MITIGATED NEGATIVE DECLARATION

1.	Name or description of project:	Tyler St. Subdivision. -- Applications for a Tentative Map (TM2017-1), Development Review Permit (DR2017-1), and Environmental Initial Study (AEIS2017-8) for the development of the Tyler Street Subdivision (project). The project involves the construction of 14 single-family dwellings and the extension of Tyler Street, a public road, on 7.58 acres (8.41 acres total disturbed) of a 27.35-acre property. The remainder of the site would be preserved. The project site is located at the current southern terminus of Tyler Street, further identified by Assessor's Parcel Numbers 386-290-08, -09, -10, -13, -14, -20, -22, -24, -26.
2.	Project Location – Identify street address and cross streets or attach a map showing project site (preferably a USGS 15' or 7 1/2' topographical map identified by quadrangle name):	Unaddressed Assessor's Parcel Numbers 386-290-08, -09, -10, -13, -14, -20, -22, -24, -26. The cross streets are Tyler Street and Mesa Heights Road.
3.	Entity or Person undertaking project:	
A.	Entity	
(1)	Name:	
(2)	Address:	
B.	Other (Private)	
(1)	Name:	Mark Steve
(2)	Address:	4204 Jutland Drive, Suite A2, San Diego, CA 92117

The Lead Agency, having reviewed the Initial Study of this proposed project, having reviewed the written comments received prior to the public meeting of the Lead Agency, and having reviewed the recommendation of the Lead Agency's Staff, does hereby find and declare that the proposed project will not have a significant effect on the environment. A brief statement of the reasons supporting the Lead Agency's findings are as follows:

The project is compatible with the Santee General Plan in that the proposed single-family residential dwellings are within the prescribed density range of the R-1 Low Density Residential district and meet the development standards of the district including lot size, lot dimension, and setbacks. The project is also consistent with Objective 5.0 of the Housing Element which encourages a wide range of housing types by location, type of unit, and price as it will provide nine new detached single-family dwellings.

The Project site is physically suitable and has adequate infrastructure, including roads, water, sewerage, and electricity, to support the type of development and the density proposed. The Project would be developed in accordance with the Sustainable Santee Plan and will not contribute significantly to greenhouse gas emissions, nor frustrate the intent of state policy relative to greenhouse gas emissions.

All potentially significant environmental impacts can be mitigated to less than significant levels through implementation of the mitigation measures identified in the Initial Study. Therefore, the Project would not result in significant impacts to the environment.

The Lead Agency hereby finds that the Negative Declaration reflects its independent judgment. A copy of the Initial Study is attached.

The location and custodian of the documents and any other material which constitute the record of proceedings upon which the Lead Agency based its decision to adopt this Negative Declaration are as follows: Michael Coyne, Principal Planner City of Santee 10601 Magnolia Ave., Santee, CA 92071	
Phone No.:	(619) 258-4100 x160

Date Received
for Filing: _____

M. Coyne
Staff

(Clerk Stamp Here)

Principal Planner
Title

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U.S. FISH AND WILDLIFE SERVICE
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

CALIFORNIA DEPARTMENT OF
FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, California 92123

In Reply Refer to:
FWS/CDFW-2023-0016497

December 8, 2022
Sent Electronically

Doug Thomsen
Senior Planner
City of Santee
10601 Magnolia Avenue
Santee, California 92071

Subject: Proposed Tyler Street Subdivision Project draft Mitigated Negative Declaration (SCH 2022100498)

Dear Doug Thomsen:

A-1

The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife (Department), collectively referred to as the Wildlife Agencies, have reviewed the draft Mitigated Negative Declaration (MND) and associated documents for the proposed Tyler Street Subdivision (Project) received on October 25, 2022. The comments and project details referenced here are based on information provided in those documents, as well as a site visit on November 17, 2022, attended by the Wildlife Agencies and the City of Santee (City).

The primary concern and mandate of the Service is the protection of fish and wildlife resources and their habitats. The Service has legal responsibility for the welfare of migratory birds, anadromous fish, and threatened and endangered animals and plants occurring in the United States. The Service is also responsible for administering the Federal Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*), including habitat conservation plans (HCP) developed under section 10(a)(l)(B) of the Act. The Department is a Trustee Agency with jurisdiction over natural resources affected by the proposed project [California Environmental Quality Act (CEQA) Guidelines §15386] and is a Responsible Agency under CEQA Guidelines Section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA; Fish and Game Code §2050 *et seq.*) and Fish and Game Code Section 1600 *et seq.* The Department also administers the Natural Community Conservation Planning (NCCP) Program, a California regional habitat conservation planning program. The City is in the process of developing an NCCP/HCP Subarea Plan under the Multiple Species Conservation Program (MSCP) Subregional Plan; however, a Subarea Plan (SAP) has not yet been adopted by the City or permitted by the Service or the Department. The Wildlife Agencies continue to meet frequently with the City in an effort to complete the Subarea Plan, which will be brought forward for public review. Comments below are based on applicable regulations, those noted discussions, and the Draft SAP.

RESPONSE

A-1 This comment provides an introduction to the comment letter and provides the Wildlife Agencies' understanding of the proposed project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the MND. Therefore, no further response is required.

LETTER

RESPONSE

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The proposed Project is located on an undeveloped 27.35-acre site in the southwestern portion of the City near the existing southern terminus of Tyler Road. The proposed Project would include construction of 14 single-family homes, an extension of Tyler Road, and associated improvements. The remainder of the site (approximately 19.45 acres) would, as proposed, be preserved in two open space easements (referred to in project documents as Lots B and C). Existing surrounding land uses include residential neighborhoods to the north and west and natural open space with some lower density residential to the east and south. A 0.91-acre existing "Diegan sage scrub" easement to the Padre Dam Water District (Padre Dam Diegan sage scrub easement) occurs in the southeastern portion of the Project site.[1] Per the proposed project plans provided to us, Zone 1 and 2 fuel modification areas for the Project would be confined to the development footprint, except for some Zone 2 areas that would extend into portions of Lot C and the Padre Dam Diegan sage scrub easement. The proposed Lot C intersects an ephemeral drainage that runs along the eastern and northeastern boundary of the Project site; this drainage supports an area of willow scrub. Per conversations on November 17, 2022, with Doug Thomsen of the City's staff, the proposed Project has recently been modified such that no fuel modification zones or any construction fill are currently proposed within the ephemeral drainage area on Lot C or the noted Padre Dam Diegan sage scrub easement.

