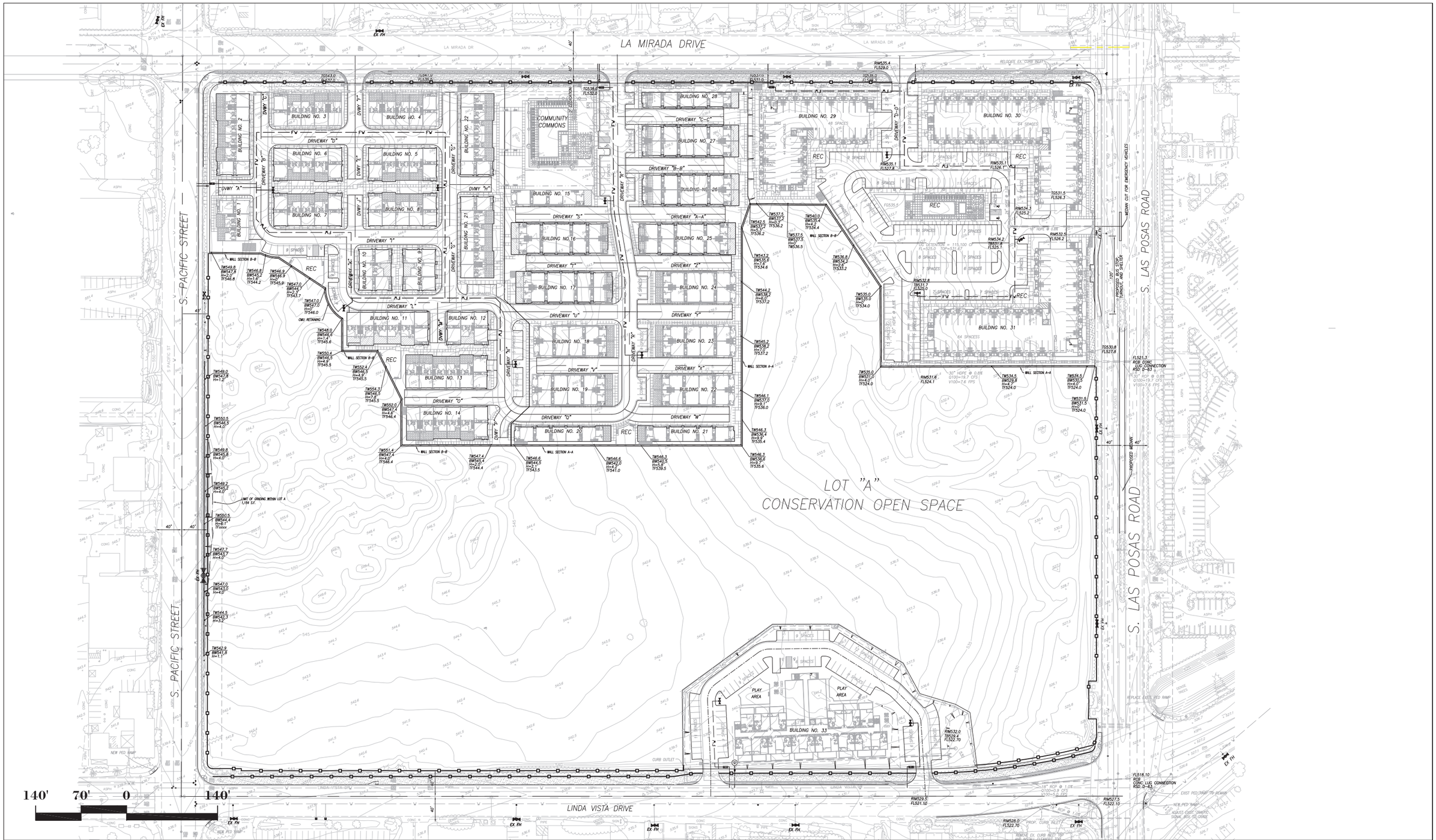

SOURCE: LUNDSTROM ENGINEERING AND SURVEYING, INC. 2023

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FIGURE 3

Conceptual Site Plan

Pacific/Upham Project

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2 Project Site Risk Analysis

2.1 Environmental Setting and Field Assessment

Dudek conducted a Project site evaluation on November 9, 2021, in order to confirm/acquire site information, document existing site conditions, and determine potential actions for addressing the protection of the Project's structures. While on-site, Dudek's Fire Planners assessed the area's topography, natural vegetation, and fuel loading, surrounding land use, and general susceptibility to wildfire. Among the field tasks that were completed included:

- Topography evaluation
- Vegetation/fuel assessments
- Existing infrastructure evaluations
- Photograph documentation of the existing condition
- Off-site, adjacent property fuel and topography conditions
- Surrounding land use confirmations
- Estimation of vegetation ignition fire behavior
- Ingress/egress documentation
- Nearby Fire Station reconnaissance.

2.2 Site Characteristics and Fire Environment

Fire environments are dynamic systems and include many types of environmental factors and site characteristics. Fires can occur in any environment where conditions are conducive to ignition and fire movement. Areas of naturally vegetated open space are typically comprised of conditions that may be favorable to wildfire spread. The three major components of the fire environment are topography, vegetation (fuels), and climate. The state of each of these components and their interactions with each other determines the potential characteristics and behavior of a fire at any given moment. It is important to note that wildland fire may transition to urban fire if structures are receptive to ignition. Structure ignition depends on a variety of factors and can be prevented through a layered system of protective features including fire-resistive landscapes directly adjacent to the structure(s), application of known ignition resistive materials and methods, and suitable infrastructure for firefighting purposes. Understanding the existing wildland vegetation and urban fuel conditions on and adjacent to the Project site is necessary to understand the potential for fire within and around the Pacific Project. The Project site is not within a fire hazard severity zone and the site's vegetation is a low-growing grass that will be mowed annually by the Project and enforced by the SMFD. Therefore, the vegetation ignition and wildfire threat is anticipated to be minimal.

2.2.1 Topography

The Project site is relatively flat, ranging in elevation from approximately 527 feet above mean sea level (amsl) in the southeast portion of the project area to 551 feet in the northwest corner of the Project site.

2.2.2 Climate

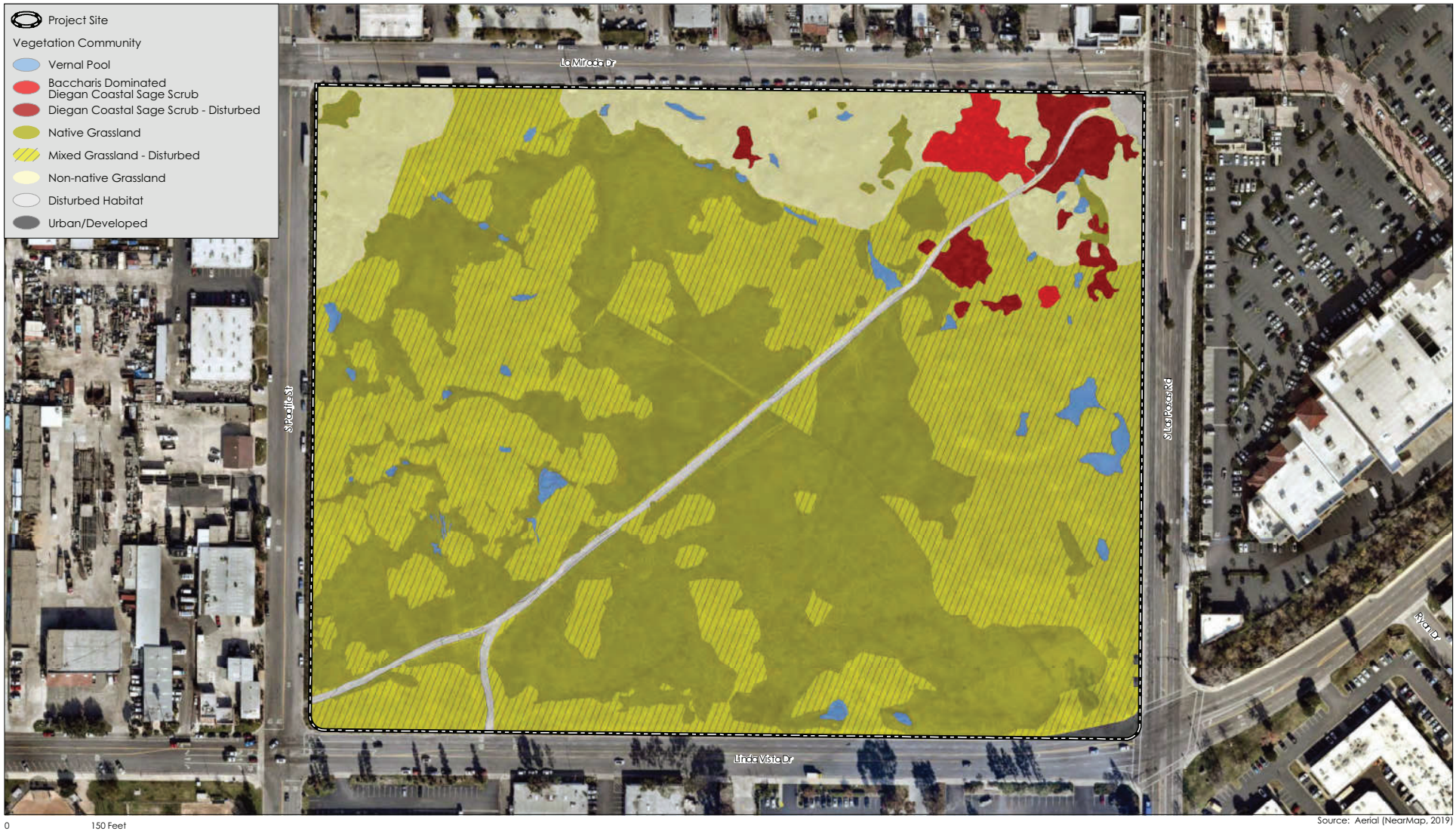
North San Diego County and the Project area are influenced by the Pacific Ocean and are frequently under the influence of a seasonal, migratory subtropical high-pressure cell known as the "Pacific High." Wet winters and dry summers with mild seasonal changes characterize the Southern California climate. This 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 is approximately 76°F, with daily highs in the summer and early fall months (June–September) exceeding 88°F. Precipitation typically occurs between December and March with an average rainfall of 16.22 inches (Western Regional Climate Center 2022).

The prevailing wind pattern is from the west (on-shore), but the presence of the Pacific Ocean causes a diurnal wind pattern known as the land/sea breeze system. During the day, winds are from the west–southwest (sea), and at night winds are from the northeast (land), averaging 2 miles per hour (mph). During the summer season, the diurnal winds may average slightly higher (approximately 16 mph) than the winds during the winter season due to greater pressure gradient forces. Surface winds can also be influenced locally by topography and slope variations. The highest wind velocities are associated with downslope, canyon, and Santa Ana winds.

Typically the highest fire danger is produced by the high-pressure systems that occur in the Great Basin, which result in the Santa Ana winds of Southern California. Sustained wind speeds recorded during recent major fires in San Diego County exceeded 30 mph and may exceed 50 mph during extreme conditions. The Santa Ana wind conditions are a reversal of the prevailing southwesterly winds that usually occur on a region-wide basis during late summer and early fall. Santa Ana winds are warm winds that flow from the higher desert elevations in the north through the mountain passes and canyons. As they converge through the canyons, their velocities increase. Consequently, peak velocities are highest at the mouths of canyons and dissipate as they spread across valley floors. Santa Ana winds generally coincide with the regional drought period and the period of highest fire danger. The Pacific Project site is affected by strong winds, such as Santa Ana winds.