A-1

The Project site is dominated by a relatively steep ridgeline running east-to-west through the site, gradually sloping down to a more shallow-sloped area in the northern portion of the site. Natural community types mapped on-site include Diegan coastal sage scrub, southern mixed chaparral, native grassland, nonnative grassland, disturbed southern willow scrub, and disturbed habitat. Per the Biological Assessment Report for the Project (BLUE 2022), biological surveys conducted on the Project site in 2013 included protocol-level surveys for coastal California gnatcatcher [*Polioptila californica californica*; federally threatened, state species of special concern (SSC)] and Quino checkerspot butterfly (*Euphydryas editha quino*; federally endangered) in addition to general biological and rare plant surveys. An updated general biological survey was conducted in 2016 to confirm that the status of the site had not changed significantly since 2013. Substantial areas of cactus scrub [thickets of cholla (*Cylindropuntia prolifera*) and prickly pear (*Opuntia* spp.) dominated stands of Diegan coastal sage scrub] occurs on the south-facing slope of the Project site, as observed by Wildlife Agency and Santee staff in the field.

Sensitive plant species detected or with a high potential to occur on the Project site include San Diego viguiera [*Bahiopsis* (*Viguiera*) *laciniata*; California Rare Plant Rank (CRPR) List 4], San Diego goldenstar [*Bloomeria* (*Muilla*) *clevelandii*; CRPR 1B], decumbent goldenbush (*Isocoma menziesii* var. *decumbens*; CRPR 1B), and Palmer's grappling hook (*Harpagonella palmeri* var. *palmeri*; CRPR List 2). Sensitive wildlife species detected or with a high potential to occur on-site include coastal California gnatcatcher (one pair with an active nest in 2013), coastal cactus wren (*Campylorhynchus brunneicapillus*; state SSC), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; state watch list), Cooper's hawk (*Accipiter cooperii*; state watch list), Belding's orange-throated whiptail (*Aspidoscelis hyperythra*; state watch list), and coast horned lizard (*Phrynosoma blainvillii*; state SSC). Host plants for Quino checkerspot

[1] The Padre Dam Diegan sage scrub easement is a "permanent easement for the establishment, maintenance, preservation, and reestablishment of the Diegan sage scrub plant community."

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butterfly are present on-site. Similarly, a substantial number of host and nectaring plants for Hermes copper butterfly (*Lycaena hermes;* federally threatened) occur on-site. We consider both butterfly species as having a high potential to occur on the Project site. In addition, San Diego barrel cactus (*Ferocactus viridescens;* CRPR 2B.1) was observed on the south-facing slopes of the Project site by Wildlife Agency and Santee staffs.

A-1 No direct impacts to Diegan coastal sage scrub or cactus scrub are anticipated from the Project. Pursuant to the draft MND, impacts to sensitive plant and wildlife species would be reduced by siting the proposed development in what may potentially be a historically disturbed portion of the Project site and by implementing general biological mitigation measures during construction (e.g., biological monitors and temporary avoidance fencing). The Wildlife Agencies offer the following comments and recommendations to assist the City and the applicant in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources and to ensure the Project is consistent with the Draft SAP:

A-2
1. As proposed, the Project appears to meet the 30/70 development to preservation area ratio currently under discussion for the Draft SAP Standards Areas. The draft MND states that the Project site is not located within the Draft SAP Preserve and was not proposed for conservation under the plan; this was likely correct when the draft MND was released. The project area was shown as a Standards Area in a draft Preserve Map V12 (provided to the Wildlife Agencies on April 5, 2022) and as a Hardline Project in a more recent draft Preserve Map V13 (dated October 25, 2022). The final MND should clarify the status of the project site pursuant to the most recent version of the draft Subarea Plan as of the date of the final MND. Regardless of SAP mapping status, we recommend that the Project at a minimum meet the 30/70 development to preservation area ratio.

A-3
2. Per the draft MND, approximately 6.78 acres of sensitive habitats would be directly affected by the Project. Compensatory mitigation for these impacts is proposed by the applicant to occur off-site through the purchase of habitat mitigation credits. We are unclear as to why mitigation is currently proposed to occur off-site when a large proportion of the Project site is proposed to be preserved. We recommend the final MND require that the proposed Project provide for the permanent legal protection, biological monitoring, and ecological management in perpetuity of the 19.45 acres of the Project site that would not be directly developed.

A-4
3. Per the Biological Assessment Report and as observed in the field, the Project site supports California buckwheat (*Eriogonum fasciculatum*) and spiny redberry (*Rhamnus crocea*), the primary nectar source and host plants for the Hermes copper butterfly. We recommend focused surveys for Hermes copper butterfly be performed on the Project site, following the County of San Diego (County) guidance (see Attachment B, page 73, of the County's Report Format and Content Requirement for Biological Resources). If the site is determined to be occupied or if surveys are inconclusive, we recommend that final MND include a mitigation measure to avoid and minimize impacts to potentially suitable Hermes copper butterfly habitat by establishing appropriate buffers

RESPONSE

A-2 The project meets the 30/70 development to preservation area ratio. Of the 27.35 acres onsite, a total of approximately 29% of the Property, totaling 8.41 acres, are proposed to be impacted by the Project. A total of 19.45 acres (71%) of habitat are avoided and to be preserved by the Project. According to the current version of the draft Preserve map, the proposed project site is located in the Upland Standards Area. The Final MND has been updated to reflect this change.

A-3 Compensatory mitigation for these impacts is no longer proposed by the applicant to occur off-site through the purchase of habitat mitigation credits. All mitigation will be completed onsite with the preservation of the avoided 19.45 acres (approximately 71% of the property) and placement of a managed Conservation Easement (CE) over those 19.45 acres. (See pages 5, 24, 31 of what.) The Final MND has been updated to reflect this change.

A-4 Following the County of San Diego (County) guidance, project biologist Mike Jefferson conducted the six weekly surveys (negative), no more than one per week, over June/July for Hermes copper butterfly on the Project site. None were observed. Due to the lack of high-quality habitat and adjacent observations, none are expected to occur. (See pages 6 and7 of what). Based on surveys conducted onsite, the site is not considered occupied by the Hermes copper butterfly. Placement of 19.45 acres of habitat in a Conservation Easement will preserve 71% of the property including patches of spiny redberry and California buckwheat. Buffers adjacent to the project footprint are included in the project to conform to the Fire Code. A condition of approval has been added to the project that reads: "Prior to approval of the grading permit, the applicant shall add a note onto the landscape plans that states 'Project-related landscaping shall not include exotic plant species that may be invasive to native habitats. Invasive exotic plant species include those listed on the California Invasive Plant Council's Invasive Plant Inventory. Any planting stock to be

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A-4 and management around patches of spiny redberry and California buckwheat adjacent to the Project footprint. Such measures should provide for reduced propagation of Argentine ants within preserve areas adjacent to the proposed development, including elimination of irrigated landscaping and minimization of new brow ditches near preserve areas. These minimization measures would likely also benefit coast horned lizards through improved conservation of native ants within preserve areas.

A-5 4. The Biological Assessment Report identifies the presence of dot-seed plantain (*Plantago erecta*), a primary host plant for the Quino checkerspot butterfly, as occurring on-site. Focused surveys for Quino checkerspot butterflies were conducted on the site in 2013, and the species was not observed. Quino checkerspot butterflies can be difficult to detect in specific habitat patches because in some years no adults may be present (the most easily observed life stage), and larvae (caterpillars) are capable of remaining dormant for more than one year. Quino checkerspot butterflies are also capable of recolonizing sites from fairly long distances, at least 1 kilometer (0.6 mile) away. Therefore, we recommend updated focused surveys for this species be performed on the Project site.[2]

A-6 5. Figure 7 of the Biological Assessment Report includes mapped locations of "jewel flower," but the draft MND and Biological Assessment Report make no mention of this species. We recommend the final MND clarify what sensitive species is being represented on the map and include it in the list of sensitive plant species observed on the Project site.

A-7 6. Per the draft MND, approximately 0.61 acre of the total 1.24 acres of native grassland on-site would be directly affected by the Project.[3] The Wildlife Agencies are not aware of any native grassland mitigation credits available for purchase in San Diego County. Consistent with section 5.5.1.1 of the draft SAP, we recommend the City and applicant avoid impacts to native grassland (valley needlegrass grassland) to the extent practicable and incorporate restoration and enhancement within non-native grassland and native grassland areas in the on-site preserve as in-kind mitigation for impacts to this sensitive habitat. This restoration and enhancement should include native lily (*Lilium* sp.) and perennial bunch grass (e.g., *Vulpia* sp.) salvage from the project

[2] Chapter 3 of the draft Santee Subarea Plan states "During implementation of the Subarea Plan, project surveys will be completed to document habitat and species presence on the ground prior to initiation of a Covered Activity to determine appropriate avoidance, minimization, and mitigation measures." Chapter 5 of the Subarea Plan also states under species-specific conservation standards that where suitable habitat for a covered species is found focused surveys must be conducted as a component of CEQA review.

[3] Note that the Wildlife Agencies generally define grasslands consistent with the following: "Vegetation scientists at NatureServe, the California Native Plant Society, and CDFW determine non-native [grassland] stands based on a rule of at least 90% cover of non-native species without evenly distributed or diverse native forbs and grasses at any time in the growing season. Conversely, a stand is considered native [grassland] if 10% or more relative cover consists of native taxa that are evenly distributed in the stand and present at any time during growing season." (CDFW 2022). Wildlife Agency staff observed substantial areas of valley needlegrass grassland in northern portion of the site on November 17, 2022, consistent with vegetation communities as described in Oberbauer *et al.* (2008). Please also see Sproul *et al.* (2011) regarding definitions of "vegetation dominated by herbs."

RESPONSE

brought onto the project site for landscaping shall be first inspected by the landscape architect to ensure it is free of pest species that could invade natural areas, including but not limited to, Argentine ants (Linepithema humile)'". No additional mitigation is required for the Hermes copper butterfly.

A-5 Protocol surveys for the Quino checkerspot butterfly were conducted including all areas supporting Plantago erecta. No Quino checkerspot butterfly were found. The site is considered unoccupied. Due to the historic lack of quino observations onsite and in the region, additional protocol surveys or mitigation is not required.

A-6 The final MND clarifies what sensitive species are being represented on the map and jewel flower has been included in the list of sensitive plant species observed on the Project site, as requested. (See page 18 of the Biological Assessment and page 15 of the MND/IS).

A-7 Section 5.5.1.1 of the draft SAP is not available to the public for review at this time. The Project has been designed to avoid impacts to native grassland (valley needlegrass grassland) to the greatest extent practicable, and mitigation for the Project is the dedication of approximately 71% of the property as open space. A Conservation Easement will be established for the open space area which will require general stewardship of the property (i.e., trash cleanup and access control). Prior to grading, the applicant will prepare a long-term management plan for the open space. The Homeowners Association will be required to manage the Conservation Easement and long-term management plan until the Subarea Plan is approved, take permits are issued and a permanent Preserve Manager for this property is established. No additional mitigation is required. (See page 31 of the Biological Assessment).

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A-7 footprint, ongoing invasive exotic plant control, and closure and restoration of unauthorized trails in the Project site preserve grassland areas.