2.2.3 Vegetation (Fuels)

Seven vegetation communities or habitat types occur within the Project site and within the biological study area: vernal pools, Diegan coastal sage scrub (including disturbed and baccharis-dominated), native grassland, non-native grassland, disturbed habitat, and developed. The acreage of each on-site vegetation community or land cover type is provided in Table 1. Vegetation community locations on the Project site can be seen on Figure 4, *Vegetation Communities*.



SOURCE: HELIX 2021

DUDEK

FIGURE 4

Vegetation Communities

Fire Protection Plan for Pacific Project

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Table 1. Project Vegetation Communities and Land Cover Types

Vegetation Community or Land Cover Type	Acres[1]
Wetland	
Vernal Pool (44000)	0.44
Wetland Subtotal	*0.44*
Upland	
Native Grassland (42100)	13.61
Diegan Coastal Sage Scrub-disturbed (32500)	0.71
Diegan Coastal Sage Scrub-Baccharis-dominated (32530)	0.37
Grassland – mixed and disturbed (32500)	13.90
Non-native Grassland (42200)	3.48
Disturbed Habitat (11300)	0.65
Developed (12000)	0.08
Upland Subtotal	*32.80*
TOTAL	33.24

Source: Pacific EIR, Appendix C, Helix 2022.
[1] Acres rounded to the nearest 0.01 acre for wetland habitat and 0.1 acre for upland habitat.

Vernal Pools (44000)

Vernal pools are seasonally flooded depressions that support a highly specialized plant habitat and unique flora and fauna adapted to living in extreme dry and wet conditions. Vernal pools are associated with two important physical conditions: a subsurface hardpan or claypan that inhibits the downward percolation of water and a topography characterized by a series of low hummocks called mima mounds and low depressions (the vernal pools) which prevents above-ground water runoff. As a result of these two physical conditions, water collects in these depressions during the rainy season. As the rainy season ends and the dry season begins, the water that has collected in these vernal pools is gradually evaporated. As water evaporates from these pools, a gradient of low soil water availability to high soil water availability is created from the periphery of the pool margins to the center of the pool. The chemical composition of the remaining pool water becomes more concentrated as the pool water is evaporated, creating a gradient of low ion concentration at the pool periphery to high ion concentration at the pool center. A temporal succession of plant species will occur at the receding pool margins, depending upon the physical and chemical microenvironmental characteristics of the pool. Vernal pools in a wet year will have a high proportion of native species that are endemic to this habitat. During these years, the exotic, ruderal species, characteristic of the non-native grasslands that occur on the surrounding mima mounds will not invade these pools, unable to tolerate the physiological conditions of the ephemeral pool. In years of scarce rainfall that is insufficient to saturate the soil and create a surface pool, the native endemic flora will not germinate and pools are often invaded by the exotic species. Vernal pools are typically identified and separated from other wetlands by the presence of "vernal pool indicator species."

Within the project site, vernal pool indicator species were detected at many of the depressions. Typical species found in the project site within areas mapped as vernal pools include San Diego button-celery, dwarf woolly-heads (Psilocarphus brevissimusvar. brevissimus), American pillwort (Pilularia americana),flowering-quillwort(Triglochin scilloides), annual hairgrass (Deschampsia danthonioides), pale spike-rush(Eleocharis macrostachya), toad rush

(Juncus bufonius), Mexican rush (Juncus mexicanus), hyssoploosestrife (Lythrum hyssopifolia), and curly dock (Rumex crispus).

Diegan Coastal Sage Scrub (Including Disturbed and Baccharis-Dominated; 32500)

Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect. Typical species found within Diegan coastal sage scrub include California sagebrush (Artemisia californica), California buckwheat (Eriogonum fasciculatum), laurel sumac (Malosma laurina),and black sage (Salvia mellifera). Disturbed Diegan coastal sage scrub contains many of the same shrubspecies as undisturbed Diegancoastal sage scrub but has a higher proportion (above 25 percent) of non-native species. Within the project site, Disturbed Diegan coastal sage scrub contains California buckwheat and California sagebrush, a variety of native herbs, non-native grasses, and herbaceous weeds. Baccharis dominated Diegan coastal sage scrub is dominated by coyote brush (Baccharispilularis), with lesser amounts of other typical coastal sage scrub species.

Grassland (40000)

Grasslands primarily consist of annual grasses and other annual herbaceous species, generally mid-height up to three feet tall. Grasslands in southern California occur in a variety of forms such as but are not limited to: mixed grassland, valley needlegrass, saltgrass, non-native, and broadleaf or artichoke thistle dominated. Percent plant cover within grasslands is typically high (at least 75 percent),and the composition of native versus non-native species varies year by year (less than20 percent native to greater than 90 percent native) depending on site disturbances, annual rainfall, and growing season conditions. Based on surveys in 2019, 2021, and 2022 of the Project site, three subtypes or forms of grassland were identified and recorded: mixed disturbed grassland, native grassland, and non-native grassland. Areas found on-site to bean intermixed mosaic of both native and non-native herbaceous species were mapped as mixed disturbed grassland. The species composition and plant density of mixed grassland mapped on-site varies throughout/across the site, seems to change throughout the growing season, varies from year to year, and ultimately, does not clearly reflect a consistent dominance of either native or non-native species. Below are descriptions of the other two grassland types observed on-site; native grassland and non-native grassland.

Native Grassland (42100)

Native grassland is typically a community dominated by perennial bunchgrasses such as purple needlegrass (Stipa pulchra)or other native grass species. Native and non-native annuals tend to occur between the perennials, often exceeding the bunchgrass in cover. Native grasslands generally occur on fine-textured soils that exclude the growth of annual exotic grass species. The percentage of native species at any one time can be quite low (Oberbauer 2008). Areas on-site found to be dominated with dense patches of purple needlegrass were mapped as native grassland. Additionally, native grasslands on-site reflect areas found during the focused rare plant surveys to be dominated by Orcutt's brodiaea (Brodiaea orcuttii), thread-leaved brodiaea, or chaparral brodiaea (Brodiaea jolonensis) were mapped as native grassland. Further, areas of the site supporting at least 20 percent native plant cover were also mapped as native grassland. Such areas are primarily comprised of common golden stars (Bloomeriacrocea) and California blue-eyed grass (Sisyrinchium bellum); however, these areas also supported a high percentage of non-native annual species, including wild oats (Avenasp.), foxtail chess (Bromusmadritensis), soft chess (Bromus hordeaceus), and Bermuda grass (Cynodon dactylon).

Non-Native Grassland (42200)

Non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered native annual forbs "wildflowers" (Oberbauer 2008). This grassland typically occurs on gradual slopes, with deep, fine-textured, usually clay soils. Characteristic species include wild oats, red brome (Bromusrubens), ripgut (B. diandrus), ryegrass (Festucasp.), and mustard (Brassicasp.).In accordance with the MHCP definition, this vegetation community was mapped in areas supporting at least 30 percent non-native plant cover. On-site such primarily included wild oats, foxtail chess, soft chess, Bermuda grass, rattail sixweeks grass (Festuca myuros), and purple false brome (Brachypodium distachyon).

Disturbed Habitat (11300)

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat. An unpaved road/trail bisects the site. Additionally, the northeast corner of the Project site is characterized by bare ground and sparse annual non-native weeds.

Developed Land (12000)

Urban/developed land includes areas that have been constructed upon or otherwise covered with a permanent, unnatural surface and may include, for example, structures, pavement, irrigated landscaping, or hardscape to the extent that no natural land is evident. These areas no longer support native or naturalized vegetation. Urban/developed land in the Project site consists of Linda Vista Drive in the southeast corner of the site and utilities in the northeast corner of the site.

2.2.4 Fire History

Fire history is an important component of a site-specific FPP. Fire History data provides valuable information regarding fire spread, fire frequency, ignition sources, and vegetation/fuel mosaics across a given landscape. According to available data from the CAL FIRE in the FRAP database, twenty-six (26) fires have burned within a 5-mile radius of the Project site, with no fires occurring on the Project site since the beginning of the historical fire data record. Recorded wildfires within 5 miles range from approximately 12 acres to 40,248 (1943 Fire) acres, the second-largest fire (Harmony Fire-1996) was larger than 9,359 acres and the average fire size is 848 acres (not including the 1943 Fire and Harmony Fire or fires smaller than 10 acres). The Cocos Fire (1995 acres) is the most recent fire, which occurred approximately 2.5 mile southeast of the Project site. SMFD may have data regarding smaller fires (less than 10 acres) that have occurred on the Project site that have not been included herein. Fire history for the Project site is depicted in Appendix B.

Based on an analysis of this fire history data set, specifically, the years in which the fires burned, the average interval between wildfires in the area was calculated to be 3 years with intervals ranging between 0 to 17 years. Because the fuel bed is minimal and will be maintained and the Project occurs within an entirely developed and urban area, the wildfire threat is considered very low. Even if a vegetation fire did ignite on the post-Project open space area, fuels, terrain, and extremely short duration for the wildfire based on lack of fuels to sustain it would result in a minimal threat.

2.2.5 Post-Development Conditions

Based on the Project site, the preserve area low, maintained fuels and the urbanized nature of the vicinity, the post-development wildfire risk is minimal and vegetation fire would not be readily facilitated due to lack of vegetative fuels. It should be noted that according to SMFD's agreement with the applicable wildlife agencies, the entire site will be provided weed abatement annually, removing potential for wildfire on the site, confirming the non-fire hazard severity zone classification, and enabling the Project to eliminate the use of fuel modification zones and ignition resistant construction.

2.3 Project Area Fire Risk Assessment

With the conversion of the landscape to ignition-resistant development and the annual weed abatement on the preserved areas of the site, wildfires would not have fuels needed to spread on-site. Given the climatic, vegetative, topographic characteristics, and local fire history of the area, the Project Site, once developed, is determined to not be subject to wildfires. The potential for off-site wildfire encroaching on, or showering embers on-site is considered very low.

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3 Emergency Response and Service

3.1 Emergency Response

The Project site is located within the jurisdiction of the San Marcos Fire Department (SMFD), and consequently, SMFD provides the initial response. The SMFD jurisdictional response area encompasses approximately 33 square miles with a population of approximately 96,000 residents. The SMFD currently operates four Fire Stations, two of which are analyzed herein due to their proximity to the Project site and could respond to an incident at the Pacific Project site. Primary response would be from SMFD Station 1, with SMFD Station 2 & Vista Fire Department (VFD) Station 4 responding as necessary.

Within the area's emergency services system, fire and emergency medical services are provided by Fire Departments (San Marcos Fire Department and Vista Fire Department) County Service Areas (CSA), and CAL FIRE. Generally, each agency is responsible for structural fire protection and wildland fire protection within their area of responsibility. However, mutual aid agreements enable non-lead fire agencies to respond to fire emergencies outside their district boundaries. In the Project area, fire agencies cooperate on a statewide master mutual aid agreement for wildland fires and there are mutual aid agreements in place with neighboring fire agencies (North County Boundary Drop Program) and typically include interdependencies that exist among the region's fire protection agencies for structural and medical responses, but are primarily associated with the peripheral "edges" of each agency's boundary. These agreements are voluntary, as no local governmental agency can exert authority over another. While the San Marcos Fire Protection District provides primary service to the City of San Marcos, the District also has an existing automatic mutual aid fire agreement in place with the cities of Carlsbad, Vista, Escondido, Encinitas, and the Rancho Santa Fe Fire Protection District.

Table 2 presents a summary of the location, fire apparatus equipment, staffing levels, maximum travel distance, and estimated travel time for the two nearby SMFD stations that would respond to a fire or medical emergency at the Pacific Project site. Travel distances are derived from Google road data while travel times are calculated applying the nationally recognized RAND Corporation formula used by the Insurance Services Office (ISO) Public Protection Classification Program's Response Time Standard: (T=0.65 + 1.7D), where T=time and D=distance). The response travel time formula discounts speed for intersections, vehicle deceleration, and acceleration, and does not include turnout donning time.