A-8 7. As noted above, it is our understanding from City staff that the proposed Project has been recently modified to avoid direct footprint impacts to the on-site Padre Dam Diegan sage scrub easement. Similarly, modifications to the Project's fuel modification zones and fill slopes to protect biological resources, including minimizing potential impacts to the ephemeral drainage area on site, have recently been made to the proposed Project. These important changes should be confirmed and detailed within the final MND.

A-9 8. Page 5 of the Biological Assessment Report indicates that impacts to nesting migratory birds and raptors will be mitigated by limiting clearing activities to outside the standard avian breeding season (February 1–August 31) unless preconstruction surveys indicate that no nesting birds are present within 300–500 feet of the impact area. We recommend this mitigation measure be incorporated in the final MND for the proposed Project.

A-10 9. Focused species surveys should be performed for western burrowing owl (*Athene cunicularia* ssp. *hypugaea*) on the Project site, consistent with section 5.5.8.1. of the draft SAP. Similarly, focused surveys for the least Bell's vireo (*Vireo bellii pusillus*; federally and state endangered) should be performed within the willow scrub/ephemeral drainage area in and near proposed Lot C.

A-11 10. The draft MND acknowledges that the Project site is actively used by the surrounding residential community for unauthorized recreation (e.g. hiking, biking, pet walking) and contains multiple unauthorized trails. Given the presence of occupied California gnatcatcher and cactus wren habitat on-site, as well as potential Quino and Hermes copper butterfly habitat and native grasses, any public access should be located outside of the preserve areas. The Wildlife Agencies are willing to work with the City to identify compatible public access within the development footprint (e.g., within the fuel modification zone), if needed. The final MND should further identify what measures will be put in place to prevent recreational impacts within the on-site preserved areas, such as: restoration of unauthorized trails, gating of the proposed utility easement access road through the extension of Tyler Street, and elimination of any public access to the preserve portion of the site from the proposed Project.

A-12 11. The final MND should include details on how the management of the on-site preserve will be conducted and funded in perpetuity. A site-specific resource management plan, including projected costs, will be needed to accurately identify funding needs. The long-term funding and manager for the preserve portion of the property should also be identified. Additionally, we recommend use of a conservation easement consistent with California Civil Code 815, *et seq.*, versus an open space easement, to ensure conservation of the preserve in perpetuity. These measures (e.g., management plan, manager, funding endowment, conservation easement) should be subject to Wildlife Agency review and approval before initiation of any project-clearing activities on-site.

RESPONSE

A-8 The proposed Project has been recently modified to avoid direct footprint impacts to the on-site Padre Dam Diegan sage scrub easement. Similarly, modifications to the Project's fuel modification zones and fill slopes to protect biological resources, including minimizing potential impacts to the ephemeral drainage area on site, have recently been made to the proposed Project. The final MND has been updated to reflect these changes. (See pages 1, 15, 31 and 33 of the MND/IS).

A-9 Potential impacts to nesting migratory birds and raptors will be mitigated by limiting clearing activities to outside the standard avian breeding season (February 1–August 31) unless preconstruction surveys indicate that no nesting birds are present within 300–500 feet of the impact area. This mitigation is indicated on page 5 of the Biological Assessment, and therefore is not a new mitigation measure. However, this mitigation measure has been added to the mitigation measures on page 26 of the Biological Assessment and Section IV of the Initial Study.

A-10 A Biological Assessment was properly prepared for the project, which concluded that no burrowing owls were identified onsite, and none are expected to occur due to activity onsite and lack of suitable habitat. Further, as stated in the Biological Assessment, due to the disturbed nature of southern willow scrub on-site, the federally and state endangered least Bell's vireo was not observed onsite during the general species surveys and is not expected to occur on-site. Section 5.5.8.1 of the draft Subarea Plan cited by the commenter provides:

"a habitat assessment will be conducted by a City-approved biologist for every newly proposed project. The habitat assessment must include a survey of the proposed project site for Covered Species and suitable habitat. If no individuals or suitable habitat are found, the project applicant must submit a letter from the project biologist substantiating the claim. If individuals or suitable habitat are found or the

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Specific to the Department:

A-13

12. The Department has authority over activities in streams and/or lakes that will divert or obstruct the natural flow; or change the bed, channel, or bank (including vegetation associated with the stream or lake) of a river or stream; or use material from a streambed. For any such activities, the project applicant must provide written notification to the Department pursuant to section 1600 *et seq.* of the Fish and Game Code. Based on this notification and other information, the Department determines whether a Lake and Streambed Alteration (LSA) Agreement with the applicant is required prior to conducting the proposed activities. Please visit the Department's Lake and Streambed Alteration Program webpage (Lake and Streambed Alteration Program) for information about LSA notification and online submittal through the Environmental Permit Information Management System (EPIMS) Permitting Portal.

A-14

We appreciate the opportunity to comment on the draft MND. If you have questions or comments regarding this letter, please contact Heather Schmalbach[4] of the Department at 858-775-7399, or Jon Avery[5] of the Service at 760-431-9440.

Sincerely,

JONATHAN SNYDER Digitally signed by JONATHAN SNYDER Date: 2022.12.08 14:06:32 -08'00'

Jonathan Snyder
Assistant Field Supervisor
U.S. Fish and Wildlife Service

DocuSigned by: David Mayer D703B4520375408...

David Mayer
Environmental Program Manager
California Department of Fish and Wildlife

cc:
State Clearinghouse, Sacramento,
David Mayer, CDFW
Karen Drewe, CDFW
Heather Schmalbach, CDFW
Jonathan Snyder, Service

[4] Heather.Schmalbach@wildlife.ca.gov.
[5] jon_avery@fws.gov.

RESPONSE

City does not agree with the conclusions of a negative habitat assessment, focused surveys for this species must be conducted within suitable habitat (including modeled habitat) by a City-approved biologist during the appropriate field conditions for detection prior to any proposed impacts (e.g., as a component of CEQA review)."

The Biological Assessment, prepared by Senior Biologist Michael Jefferson, found no least Bell's vireo individuals and concluded no suitable habitat for western burrowing owl. The City has not contested the conclusions of the Biological Assessment. As such, focused surveys are not required.

Additionally, CEQA requires mitigation for identified significant impacts. No additional mitigation is required. However, as part of the long-term management plan for the open space (see response to comment 7), observations of any federally and state endangered species will be recorded.

A-11 Measures will be put in place to prevent recreational impacts within the on-site reserved areas, such as creation of a Conservation Easement (CE), management of the CE with funds from perpetual endowment, posting no trespassing and habitat preserve notifications, gating of the proposed utility easement access road through the extension of Tyler Street, and elimination of any public access to the preserve portion of the site from the proposed Project. (See pages 16-17 of the MND and also Response to Comment 7).

A-12 A Conservation Easement consistent with California Civil Code 815, et seq. will be created and recorded to ensure conservation of the preserve in perpetuity. The management of the on-site preserve CE will be conducted and funded in perpetuity by the Homeowners Association until the Subarea Plan is approved, take permits are issued and a permanent Preserve Manager for this property is established. A site-specific CE Habitat Management Plan, including projected costs, will be prepared by the identified CE manager to

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LITERATURE CITED

[BLUE] BLUE Consulting Group. 2022. Biological Assessment Report for the Tyler Street Residential TM, City of Santee. July 15, 2022.

[CDFW] California Department of Fish and Wildlife. 2022. Natural Communities; Semi-Natural Stands and Addressing Grasslands and Flower Fields. https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Robert F. Holland, Ph.D., October 1986. https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/Soitec-Documents/Final-EIR-Files/references/rtcref/ch9.0/rtcrefaletters/O14%202014-12-19_OberbauerTM2008.pdf

Sproul, F., T. Keeler-Wolf, P. Gordon-Reedy, J. Dunn, A. Klein, and K. Harper. 2011. Vegetation classification manual for western San Diego County. Prepared for San Diego Association of Governments by AECOM, California Department of Fish and Game Vegetation Classification and Mapping Program, and Conservation Biology Institute. https://sdmmp.com/upload/projects/20160330_2357_94.pdf

RESPONSE

accurately identify funding needs. (See pages 16-17 of the IS/MND)

A-13 Comment noted. For any such activities related to the proposed removal of dead and non-native material from the drainage area, the project applicant shall provide written notification to the Department pursuant to section 1600 et seq. of the Fish and Game Code.

A-14 This is a closing comment and does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the MND. Therefore, no further response is required.

LETTER

CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

California Department of Transportation

DISTRICT 11
4050 TAYLOR STREET, MS-240
SAN DIEGO, CA 92110
(619) 709-5152 | FAX (619) 688-4299 TTY 711
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November 17, 2022

11-SD-52
PM 14.469
Tyler Street Subdivision
MND/SCH#2022100498

Mr. Doug Thomsen
Senior Planner
City of Santee
Department of Development Services
10601 Magnolia Avenue
Santee, CA 92701

Dear Mr. Thomsen:

B-1

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Mitigated Negative Declaration (MND) review for the Tyler Street Subdivision, located near State Route 52 (SR-52), in the city of Santee. The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with Caltrans' mission and state planning priorities.

Safety is one of Caltrans strategic goals. Caltrans strives to make the year 2050 the first year without a single death or serious injury on California's roads. We are striving for more equitable outcomes for the transportation network's diverse users. To achieve these ambitious goals, we will pursue meaningful collaboration with our partners. We encourage the implementation of new technologies, innovations, and best practices that will enhance the safety on the transportation network. These pursuits are both ambitious and urgent, and their accomplishment involves a focused departure from the status quo as we continue to institutionalize safety in all our work.

Caltrans is committed to prioritizing projects that are equitable and provide meaningful benefits to historically underserved communities, to ultimately improve transportation accessibility and quality of life for people in the communities we serve.

We look forward to working with the City of Santee in areas where the City and Caltrans have joint jurisdiction to improve the transportation network and connections

RESPONSE

B-1 This comment states the roles and responsibilities of Caltrans. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the MND. Therefore, no further response is required.

LETTER

B-1 between various modes of travel, with the goal of improving the experience of those who use the transportation system.

Caltrans has the following comments:

Evaluation of Environmental Impacts – XVII. Transportation

B-2 Caltrans is not in agreement with the following statement (Initial Study Form pg. 33-34), "The site is in a High Quality Transit area because it is within ½ mile from a bus transit service. The Project is approximately 1,300 feet from Prospect Street with access to public bus service and would therefore have less than significant transportation impact."

The project site being near public bus service does not necessarily equate to being near a "High Quality Transit" stop or facility. The *Technical Advisory on Evaluating Transportation Impacts in CEQA* dated December 2018 published by the Governor's Office of Planning and Research (OPR) Page 13 references Pub. Resources Code, Section 21064.3 " 'Major transit stop' means a site containing an existing rail transit station, a ferry terminal serviced by either a bus or a rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods."

The nearest transit bus stop is on Mission Gorge Road, about a mile away from the project site. San Diego Metropolitan Transit System (MTS) bus route 834 has a frequency of service interval of every 60 minutes. There are no transit services on weekends and holidays for this route. Based on the definition of "Major transit stop" by OPR the intersection of this bus route would not qualify High Quality Transit Service. Even though SANDAG prepared certain streets/roads in San Diego County for qualifying transit routes according to the Affordable Housing and Sustainable Communities Program Guidelines (AHSC) in 2015, Prospect Street is one of them. Currently, MTS has no transit service on Prospect Street in the city of Santee.

B-3 The project would typically generate 140 trips per day, which is above the 110 trips threshold in the technical guidance from the Governor's Office of Planning & Research.

RESPONSE

B-2 The City properly adopted the City of Santee VMT Analysis Guidelines in April 2022 which set forth the applicable thresholds of significance and methodology related to VMT analysis in the City. Per the City's VMT Analysis Guidelines, projects located in a transit accessible area are screened from VMT analysis and presumed to have less than significant transportation impacts related to VMT.