Table 2. San Marcos Fire Department Responding Stations Summary

Station	Location	Equipment	Staffing	Maximum Travel Distance*	Travel Time**	Total Response Time***
SMFD Station 1	180 W. Mission Road San Marcos, California	- Paramedic Engine Co. - Pierce 100-foot MDL Tiller and Body Assembly quintuple combination pumper. - Type 3 Engine - Paramedic Ambulance -Battalion Chief	On duty: 10	2.33 mi.	4 minutes 37 secs.	6 Minutes 37 secs

Table 2. San Marcos Fire Department Responding Stations Summary

Station	Location	Equipment	Staffing	Maximum Travel Distance*	Travel Time**	Total Response Time***
SMFD Station 2	1250 S. Rancho Santa Fe Road San Marcos, California	- Paramedic Engine Co. - Paramedic Ambulance	On-duty: 5	2.23 mi.	4 minutes 26 secs.	6 minutes 26 secs
VFD Station 4	2121 Thibodo Road Vista, California	- Paramedic Engine Co. - Paramedic Ambulance	On-duty: 5	2.73 mi.	5 minutes 17 secs.	7 minutes 17 secs

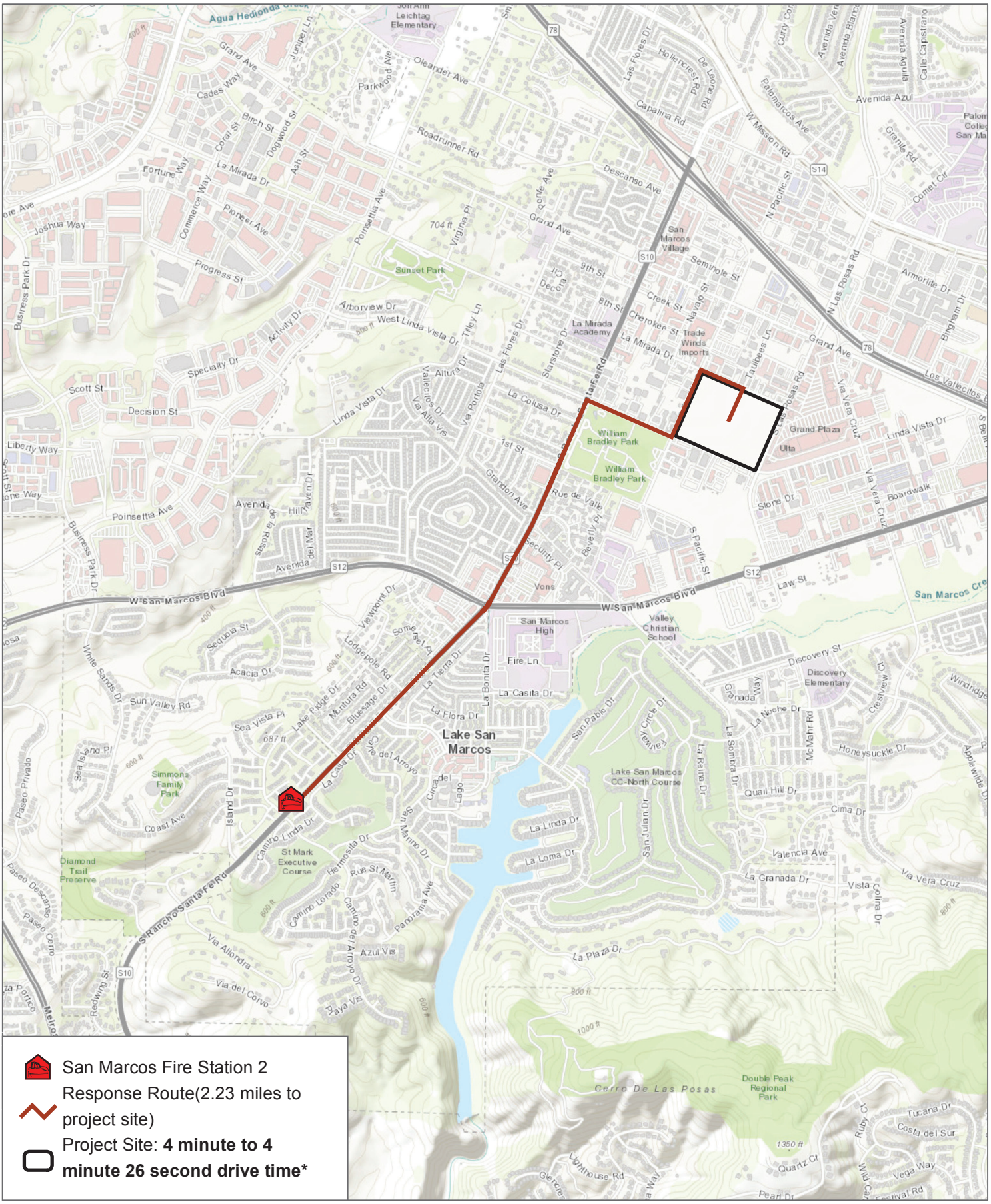
* Distance measured to the central portion of the Project site Project site, refer to Figures 5 to 7.
** Application of the ISO formula, T=0.65+1.7(Distance), a 35-mph travel speed, and does not include turnout time.
*** Application of the ISO formula, T=0.65+1.7(Distance), a 35-mph travel speed, plus an additional 2 minutes for dispatch and turnout time.

Based on the Pacific Project site location in relation to existing SMFD stations, travel time to the Project site for the first responding engine from SMFD Station 2 is 4 minutes, 26 seconds to the central portion of the Project site, entering from the furthest ingress/egress point on La Mirada Drive. Travel time for secondary response is approximately 4 minutes and 37 second. However, travel time does not account for dispatch and turnaround time. In order to estimate a total response time, an additional two minutes were added to the total travel time. This results in an estimated response of 6 minutes and 26 seconds for Project from SMFD Station 2. The total secondary response for SMFD Station 1 would be approximately 6 minute and 37 seconds and approximately 7 minutes and 17 seconds from VFD Station 3. SMFD's internal response time standard is to have the first arriving fire apparatus on-site within 8 minutes (average maximum initial response of no more than 8 minutes for fire apparatus and 9 minutes for ambulance, 90% of calls). The Project would conform with SMFD's internal response time standard, and as discussed in Section 3.2 below, will not have an overall impact on SMFD's ability to meet its average response goals.

3.2 Emergency Service Level

The SMFD estimates approximately 11,486 total annual calls (Nailon, J. 2021) and a City population of approximately 95,000 (SMFD 2021). The per capita call volume is roughly 0.12 for the City of San Marcos. As of 2020, the City of San Marcos has a person per household ratio of 3.09 (DOF 2020). Using this household ratio of 3.09, the development of 495 residential dwelling units at the Project site would generate approximately 1,530 people. The emergency service level analysis was based on the maximum occupancy level and the Project is expected to generate roughly 184 calls per year, most of which are expected to be medical-related calls, consistent with typical emergency call statistics.

Service level requirements are not expected to be significantly impacted with the increase of approximately 184 calls per year or 0.5 calls per day for a station (SMFD Station 2) that currently responds to roughly 18 calls per day (6,502 calls per year) in its primary service area. Therefore, the Project is not expected to cause a decline in SFMD's emergency response times. Additional response, rounding out the effective firefighting force (the manpower needed to effectively fight a structure fire and/or respond to serious medical emergency) would be provided by SMFD Stations 1 and VFD Station 4.



SOURCE: SANDAG 2020, ESRI Basemap 2021

*Response times calculated using posted speed limits. New roads within the project area assumed speeds of 20 MPH.

DUDEK

FIGURE 5

Response Time - San Marcos Fire Station 2

Pacific Project FPP

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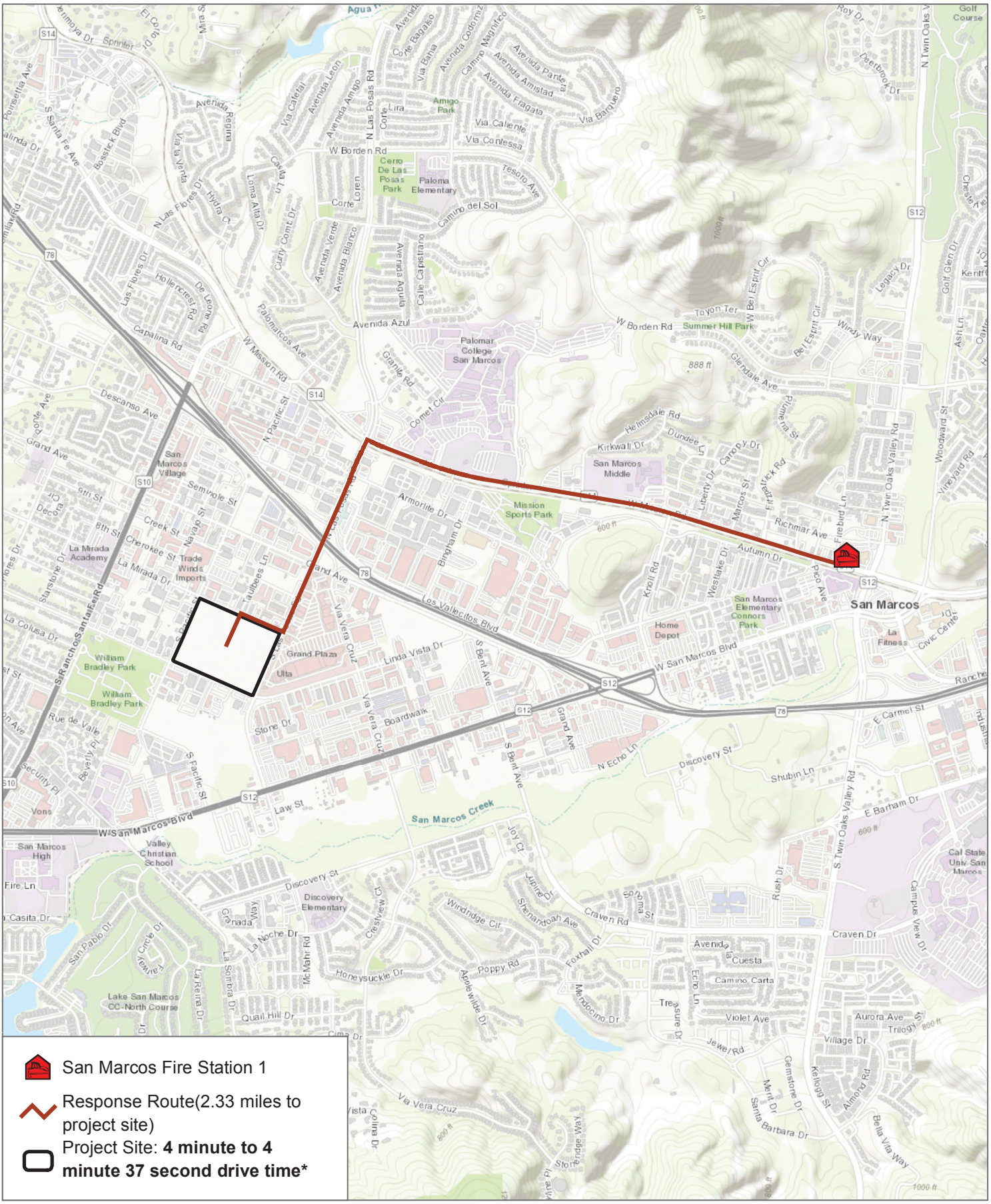

SOURCE: SANDAG 2020, ESRI Basemap 2021

*Response times calculated using posted speed limits. New roads within the project area assumed speeds of 20 MPH.

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FIGURE 6

Response Time - San Marcos Fire Station 1

Pacific Project FPP

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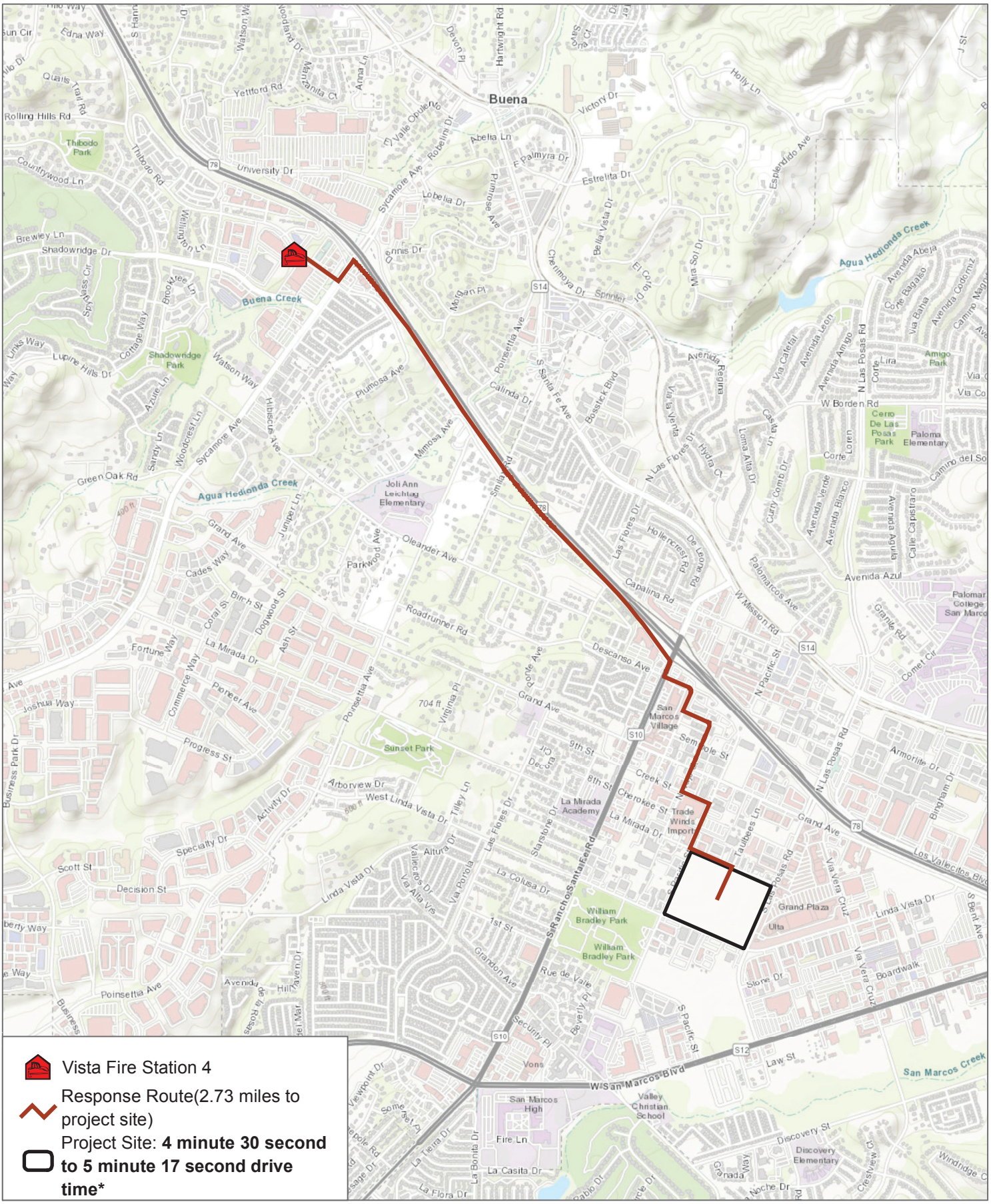

SOURCE: SANDAG 2020, ESRI Basemap 2021

*Response times calculated using posted speed limits. New roads within the project area assumed speeds of 20 MPH.

DUDEK

0 1,000 2,000 Feet

FIGURE 7

Response Time - Vista Fire Station 4

Pacific Project FPP

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3.2.1 Cumulative Impacts on Fire Response

Cumulative impacts from multiple projects can cause fire response service decline and must be analyzed for each project. The Pacific Project and its estimated population of 1,530 people is an increase in potential service demand of approximately 184 calls per year (0.5 calls per day), which is within the capacity of the existing fire stations that will service the Pacific Project. There are seven[1] other future projects in the vicinity of SMFD Station 2 and when considered cumulatively would be mitigated by increased funding available from each project to the SMFD through property taxes and other fees associated with each project, including the Pacific Project; therefore, the potential impact of multiple projects is considered less than significant, as this funding would be utilized to maintain or enhance fire response capabilities.

[1] Per Pacific EIR Figure 2-7, Cumulative Projects Map, there are seven cumulative projects within the vicinity of SMFD Station 2. These projects are listed in Table 2-3, Cumulative Projects, of the EIR, which include projects 5, 7, 19, 26, 36, 43, and 45.

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4 Buildings and Infrastructure

The City of San Marcos Municipal Code, Chapter 17.64 (2018 International Fire Code and 2019 California Fire and Building Codes adopted by reference with several modifications) governs the building and infrastructure in new developments. The Project will meet or exceed applicable codes.

- The Municipal Code Section 17.64.210 (Buildings 4 stories and higher) in its entirety, applies to the project
- New structures shall be tested for Emergency responder radio coverage in accordance with Section 510 of the California Fire Code. (Mid Rise Buildings).

If requested, the Project applicant shall submit an emergency response map update in a format compatible with current department mapping to the SMFD.

The following summaries highlight important fire protection features. All underground utilities, hydrants, water mains, curbs, gutters, and sidewalks will be installed, and the drive surface shall be approved prior to combustibles being brought on-site.

4.1 Access

4.1.1 Primary and Emergency Access

The Project would be accessible from two points on La Mirada Drive, one point on Pacific Street, and one point on Linda Vista Drive. A gated emergency access road is proposed along S. Las Posas Road. The California Fire Code, along with the San Marcos Fire Department, administers the rules and regulations on fire access design. The Project would be designed to provide fire and emergency responders suitable fire access roads dimensions and surfaces (Chapter 5, §503.1 through §503.4 of the California Fire Code), an adequate number of emergency rated entrances to the community (Appendix D, §D106 of the California Fire Code), and entryway gate access for first responders (Chapter 5 of the California Fire Code, §503.6).

All driveway turning radii is designed to accommodate a Pierce 100-foot MDL Tiller and Body Assembly quintuple combination pumper (aerial ladder truck).

4.1.2 Gates

There is one gate proposed for the emergency access road along S. Las Posas Road on the eastern portion of the Project site. Gates on private roads and/or private driveways are permitted, but subject to Fire Code requirements and standards, including:

- Gates will be equipped with conforming sensors for detecting emergency vehicle “Opticom” strobe lights from any direction of approach.
- All automatic gates will be equipped with a Knox, emergency key-operated switch overriding all command functions and opening the gate(s). Knox Key Box shall be provided. A master key for entry to all gates,

enclosures and equipment rooms or areas is required. Knox box shall be mounted in area approved by fire dept. at height of 60 to 66 inches above grade. Knox Box shall be type with side hinged door. Gate activation devices will be equipped with a battery backup or manual mechanical disconnect in case of power failure.

Further, gates will be:

- Minimum 20 feet wide of clearance for one-way traffic when fully open at entrance.
- Minimum of two feet wider than road width at exit.
- Constructed from non-combustible or exterior fire-rated treated wood materials.
- Inclusive of provisions for manual operation from both sides, if power fails. Gates will have the capability of manual activation from the development side or a vehicle (including a vehicle detection loop).

4.1.3 Maximum Dead-End Road Length

Dead-end fire apparatus access roads that exceed 150 feet shall have an approved turnaround (County Code Section 503.2.5). There are three dead-end roads within the Project site that slightly exceed 150 feet (1 foot beyond at 151 feet total length). SMFD has accepted these dead-end roads as substantially complying with their 150 feet maximum and will not require turnarounds (Appendix C). All of the dead-end roads are straight and on flat grades, making the engine access less problematic. The combination of these factors provide justification for SMFD, with their concurrence, to grant a modification to allow the 1-foot dead-end road length exceedance. Both SMFD's 100-foot Aerial Tiller and quintuple combination pumper or Quint[2] have adequate room to access the residential structures.

4.1.4 Road Width and Circulation

On-site roads will be constructed to current City of San Marcos Road standards and 2019 CFC, including minimum 24-foot road widths unobstructed by parking, and shall be improved with asphalt paving materials that support the imposed loads of fire apparatus (not less than 75,000 lbs.). The FPP recommends a turning radius for fire apparatus access roads of 28 feet as measured on the inside edge of the improved width or as indicated by SMFD. On-site parking is restricted to straight-in parking within the designated parking areas. There will be no parallel parking within the Project site. Parking will be restricted throughout development by posting signs stating "No Parking- Fire Lane" CVC (California Vehicle Code 22500.1) to preserve the unobstructed width for emergency response. Legally enforceable signs shall be posted at each entrance driveway and throughout the property. Signs shall be securely mounted facing the direction towards oncoming traffic entering the area and clearly visible indicating that "violating vehicles will be towed at owner's expense." Prior to a final fire inspection for the proposed development, a written agreement for services with a towing company per CVC 22658(a) will be in place.

4.1.5 Surface

All fire access and vehicle roadways shall be designed and maintained to support the imposed loads not less than 75,000 pounds of fire apparatus and shall be provided with an approved paved surface as described above. All

[2] A Quint is a fire service apparatus that serves the dual purpose of an engine and a ladder truck. SMFD's Quint is 40 feet long by 8.5 feet wide and has inside and outside turning radii of 28 feet and 42 feet, respectively, as specified on City's Hammerhead and Turning Radius templates. All roadway standards, including turning radii and turnaround, must designed and built to support the fire department's Quint

underground utilities, hydrants, water mains, curbs, gutters, and sidewalks must be installed, and the drive surface shall be approved prior to combustibles being brought on-site (CFC Section 503.2).

4.1.6 Vertical Clearance

The minimum unobstructed vertical clearance of 13 feet 6 inches will be maintained for the entire required width for all streets, including driveways that require emergency vehicle access.

4.1.7 Premise Identification

Identification of roads and structures will comply with SMFD and CFC, Section 505.1, as follows:

- Each building shall have a minimum 12-inch address number, with 1-1/2-inch stroke or to the SMFD satisfaction. Numbers shall be mounted in visible locations and contrast in color to the background, be reflectorized, and 6 to 8 feet above grade. Addresses shall be posted at the beginning of construction and be maintained thereafter.
- Streets and roads shall be identified with approved signs consistent, uniform in design, and good taste and style per the City of San Marcos requirements. The size of letters, numbers, and symbols shall be a minimum of 4-inch letter height, ½-inch stroke, reflectorized, and be contrasting with the background color of the sign. The street sign shall be clearly visible to traffic approaching from all directions. Temporary signs shall be installed at each street intersection when the construction of new roadways allows passage by vehicles and be visible from all directions. Signs shall be of an approved size, weather-resistant, and be maintained until replacement by permanent signs.

The SMFD requires an illuminated directory map at all driveways. The final Location of directory maps and content shall be approved by the fire department.

4.2 Ignition Resistant Construction and Fire Protection Systems

The Project is not within a wildland urban interface or a fire hazard severity zone and therefore, does not require the ignition resistant construction defined in Chapter 7A of the California Building Code.

4.3 Fire Protection Systems

4.3.1 Water

Water service for the Pacific Project site will be provided by Vallecitos Water District (VWD) and will be consistent with SMFD requirements. There is existing 855 Zone and 920 Zone water facilities in the vicinity of the Project site. The 920 Zone facilities consist of 24-inch and 30-inch transmission lines that do not provide direct service to properties in the area. Water service to existing development in the area is from connections to the 855 Zone which includes 12-inch lines in Linda Vista Drive and Pacific Street, and 8-inch lines in La Mirada Drive and S. Las Posas Road.