Projects located within a half-mile radius of an existing major transit stop or an existing stop along a high-quality transit corridor may be presumed to have a less-than-significant impact absent substantial evidence to the contrary. The City defines "major transit stop" as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. "High quality transit corridor" means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute periods. (VMT Analysis Guidelines, p. 8.) The City also provides a map of major transit stops and high quality transit corridors in Appendix D of the City's VMT Analysis Guidelines. The Prospect Avenue bus stop is depicted as a transit stop along a transit route within the City and would provide service to the site. However, pursuant to this comment, and to clarify the status of nearby transit, the MND will be revised as follows:

"The site is in a High Quality Transit area because it is within ½ mile from a bus transit service. The Project is approximately 1,300 feet from Prospect Street with access to public bus service. The Project is also a small project generating less than 500 ADT and would therefore have less than significant transportation impact."

It should also be noted the project would not impede implementation of plans for mass transit or bicycle or pedestrian facilities. The project proposes sidewalks, which will provide access to the nearest bus station located

LETTER

B-4 If you have any questions, please contact Mark McCumsey at (619) 985-4957 or by email at mark.mccumsey@dot.ca.gov.

Sincerely,

Maurice A. Eaton

MAURICE EATON
Branch Chief
Local Development Review

RESPONSE

0.2 miles away. The project would not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities including policies of the City General Plan and would not decrease the performance or safety of these facilities. As set forth more fully below, the project satisfies the City's screening criteria for small projects and the conclusion that VMT impacts are less than significant does not change based upon this clarifying revision. No new avoidable significant effects have been identified and recirculation of the MND is not necessary pursuant to State CEQA Guidelines section 15073.5.

B-3 As noted above, City adopted its own VMT guidelines in 2022, which are specific to the City. Per Santee's VMT Analysis Guidelines, the threshold is 500 ADTs, rather than the 110 ADT threshold set forth in OPR's guidance. Projects that would generate less than 500 ADTs screen out of a detailed VMT analysis and are considered to have a less than significant traffic impact regarding VMT. The comment states the project would generate 140 ADT, which is below the City's threshold. Therefore, the project is presumed to result in a less than significant VMT impact, consistent with the conclusions in the MND.

B-4 This is a closing comment which provides contact information. The comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the MND. Therefore, no further response is required.

LETTER

November 20, 2022

Doug Thomsen, Senior Planner
City of Santee
Department of Development Services
10601 Magnolia Avenue
Santee, CA 9071
dthomsen@city_of_santeeca.gov

Dear Mr. Thomsen:

C-1 This letter addresses comments to the DRAFT MITIGATED NEGATIVE DECLARATION related to the applications for a tentative map (TM2017-1), Development Review Permit (DR2017-1) and the Environmental Initial Study (AEIS2017-8) for the development of the **Tyler Street Subdivision** (project). The application is to construct 14 single family dwellings and the extension of Tyler Street, a public road. The Project specifically references parcel numbers 386-290-08, -09, -10, -13, -14, -20, -22, -24 and -26 which match zoning and General Plan designation as low density residential (R-1) and park/open space (P/OS). For the record that I am strongly opposed to this project.

C-2 As a 23+ year resident and original homeowner of a property directly adjacent to and highly impacted by the Tyler Street project, it is my right and my personal obligation to express concerns regarding the initial study. The study appears to be inconsistent with my observations of the proposed land and the report itself is contradictory with respect to the environmental factors presented. Although the factors of the project are looked at individually, the cumulative impact of all factors taken together is of greatest importance when considering whether to approve or deny the project.

C-3 Some of the terms used in the report are subject to individual interpretation. The understanding and interpretation of words can change the outcome of this application significantly based on the boxes checked for each factor. For example, what one considers a "potentially significant" or "less than significant" impact can vary considerably from person to person, expert to expert, neighbor to neighbor.

C-4 Take, for instance, the term "view," defined as a "highly valued" landscape for the benefit of the general public. That which is "highly valued" to one may have a significantly different value to another. Of course, the more personal the impact, the more significant an issue will be, irrespective of each check box on a form. As such, my sense of "impact" may be very different from that of the builder, a business that will profit from this project, or the Steve Family Trust, who will also profit. While those businesses stand to profit from this venture, I, along with many of my neighbors, will likely see our home value reduced and our quiet enjoyment of our home negatively impacted. In addition, we will likely see a negative impact to the surrounding environment that will extend far beyond the period of construction. This is a decision that has the potential to create a material negative impact for me and my neighbors for a lifetime, not just a phase of building. I do not take this application lightly or as just a formality.

C-5 The Initial Study identified "that the project could have some potentially significant impacts on the environment, but these effects would be less than significant with proposed mitigation". My very strong view is that the proposed mitigation steps will not materially reduce the negative impact on this neighborhood and the surrounding ecosystem. The project would have significant ongoing negative impacts within the immediate residential area and any sight line of the impacted area. Additionally, there are impacts to safety, wildlife, protected and unprotected plants, open space and serenity, the water supply and other unmentioned factors. There are also negative impacts to the personal quality and comfort of life that are cherished today by all in our neighborhood. The sights and sounds of nature are therapeutic, the sounds of humans, less so.

RESPONSE

C-1 This comment provides an introduction to the letter from Susan Plummer. The comment is introductory in nature and does not raise a specific issue with the adequacy of the MND or raise any other CEQA issue. Therefore, no further response is required or provided.

C-2 The comment raises concern that the MND is inconsistent with the commenter's personal observations of the Project site and contradicts the environmental factors presented. The comment further states that the cumulative impacts of the Project is of greatest importance when the City considers approval of the Project. The comment does not raise a specific issue with the adequacy of the MND other than to generally state that the MND does not match the commenter's personal observations and that the City's decision-makers must prioritize cumulative impacts at the time of its decision. Therefore, no further response is required or provided.