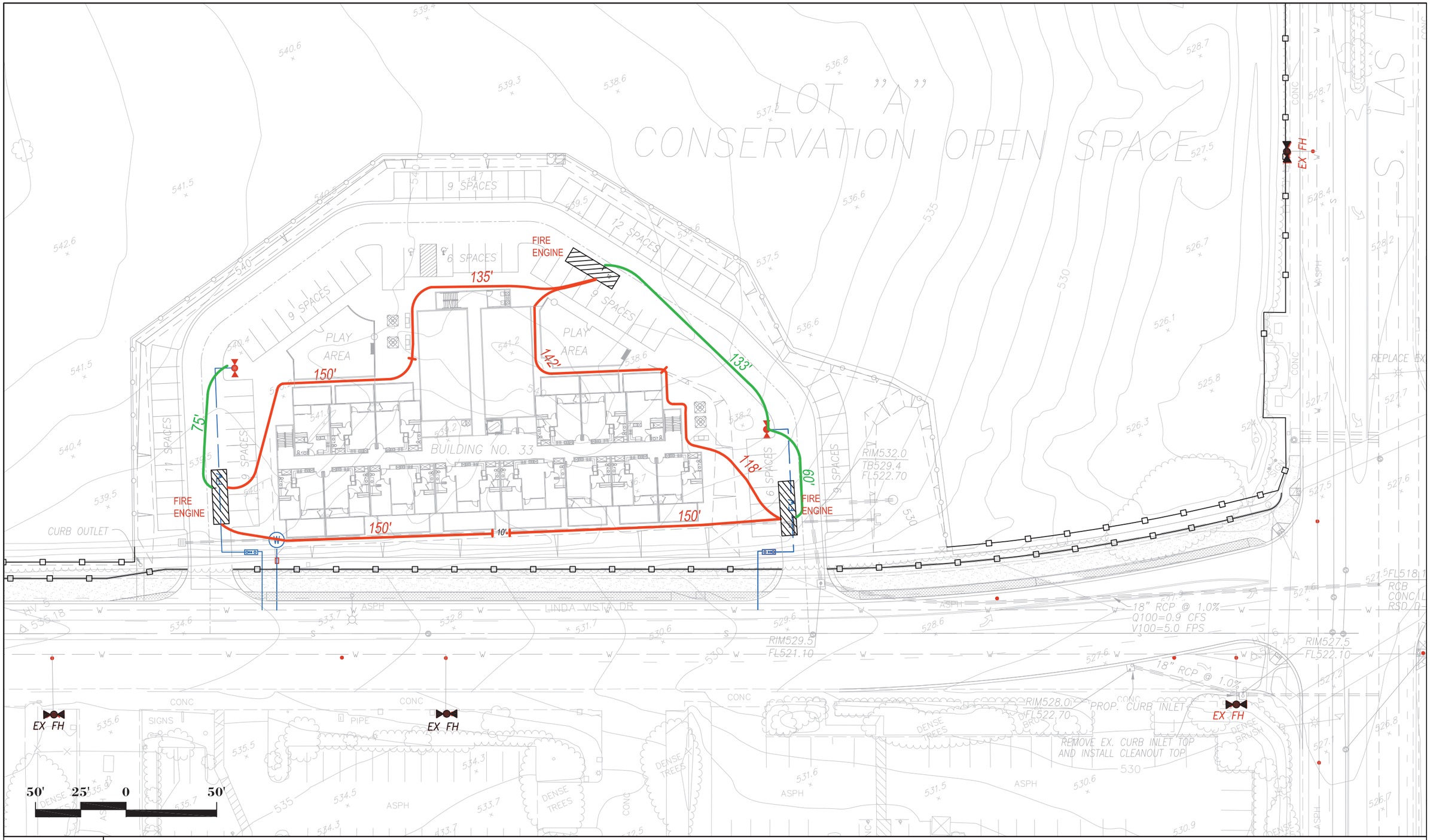
The domestic system for the Pacific Project would consist of two connections to the public water system with an on-site loop between the connections. A water meter and backflow preventer would be required at each connection to the public water system. The Project would connect to the existing 855 Zone water facilities within the adjacent Linda Vista Drive, Pacific Street, La Mirada Drive and/or S. Las Posas Road. Landscaped areas associated with the Project would require a separate irrigation service and meter.

4.3.2 Fire Hydrants

All hydrants will be consistent with SMFD Design Standards (two 4-inch ports and one 2.5-inch port). Reflective blue dot hydrant markers shall be installed in the street to indicate the location of the hydrant. Crash posts will be provided where needed in on-site areas where vehicles could strike fire hydrants or fire department connections. Hydrants shall be located along fire access roadways as determined by the SMFD Fire Marshal to meet operational needs every 300 feet (on-center) of fire access roadways, regardless of parcel size, pursuant to the San Marcos Fire Code (Section 17.64.130).

4.3.2.1 150 Feet Hose Pull

The project site substantially conforms to the 150-foot hose pull requirement with all buildings fully reachable except for a 10-foot gap along the southern Project's southern edge, just north of Linda Vista Drive, as indicated in Figures 8A through 8D. Per these same figures, the Project proposes to provide additional hydrants and standpipes to extend the engine's hose pull reach.



SOURCE: LUNDSTROM ENGINEERING AND SURVEYING, INC. 2023

HOSE PULL SUPPLY LINE

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FIGURE 8A

Hosepull Exhibit - South Development

Pacific/Upham Project

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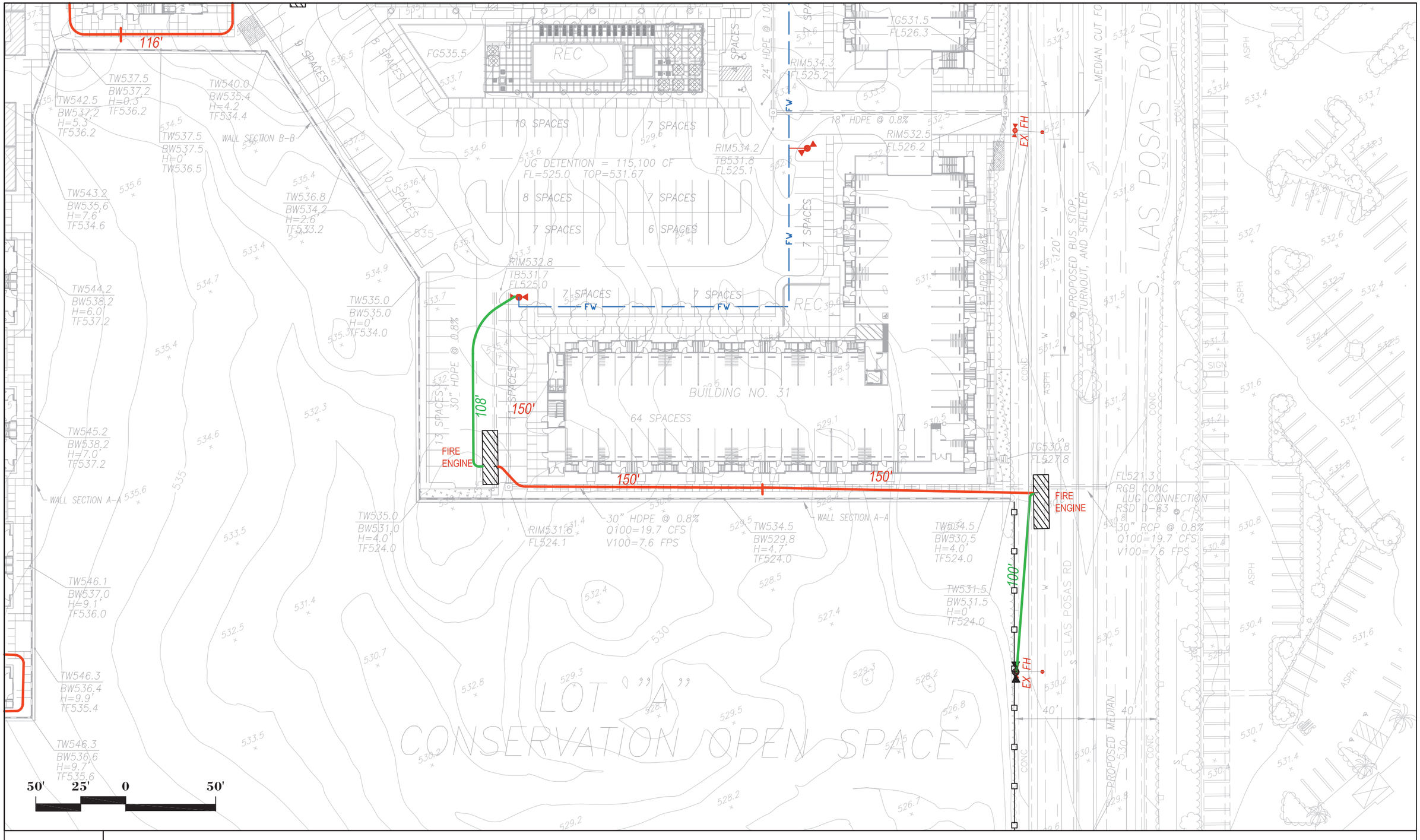

SOURCE: LUNDSTROM ENGINEERING AND SURVEYING, INC. 2023

HOSE PULL SUPPLY LINE

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FIGURE 8B

Hosepull Exhibit - North Development

Pacific/Upham Project

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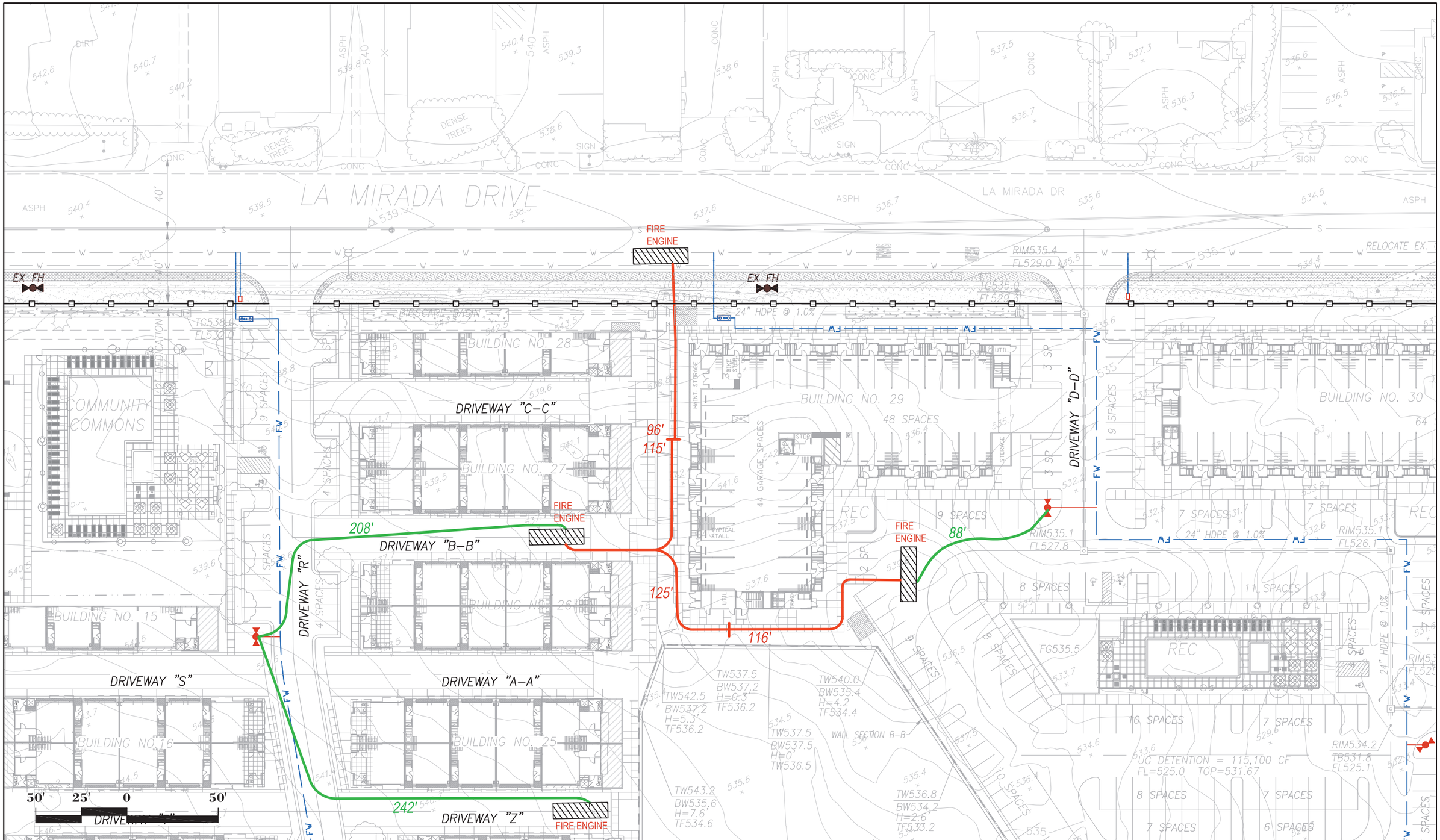

SOURCE: LUNDSTROM ENGINEERING AND SURVEYING, INC. 2023

HOSE PULL SUPPLY LINE

DUDEK

FIGURE 8C

Hosepull Exhibit - North Development

Pacific/Upham Project

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DRIVEWAY "L"
DRIVEWAY "M"
DRIVEWAY "N"
DRIVEWAY "O"
DRIVEWAY "P"
DRIVEWAY "Q"
DRIVEWAY "R"
DRIVEWAY "U"
DRIVEWAY "V"
DRIVEWAY "W"
DRIVEWAY "X"
DRIVEWAY "Y"
BUILDING NO. 11
BUILDING NO. 12
BUILDING NO. 13
BUILDING NO. 14
BUILDING NO. 17
BUILDING NO. 18
BUILDING NO. 19
BUILDING NO. 20
BUILDING NO. 21
BUILDING NO. 22
BUILDING NO. 23
BUILDING NO. 24
REC
5 SPACES
4 SPACES
4 COMPACT
FW
FIRE ENGINE
94'
100'
218'
150'
120'
WALL SECTION A-A
WALL SECTION B-B
TW554.3 BW546.5 H=7.8' TF545.5
TW552.0 BW547.4 H=4.6' TF546.4
TW551.4 BW547.4 H=4.0' TF546.4
TW547.4 BW545.4 H=2.0' TF544.4
TW546.6 BW544.5 H=2.1' TF543.5
TW546.6 BW542.0 H=4.2' TF541.0
TW546.3 BW540.5 H=5.8' TF539.5
TW546.3 BW536.6 H=9.7' TF535.6
TW546.1 BW537.0 H=9.1' TF536.0
TW545.2 BW538.2 H=7.0' TF537.2
TW544.2 BW538.2 H=6.0' TF537.2
TW535.0 BW535.0 H=0' TF534.0
TW535.0 BW531.0 H=4.0' TF524.0
LOT A
CONSERVATION OPEN SPACE
50' 25' 0 50'

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DUDEK

SOURCE: LUNDSTROM ENGINEERING AND SURVEYING, INC. 2023

HOSE PULL SUPPLY LINE

FIGURE 8D

Hosepull Exhibit - North Development

Pacific/Upham Project

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4.3.3 Mid-Rise Building Requirements

In addition to other applicable provisions of the Fire Code, other laws and regulations, and any policies of the chief, the provisions of this article apply to every newly constructed mid-rise building, of any type of construction, or any mid-rise building which undergoes a complete renovation that requires the complete vacancy of the building to complete the renovation.

4.3.3.1 Automatic Fire Sprinkler Systems

Every mid-rise building must be protected throughout by an automatic fire sprinkler system that is designed and installed in conformance with latest adopted Edition of NFPA 13 and in accordance with the following:

1. A control valve and a water flow alarm must be provided for each floor. Each control valve and flow alarm must be electronically supervised.
2. Every mid-rise building must be provided with a class I standpipe system that is interconnected with the fire sprinkler system. The system must consist of two and one-half-inch hose valves that must be located in each stair enclosure, on every floor level.

   Two hose outlets must also be located on the roof, outside of each stair shaft enclosure that penetrates the roof. The standpipe system must be designed, installed, and tested in accordance with the NFPA 14 edition as referenced in chapter 80 of the California Fire Code.

3. Fire Department standpipe connections and valves serving the floor must be within the vestibule and located in a manner so as not to obstruct egress when hose lines are connected and charged.

4.3.3.2 Fire Alarm Systems

Smoke detectors must be provided in accordance with this section. Smoke detectors must be connected to an automatic fire alarm system installed in accordance with the NFPA 72 edition as referenced in Chapter 80 of the California Fire Code. The actuation of any device required by this section shall operate the emergency voice alarm signaling system and shall operate all equipment necessary to prevent the circulation of smoke through air return and exhaust ductwork. Smoke detectors shall be located as follows:

1. In every mechanical equipment, electrical, transformer, telephone equipment, unmanned computer equipment, elevator machinery or similar room and in all elevator lobbies. Elevator lobby detectors shall be connected to an alarm verification zone or be listed as a releasing device.
2. In the main return-air and exhaust-air plenum of each air-conditioning system. The smoke detector shall be located in a serviceable area downstream of the last duct inlet.
3. At each connection to a vertical duct or riser serving two or more stories from a return-air duct or plenum of an air conditioning system. In R,- 1 R-2 Occupancies, an approved smoke detector is allowed to be used in each return-air riser carrying not more than 5,000 cubic feet per minute and serving not more than 10 air inlet openings.
4. For Group R,- 1 and R-2 Occupancies, in all corridors serving as a means of egress for an occupant load for 10 or more persons.

An approved and listed, automatic and manual, fully addressable and electronically supervised fire alarm system shall be provided in conformance with this code and California Building Code and NFPA 72 edition as reference in Chapter 80 of the California Fire Code.

4.3.3.3 Building Access

Building access must be provided and approved by the fire chief.

4.3.3.4 Emergency Voice Alarm Signaling System

The operation of any automatic fire detector or water flow device must automatically sound an alert tone followed by a pre-recorded voice instruction giving appropriate information and direction on a general or selective basis to the following terminal areas:

1. Elevators
2. Elevator lobbies
3. Corridors
4. Exit Stairways
5. Rooms and tenant spaces
6. Dwelling units
7. Hotel Guest Rooms
8. Areas designated as safe refuge within the building

4.3.3.5 Fire Command Center

A fire command center for Fire Department operations shall be provided. The location and accessibility of the fire command center shall be approved by the Fire Code Official. The room shall be separated from the remainder of the building by not less than one-hour, fire barrier and be located on an exterior wall, not within building. The room shall be a minimum of 200 square feet with a minimum dimension of 10 feet. It shall contain the following facilities as a minimum:

1. Voice alarm and public address panels
2. Fire Department communications panel
3. Fire alarm annunciator panel
4. Elevator enunciator panel (when Building exceeds 55 feet in height)
5. Status indicators and controls of air handling systems (Stairwell Pressurization)
6. Controls for unlocking stairwell doors
7. Fire Pump status indicators (if required)
8. Complete building plans set
9. Worktable
10. Elevator control switches for switching of emergency power

4.3.3.6 Annunciation Identification

Control panels in the central control station shall be permanently identified as to their function. Water flow, automatic fire detection and manually activated fire alarms, supervisory and trouble signals shall be monitored by an approved, UL listed Central Monitoring Station and annunciated in the Fire Command Center by means of an audible and visual indicator. For the purposes of annunciation, zoning shall be in accordance with the following:

1. When the system serves more than one building, each building shall be considered as separate.
2. Each floor in a building shall be a separate zone.
3. When one or more risers serve the same floor, each riser shall be a separate zone.

4.3.3.7 Elevators

Elevators and elevator lobbies shall comply with the provisions of Chapter 30 of the California Building Code. At least one elevator cab shall be assigned for fire department use and shall serve all floors of the building. This cab shall be provided large enough to accommodate an ambulance type stretcher in accordance with section 3002.4 of the California Building Code.

4.3.3.8 Fire Department Communication System

An approved two-way, Fire Department communication system designed and installed in accordance with the NFPA 72 edition as referenced in Chapter 80 of the California Fire Code shall be provided for Fire Department use per section 907.2.13.2.

New structure shall be tested for Emergency responder radio coverage in accordance with Section 510 of the California Fire Code.

4.3.3.9 Means of Egress

In addition to the requirements of Chapter 10, egress components of Mid-Rise buildings shall comply with the following:

Extent of Enclosure

Stairway enclosures must be continuous and must fully enclose all portions of the stairway. Exit enclosure shall exit directly to the exterior of the building or include an exit passageway on the ground floor, leading to the exterior of the building. Each exit enclosure shall extend through the roof and be provided with a door that leads onto the roof.

Pressurized Enclosures and Stairways

All required stairways and enclosures in a mid-rise building shall be pressurized as specified in the California Building Code Section 909. Pressurized Stairways shall be designed to exhaust smoke manually when needed.

Vestibules

Pressurized stairway enclosures, serving mid-rise buildings shall be provided with a pressurized entrance vestibule on each floor that complies with the California Building Code Section 909.

Pressure Differences

The minimum pressure difference within a vestibule shall be in accordance with the California Building Code Section 909.

Locking of Stairway Doors

All stairway doors that are locked to prohibit access from the interior of the stairway shall have the capability of being unlocked simultaneously, without unlatching, upon a signal from the fire control room. Upon failure of normal electrical service, or activation of any fire alarm, the locking mechanism must automatically retract to the unlocked position.

A telephone or other two-way communication system connected to an approved emergency service which operates continuously shall be provided at not less than every third floor in each required exit stairway vestibule.

Approved signage shall be provided in each stairwell vestibule stating doors are locked, on which floor(s) entry may be made, and on which floor(s) a telephone is located. Hardware for locking of stairway vestibule doors shall be State Fire Marshal listed and approved by the Fire Code Official by permit before installation. Stairway doors located between the vestibules and stairway shaft shall not be locked.

4.4 Ongoing Building and Infrastructure Maintenance

The Pacific Project HOA shall be responsible for long-term funding and maintenance of private roads and fire protection systems, including fire sprinklers and private fire hydrants.

4.5 Pre-Construction Requirements

Before bringing combustible materials onto the site, utilities shall be in place, fire hydrants operational, an approved all-weather roadway in place, and fuel modification zones established and approved.

4.6 Defensible Space and Vegetation Management

4.6.1 Fuel Modification Zones

Because the entire site will be provided annual weed abatement, there is no requirement for fuel modification zones. The Project owners will provide sitewide maintenance in the landscaped areas and will abate the preserved portions of the site by providing appropriate vegetation management to the satisfaction of the SMFD.

4.6.1.1 Vegetation Management

Pre-Construction Requirements

- Perimeter vegetation management areas must be implemented and approved by the SMFD before combustible materials being brought on site.
- Existing flammable vegetation shall be reduced by 50% on vacant lots upon commencement of construction.

- Dead fuel, ladder fuel (fuel which can spread fire from the ground to trees), and downed fuel shall be removed and trees/shrubs shall be properly limbed, pruned, and spaced per this plan.

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 SMFD Undesirable Species Plant List (Appendix D) are unacceptable from a fire safety standpoint and shall not be planted on the site unless otherwise approved by the SMFD.