C-3 The comment states that the terms used in the MND are subject to individual interpretation such that what one considers a "potentially significant" or "less than significant" impact can vary depending on the person, expert, or neighbor. However, under CEQA, the lead agency is responsible for determining whether an adverse environmental effect should be classified as "significant" or "less than significant." (State CEQA Guidelines, § 15064(b)(1).) The lead agency identifies the threshold of significance to be used for a project, which is "an identifiable quantitative, qualitative or performance level of a particular environmental effect." (State CEQA Guidelines, § 15064.7(b).) Once such thresholds are established, an impact that complies with the applicable threshold will normally be found insignificant, and an impact that does not comply with the applicable threshold will normally be found significant. (State CEQA Guidelines, § 15064.7(a).) A "significant effect on the environment" is also explicitly defined in the State CEQA Guidelines (State CEQA Guidelines, § 15382).

LETTER

Following is an outline of general concerns related to the project followed by highlights of specific sections of the report that are quite concerning to me and my neighbors.

C-6

(1) Aesthetics

a. Very negative impact on current and future residents as open space and environmental factors are negatively impacted with open space disruption.

b. Project would in fact impact view from public property (see figures 1 thru 5 at the end of the document).

c. The "view" from public streets and private homes are subject to obstruction of the hills and natural scenery with the development of this project. Although not entirely a public view issue, it's a significant reason the surrounding properties are valued as they are for their views and privacy.

d. Noise, dust and light pollution will all negatively affect current residents and mitigation measures are not adequate. Sitting outside today there is solitude, quiet and evening darkness. 14 houses would disrupt that freedom and overall quality of life. Many of these disruptions extend well beyond the building period and last through the lifetime of the project.

C-7

(2) Protected species of plants and wildlife

a. They would in fact be negatively impacted – especially two protected plant species specifically noted in the report (diegan sage scrub and willow scrub).

b. Several claims made about migratory animal behavior do not appear to be supported by any cited study. Where is the supporting authoritative evidence?

c. Coyotes, rabbits, snakes and other animals utilize the field as their primary habitat and source of food. Not only are these animals important to the overall environment, they provide entertainment and meaningful enjoyment for the surrounding residents.

C-8

(3) Biological Impacts – This entire section is does not represent reality and appears to be fluff language with no support but where most sensible humans would not agree with the written words in the document. The stated impacts are significant although noted as Indirect. Indirect or direct, they are severe negative impacts.

C-9

(4) Geology, soil and water runoff

a. Repeated claims of it being "relatively flat" do not seem to be support by photographic evidence or visual observations.

b. Water runoff and erosion will almost certainly be an issue – especially when our overdue rains come in the next few years.

c. The stability of the soil is questionable. The topography suggests prior land shifts and ongoing concern of shifts in existing properties during building.

i. A local resident had their land studied before rebuilding their house following a fire. At that time, a licensed consulting civil engineer was brought in by the homeowners to assess the stability of their land and the surrounding area. I had a direct conversation with that engineer who stated that *building in the field area was not possible or advisable due to a prior land shift*. While I have no written documentation of this claim, this conversation with a qualified civil engineer gives me deep concern about this project. It would seem that at a minimum, the full impact of the prior land shift and potential for future land shifts should be studied more directly. Those findings should have a direct impact on any decision to approve or deny this project.

ii. Currently stated "mitigation" factors against a future land shift appears to be limited to "3 foot walls." This would seem to be a wholly inadequate mitigation for a potential downstream disaster.

iii. When I purchased my home in 1999, I recall hearing from the Prospect Hills II sales staff that building in the field below my fence line could not happen. I don't recall the reason they gave at the time, but it seems likely it was based on the same concern I spoke to the civil engineer about.

RESPONSE

The comment does not raise a specific issue with the adequacy of the MND or raise any other CEQA issue. Therefore, no further response is required or provided.

C-4 The comment states that the term "view", which is defined as a "highly valued" landscape for the benefit of the general public, may have a different value to the builder as it does to the commenter. The comment also states that the more personal the impact, the more significant of an issue it will be. For example, the commenter raises concern that the project will have negative impacts to her and her neighbors' home values and the quiet enjoyment of their homes. She also states that the project will have a negative impact for a lifetime, not just for a phase of building.

In determining whether an environmental impact is significant, "the question is whether a project will affect the environment of persons in general, not whether a project will affect particular persons." (Clews Land & Livestock v. City of San Diego (2017) 19 Cal.App.5th 161, 196.) Moreover, CEQA requires that the lead agency consider only the project's potential changes to the physical environment. Social or economic impacts alone (such as the economic values of the neighboring homes and the neighbors' personal enjoyment of those homes) are not changes in physical conditions and therefore the City is not required to evaluate these issues in the MND. The comment does not raise a specific issue with the adequacy of the MND. Therefore, no further response is required or provided.

C-5 The comment states that the mitigation proposed in the MND will not reduce the potentially significant impacts to less than significant, including impacts to safety, wildlife, plant species, open space, and water supply. The comment also raises concern that the project will have negative impacts to the personal quality and comfort of life of the neighbors, including noise caused by humans.

LETTER

C-10

Perhaps it was only a sales tactic, but when taken along with the civil engineer's view, it seems significant.

d. The report suggests that the area has become a trash dumping ground and would be improved by a "clean up" is completely overstated. Perceived trash accumulation is unnoticeable by most residents adjoining the property. The "trash" that I see from my property was the homemade recreational creations of a prior neighbor which is covered by natural brush. If it means me moving the "trash" to prevent a development, I'll be in that field immediately and drag the "trash" out.

e. "Green trash" dumping can be mitigated now by informing residents if they are out of code. Residents may not be aware of the boundaries.

C-11

(5) Cumulative Effect (last few sections)

a. The cumulative effect of all the items noted above and others in the initial study are <u>significant</u> when taken together and will absolutely negatively affect current property owners. There is the potential to lower home values at some level as the freedom of open space, wildlife, nature and fresh air are compromised.

b. It would be knowingly harmful to current residents and reckless by the City to approve this project in light of those cumulative effects.