4.6.2 Habitat Area Maintenance

Preserved habitat vegetation management shall be completed annually no later than June 1st of each year and more often as needed for fire safety, as determined by the SMFD. Year-to-year vegetation management will vary depending on the precipitation but will occur no later than June 1st. The Project management shall be responsible for all vegetation management throughout the common landscape areas of the Project site. The Pacific Project HOA shall be responsible for ensuring long-term funding and ongoing compliance with SMFD-required habitat area vegetation maintenance.

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5 Conclusion

This FPP is submitted in support of an application for the Pacific Project in San Marcos. It is submitted in compliance with the requirements of the SMFD and City Fire Code. The requirements in this document meet fire safety, building design elements, and landscaping recommendations of the SMFD. Fire and Building Codes and other local, county, and state regulations in effect at the time of each building permit application supersede these recommendations unless the FPP recommendation is more restrictive.

The Project is within an area that has a low wildfire and vegetation fire hazard with a corresponding low wildfire risk and therefore, it is unlikely that the Project's structures and occupants would be subject to property loss or personal harm from a wildfire event. However, there are no guarantees that fire will not occur in the area or that fire will not damage property or cause harm to persons or their property. Implementation of the required construction features provided by the applicable codes summarized in this FPP will accomplish the goal of this FPP to assist firefighters in their efforts to protect these structures and reduce the fire risk associated with this Project. For maximum benefit, the developer, contractors, engineers, and architects are responsible for the proper implementation of the concepts and requirements set forth in this report. Residents and/or owners are responsible to maintain their structures and landscaping as required by this report, the applicable Fire Code, and the SMFD.

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6 List of Preparers

Project Manager
Michael Huff
Fire Protection Planner; San Diego County California Environmental Quality Act Consultant List
Dudek

Plan Preparer
Lisa Maier
Fire Protection Analyst
Dudek

Computer Aided Design/Drafting
Lesley Terry
CADD Specialist
Dudek

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Appendix A
Photograph Log

Photograph 1. View of on-site chaparral and scrub vegetation standing in the northeastern corner of the Project site along S. Las Posas Road and La Mirada Drive looking south along the eastern property boundary.

Photograph 2. View of on-site chaparral and scrub vegetation within the vernal pool areas in the northern portion of the Project site, standing in the northeastern corner of the along S. Las Posas Road and La Mirada Drive looking west/southwest.

Photograph 3. View of on-site chaparral and scrub vegetation within the vernal pool areas in the northern portion of the Project site standing in the northeastern corner of the Project site along S. Las Posas Road and La Mirada Drive looking northwest up the northern property boundary.

Photograph 4. View of on-site chaparral and scrub vegetation within the vernal pool areas in the northern portion of the Project site, standing in the northeastern corner of the along S. Las Posas Road and La Mirada Drive looking west/southwest.

Photograph 5. View of on-site chaparral and scrub vegetation within the vernal pool areas in the northern portion of the Project site, standing in the northeastern corner of the along S. Las Posas Road and La Mirada Drive looking west towards S. Pacific Street.

Photograph 6. View of on-site chaparral and scrub vegetation within the vernal pool areas in the northern portion of the Project site, standing in the northeastern corner of the along S. Las Posas Road and La Mirada Drive looking west towards S. Pacific Street.

Photograph 7. View of on-site chaparral and scrub vegetation within the vernal pool areas in the northern portion of the Project site, standing along La Mirada Drive looking southwest towards S. Pacific Street.

Photograph 8. View of on-site low-load grass-scrub vegetation in the northwestern portion of the Project site, standing in the northwestern corner of the along S. Pacific Street and La Mirada Drive looking east towards S. Las Posas Road.

Photograph 9. View of on-site low-load grass-scrub vegetation in the northwestern portion of the Project site, standing in the northwestern corner of the along S. Pacific Street and La Mirada Drive looking south/southeast over the Project site towards S. Las Posas Road and Linda Vista Drive.

Photograph 10. View of on-site low-load grass-scrub vegetation along La Mirada Drive looking west towards S. Pacific Street.

Photograph 11. View of on-site low-load grass-scrub vegetation in the northwestern portion of the Project site, standing on the west side of S. Pacific Street looking east towards the Project site.

Photograph 12. View of on-site low-load grass/grass-shrub vegetation in the northwestern portion of the Project site, standing in the northwestern corner of the along S. Pacific Street and La Mirada Drive looking east along the northern property border.

Photograph 13. View of on-site low-load grass vegetation in the southwestern portion of the Project site, standing in the southwest corner of the along S. Pacific Street and Linda Vista Drive looking east across the southern portion of the Project site.

Photograph 14. View of on-site low-load grass/grass-shrub vegetation in the northwestern portion of the Project site, standing in the northwestern corner of the along S. Pacific Street and La Mirada Drive looking east along the northern property border.

Photograph 15. View of on-site low-load grass vegetation in the southwestern portion of the Project site, standing in the southwest corner of the along S. Pacific Street and Linda Vista Drive looking north across the western portion of the Project site.

Photograph 16. View of on-site low-load grass vegetation in the southwestern portion of the Project site, standing in the southwest corner of the along S. Pacific Street and Linda Vista Drive looking east across the southern portion of the Project site.

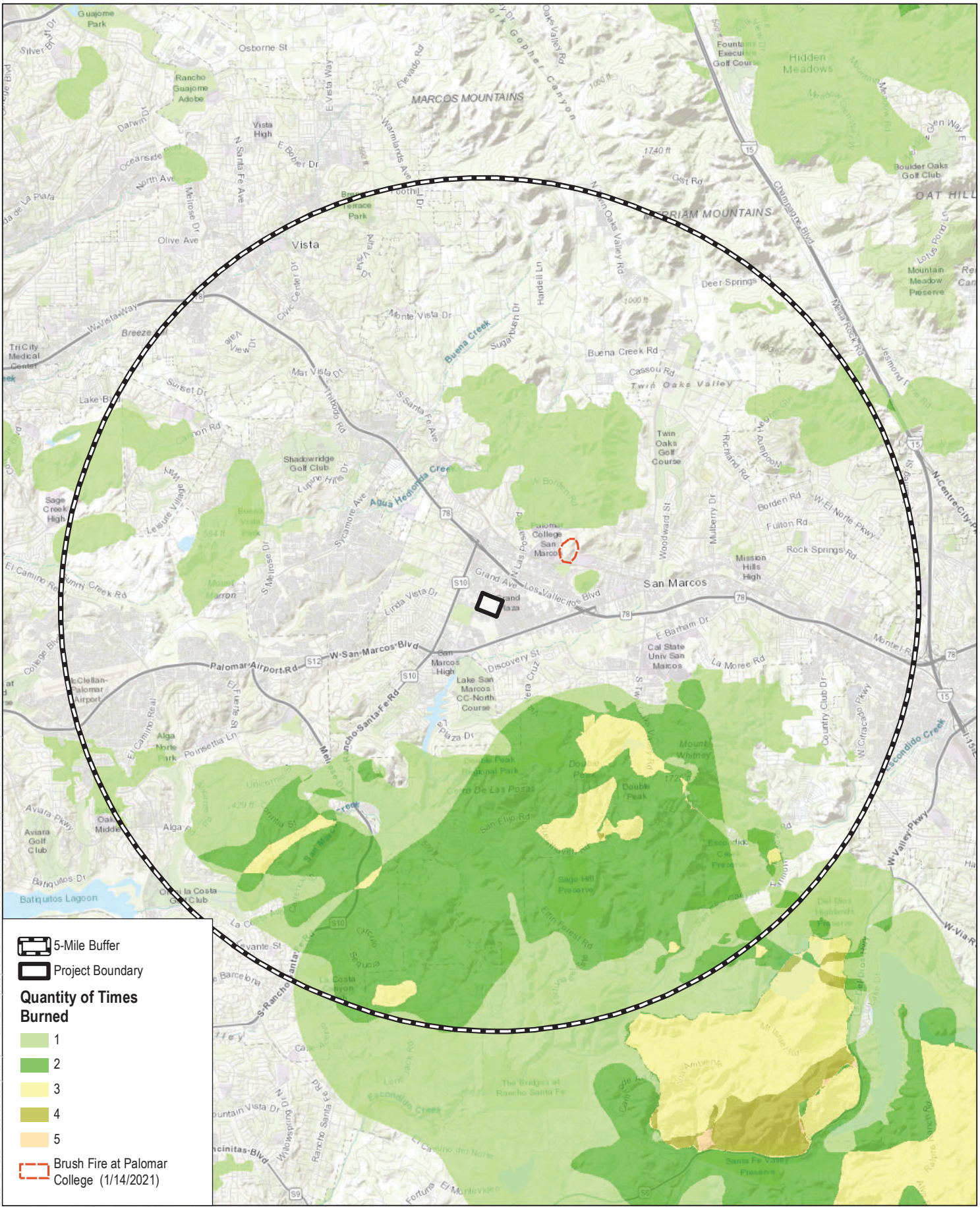
Photograph 17. View of on-site low-load grass vegetation in the southern portion of the Project site, standing along Linda Vista Drive looking east across the southern portion of the Project site towards S. Las Posas Road.

Photograph 18. View of on-site low-load grass vegetation in the southern portion of the Project site, standing along Linda Vista Drive looking east across the southern portion of the Project site towards the southeastern portion of the Project site along S. Las Posas Road.

Photograph 19. View of on-site low-load grass vegetation in the southern portion of the Project site, standing along Linda Vista Drive looking east across the southern portion of the Project site towards the southeastern portion of the Project site along S. Las Posas Road.

Photograph 20. View of on-site low-load grass vegetation in the southern portion of the Project site, standing along Linda Vista Drive looking north across the Project site.

Appendix B
Fire History



SOURCE: BASE MAP- ESRI MAPPING SERVICE; FIRE DATA-CALFIRE 2020

DUDEK

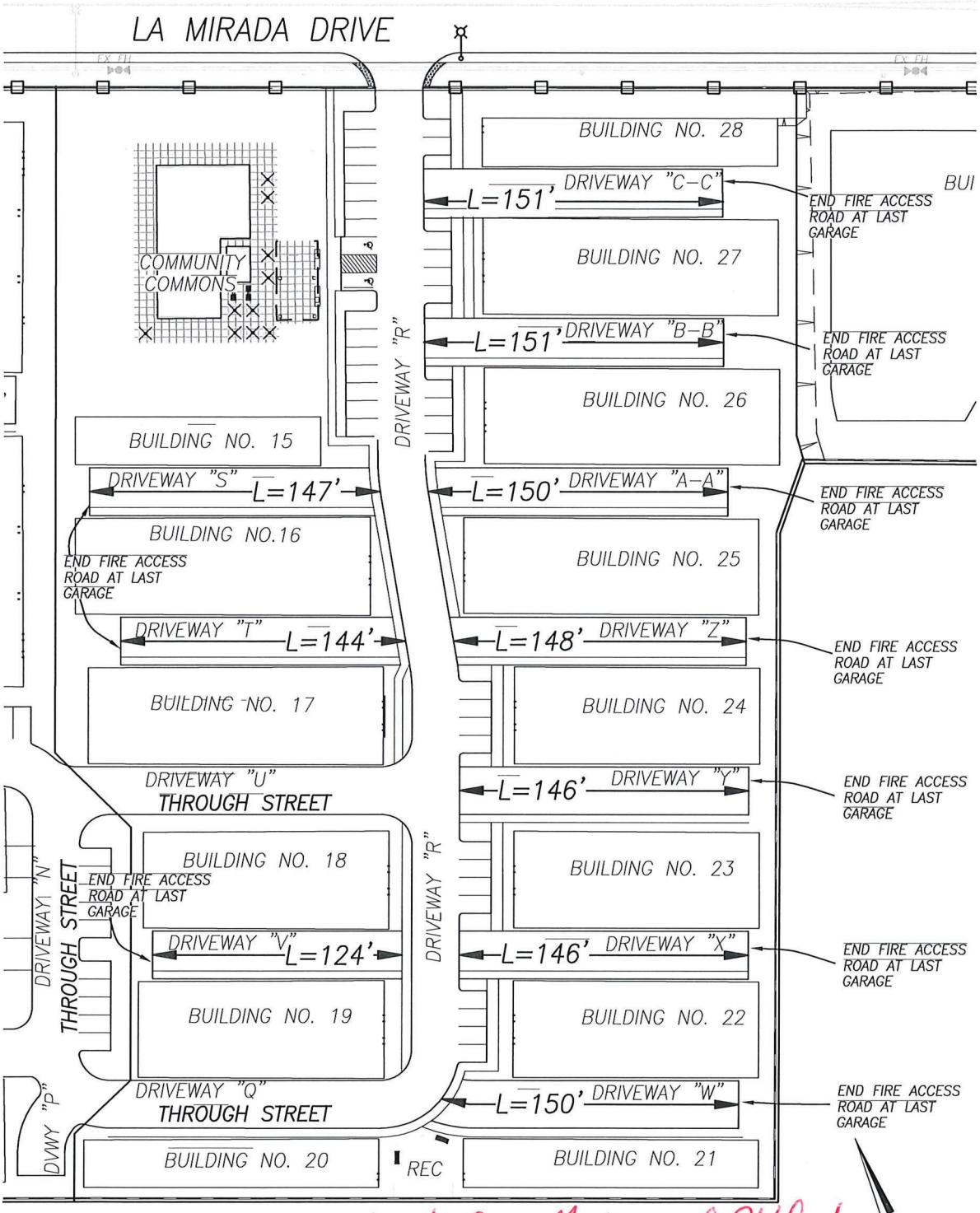
0 1 2 Miles

APPENDIX B

Fire History Map

Fire Protection Plan for Pacific Project

Appendix C
SMFD Approved Dead End Road Lengths



ALL Driveways, AND streets to Be A Minimum of 24 feet. WIDE.

Fire Marshal 1-26-23

L=146' DENOTES LENGTH OF FIRE ACCESS ROAD FROM THE EDGE OF TRAVELED WAY OF DRIVEWAY "R" TO THE END OF THE FIRE ROAD

Lundstrom
Engineering and Surveying, Inc.
3333 Camino del Rio South, #330 • San Diego, CA 92108
Phone (619) 814-1220 • Fax (619) 641-5910

PACIFIC

VILLAS EMERGENCY ACCESS ROAD LENGTHS

JOB NO.: L300-14	DATE: 01-25-23	SCALE: 1"=50'	SHEET: 1 OF 1

Appendix D
SMFD Undesirable Species Plant List

UNDESIRABLE PLANT SPECIES LIST

Both native and ornamental plants can be highly flammable. Flammable plant material in your landscape can increase the fire risk directly around your home. Certain plants are considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be either physical or chemical. For instance, physical properties would include large amounts of dead material retained within the plant, such as twigs, needles, and leaves; rough or peeling bark; and production of copious amounts of litter. Chemical properties include the presence of volatile substances, such as oils, resins, waxes, and pitch. Plant material with these characteristics should not be planted close to your structures. The following plants have been declared "undesirable" within I50-foot fuel modification zone surrounding all structures. All vegetation is listed alphabetically by botanical name, followed by the common name. The following plants have been declared "undesirable" within I50-foot fuel modification zone surrounding all structures. All vegetation is listed alphabetically by botanical name, followed by the common name.

Natives:

Adenostoma Jasciculatum - Chamise
Adenostoma Sparsifolium - Red Shank
Artemesia califomica - California Sagebrush
Eriogonum Jasciculatum - Common Buckwheat
Heterotheca grandiflora - Telegraphweed
Rhus laurina - Laurel Sumac
Salvia species - Sage (native species)

Ornamentals:

Abies species - Fir Trees
Acacia redolens - Prostrate Acacia*
Agonis juniperina - Juniper Myrtle
Araucaria species - Monkey Puzzle, Bunya-Bunya, Norfolk Island Pine*
Arundo donax - Giant Cane
Bambusa species - Bamboo*
Calocedrus decurrens- Incense Cedar
Cedrus species - Cedars*
Chamaecyparis species - False Cedars
Chamaerops humils - Mediterranean Fan Palm*

Cryptomeria japonica - Japanese Cryptomeria
Cortadera species - Pampas Grass
Cupressocyparis leylandii ~ Leylandii Cypress*
Cupressus species - Cypress*
Cytisus species - Scotch Broom, French Broom
Eucalyptus Species - Eucalyptus*
Juniperus species - Junipers*
Miscanthus species- Silver Grass
Muehlenbergia species - Deer Grass*
Pennisetum setaceum - Fountain grass, including all cultivars and varieties*
Phoenix species - Date Palms*
Pinus species - Pines*
Rosmarinus offcinalis - Rosemary*
Tecoma capensis - Cape Honeysuckle*
Trachycarus fortunei - Windmll Palm*
WashinRtonia species - Fan Palms*

*Except as permitted in the planting lists and San Marcos Fire Department landscape Standards

Note:
1. To view a picture of listed plants, go to www.wikipedia.org and search for the Botanical
Name of the plant.
2. If the owner wishes to retain these plants, they must be adequately maintained (pruning, thinning, irrigation, litter removal, and or weeding) to reduce the potential for spreading a fire through the landscape.

References:
County of Los Angeles Fire Department. Fuel Modification Plan Guidelines. July 2011.
County of San Diego, Department of Planning and Land Use. Water Efficient Landscape Design
Manual. February 2010.

In an effort to protect homes from a future devastating wildland fire, the San Marcos Fire Department has put together this booklet. You will find valuable information pertaining to both desirable and undesirable trees, shrubs, ground covers, vines and palm trees. The goal of this brochure is to educate the public on issues pertaining to landscaping and to keep their homes safe. Please feel free to contact us if you have any questions, comments, or concerns.

Canopy Trees: Broad spreading trees that make good accent trees.			
Grow 25-50 ft. tall and should be spaced 30-40 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Albizia julibrissin	Silk Floss	10	D
Chorisia speciosa	Floss Silk Tree	10	D
Cinnamomum camphora	Camphor	10	E
Erythrinia species	Coral	10	D
Ficus species		10	D
Jacaranda mimosifolia		10	D
Koelreuteria paniculate	Golden Raintree	10	D
Melaleuca linarifolia	Paperbark	10	E
Pinus halepensis	Aleppo Pine	30	E
Platanus acerfolia	Sycamore	10	D
Phoenix canariensis	Canary Island Date Palm	30	E
Podacarpus gracilior	Fern Pine	10	E
Pyrus kawakami	Evergreen Pear	10	E
Quercus species	Oak	10	E
Rhus lancea	African Sumac	10	E
Robinia pseudoacacia	Black Locust	10	D
Schinus species	Pepper Tree	30	E
Spathodea campanulata	African Tulip Tree	10	D
Tipuana tipu	Tipu Tree	10	D
Ulmus parvifolia	Chinese Elm	10	D
Zelkova serrata	Sawleaf Zelkova	10	D

Vertical Growing Trees: Upright character and are good choices for narrow areas.			
Grow up to 30 ft. tall and should be spaced 20-30 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Betula pendula	European White Birch	10	D
Brachychiton populeneus	Bottle Tree	10	D
Callistemon viminalis	Weeping Bottle Brush Tree	30	E
Dracena Drago	Dragon Tree	10	E
Hymenosporum flavum	Sweetshade Tree	10	E
Maytenus boaria	Mayten	10	E
Melaleuca quinquenervia	Paperbark Tree	10	E
Metrosideros tomentosa	New Zealand Christmas Tree	10	E
Tristania conferta	Brisbane Box Tree	10	E

Ornamental Trees: Various canopy heights and widths that serve many uses such as accent trees.			
Grow 15-40 ft. tall and should be spaced 20-25 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Acer palmatum	Japanese Maple	10	D
Agonis flexuosa	Peppermint Tree	10	E
Arbutus unedo	Strawberry Tree	10	E
Avocado species		30	E
Bauhinia species	Orchid tree	10	D
Cassia leptophylla	Gold Medallion Tree	10	D
Cercis candensis	Redbud	10	D
Citrus species		10	E
Cupniopsis anacardiodes	Carrotwood tree	10	E
Geijera parvifolia	Australian Willow	10	E
Lagerstroemia indica	Crape myrtle	10	D
Lagunaria patersonii	Primrose Tree	10	E
Magnolia species		10	E/D
Olea europaea	Olive Tree	10	E
Pistacia chinensis	Chinese Pistache	10	D
Prunus species		10	E/D

Pyrus species	Ornamental Pear	10	E/D
Tabebuia species	Trumpet Tree	10	E/D

Low-Multi Branching Trees: Large shrubs and small tree forms good for under-story screening.			
Grow 10-25 ft. tall and should be spaced 15-20 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Acacia species		30	E
Eriobotrya deflexa	Bronze Loquat	10	E
Feijoa sellowiana	Guava	10	E
Melalueca nesophila	Pink Melalueca	10	E
Myoporum laetum		10	E
Pittosporum undulatum	Victorian Box	10	E
Punica granatum	Pomegranate	10	D
Thevitia thevetiodes	Giant Thevitia	10	E

Tall Skyline Trees: Dramatic Silhouettes against the skyline.			
Grow 40-70 ft. tall and should be spaced 30-40 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Acer macrophyllum	Bigleaf Maple	10	D
Alnus rhombifolia	White Alder tree	10	D
Cedrus species	Cedar tree	30	E
Eucalyptus species		30	E
Fraxinus species	Ash tree	10	D
Grevilla robusta	Silk Oak	10	D
Liriodendron tulipifera	Tulip Tree	10	D
Liquidambar species	Sweet gum	10	D
Pinus canariensis	Canary Island Pine	30	E
Pinus torreyana	Torrey Pine	30	E
Platanus racemosa	Sycamore	10	D
Populus fremonti	Western Cottonwood	10	D
Populus nigri	Lombardy Poplar	10	D

Palm Trees: Vary from single to multiple trunks.			
Grow 20-100 ft. tall and should be spaced 20-40 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Archontophoenix alexandrae	Alexandra Palm	10	E
Archontophoenix cunninghamiana	King Palm	10	E
Brahea armata	Blue Hesper Palm	30	E
Brahea edulis	Guadalupe Palm	30	E
Chamaerops humilis	Mediterranean Fan Palm	30	E
Cycas revoluta	Sago Palm	10	E
Howea forsteriana	Kentia Palm	30	E
Phoenix canariensis	Canary Island Date Palm	30	E
Phoenix dactylifera	Date Palm	30	E
Phoenix reclinata	Senegal Date Palm	30	E
Phoenix roebelenii	Pygmy Date Palm	30	E
Syagrus romanzoffianum	Queen Palm	10	E
Trachycarpus fortunei	Windmill Palm	30	E
Washingtonia filifera	California Fan Palm	30	E
Washingtonia robusta	Mexican Fan Palm	30	E
All other Palm species	Various Palms	30	E

NOTE:

** This booklet is intended to guide the public on what types of trees and shrubs are acceptable to the San Marcos Fire Department. Other trees and shrubs not listed are still acceptable to use upon approval by the San Marcos Fire Department.

** Trees listed as requiring 30' spacing from dripline to structure are considered non-fire resistive trees by the San Marcos Fire Department. Consult a design professional or the San Marcos Fire Department for site specific questions regarding tree placement

** Trees that grow near power lines pose a potential electrical hazard. San Diego Gas & Electric (SDG&E) is required by law to maintain minimum clearances between all vegetation and power lines. No tree should be allowed to grow within 10 feet of electrical conductors. SDG&E provides a suggested species list of trees that are appropriate to grow under or adjacent to power lines. This list, along with other information regarding SDG&E Vegetation Management, can be found at http://sdge.com/safety/treesafety.