C-12

IN SUMMARY: I strongly urge you to not approve the Tyler Street draft mitigated negative declaration application or the associated project. I believe the environmental impact is significantly detrimental to homeowners, nearby residents, the surrounding ecosystems, the general public deprived of distinctive unspoiled hill views as well as other impacts we can't easily identify at this time. There are also factors beyond purely environmental ones that are not taken into account with this mitigated negative declaration. The report feels narrowly focused in ways contrary to the interests of many Santee residents, especially those of Prospect Hills I and II and other surrounding developments. The scoring methodology used seems to completely disregard the impact on existing residences, rear yards and quality of living comfort, suggesting those impacts have little to no value where development is concerned. While my strong view is that the land should be left in its current semi-natural state, 14 single family homes are clearly preferable to higher density condos or apartments. From my perspective, the negative environmental impact from the project and reduction of open space is very impactful on me and the surrounding community and is not made "less than significant" by any of the mitigation steps described in the report. This report feels more like a formality than a true consideration of the environment that will directly be impacted by the approval of this application.

RESPONSE

As to potential impacts to the neighborhood or serenity, social or economic impacts alone are not changes in physical conditions and therefore the City is not required to evaluate these issues in the MND. Regarding "sounds of humans," pursuant to the newly enacted Assembly Bill 1307, noise generated by occupants of residential projects is not a significant effect on the environment under CEQA. The project site is located in an existing developed area with access to major roadways that would allow for emergency evacuation. In addition, the project has been reviewed and approved by the Fire Marshal with the preparation, coordination and approval of a Fire Protection Plan (FPP; Dudek, 2022). Through this review, it has been shown that the project would not impair implementation of, or physically interfere with, emergency response and impacts would be less than significant. (IS/MND, p. 28.) Further, the project's access would be from continuation of the existing Tyler street directly into the residential community. No hazards would result from proposed design features, and no incompatible uses have been identified in the project area that would increase hazards. (IS/MND, p. 44.) Accordingly, impacts related to safety are less than significant.

The proposed Project will impact no sensitive plant or wildlife species. As designed, proposed Project impacts are located within the portion of the site that had been historically impacted/disturbed and the furthest away from the steep-slopes leading up to the ridgeline and the onsite sensitive upland habitats. As a result, all areas supporting sensitive species are proposed to be avoided and preserved. (IS/MND, p. 12.) Regarding water supply, increase in demand related to the project can and would be provided to the proposed project by the Padre Dam Municipal Water District, which issued a Water Availability letter stating that it has the facilities to serve the project in April 2021. (IS/MND, p. 47.) Any impacts on water supply are less than significant.

LETTER

C-13

Significant Sections and comments for further reference purposes of the Initial Study:

PAGE 2

9. Diegan Sage scrub does appear to be affected.

"To the west and south/west is existing Open Space. The existing onsite Open Space easement was created by Padre Municipal Water District in 1992 for the protection of Diegan sage scrub."

Why is it OK to now abandon that protection with this development?

10. Seems there is an obligation to protect Onsite Willow scrub as well:

California Department of Fish and Game (CDFW) – Streambed Alteration Agreement (SAA - 1600 series) notification for completing the required impact neutral FMZ 2 maintenance activities within the preserved (OS) onsite willow scrub.

Project seems to be ignoring this requirement.

Bottom of page 2

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

Why are no boxes checked? Some should be checked. Seems at a minimum boxes should be checked for: Aesthetics (yes), Biological resources, Geology / Soils (yes – based on discussion with the engineer)., Hydrology/drainage (maybe), Noise (yes), Air quality (yes - during construction. Abatement measures seem inadequate.)

PAGE 3

Top Line Statement by Planner

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

Strongly disagree that the negative factors have been mitigated. The 54 page report is not a substitute for the quality of life that will be disrupted by the proposed Tyler Street development.

Item 3)

If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required

Were the responses to the impact specifically planned to not have "potentially Significant Impact" checked to eliminate the requirement of an Environmental Impact Report? Seems a bit odd given the amount of grading and improvements needed to support building.

4

RESPONSE

The comment does not raise a specific issue with a particular mitigation measure or the adequacy of the MND. Moreover, the comment does not submit supporting data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts. (State CEQA Guidelines, § 15204(c).) Therefore, no further response is required.

C-6 The comment raises concerns with the aesthetic impact analysis in the MND, in particular that the project will have a negative impact on current and future residents as open space will be disrupted; the project will impact views from public property; the view from public streets and private homes are subject to obstruction of the hills and natural scenery as a result of the project; the project will have significant impacts on noise, dust and light pollution. The comment refers to Figures 1 through 5 that are located at the end of the comment letter.

See Response A-4 on discussion of CEQA impacts on the environment in general, as opposed to particular people.

According to the MND, the 27.35 acres of the project site, only 8.41 acres are proposed to be impacted to be developed with housing. (IS/MND, p. 1.) The remaining 19.45 acres (approximately 71% of the onsite high quality habitat) will remain as open space. (IS/MND, p. 1.) Moreover, the project site is zoned for Low Density Residential (R-1) and Open Space use, and therefore the project as proposed is consistent with existing land use and zoning designations. The IS/MND looked at public views from various existing and proposed condition views surrounding the project site, and determined that while the project would alter the existing aesthetic characteristics of the project site, it would not be visible from the existing public right of way areas. (IS/MND, p. 5.) These impacts would only be visible from a limited number of vantage points, either from immediately adjacent rear yards of the surrounding residences or from public vantage points located adjacent to the project site from the

LETTER

PAGE 4

I. AESTHETICS - area of the report with most objections and discretion/opinion

- *located within City of Santee Multi-Habitat Planning Area (MHPA), the preserve system of the City's Multiple Species Conservation Program (MSCP).*
- *A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public*

The report specifically notes on page 5, section c "the proposed project would alter the existing aesthetic characteristics of the project site from a limited number of vantage points: all from immediately adjacent rear yards of the surrounding residences. As a result, unless you are at the proposed entry to the development, the project would not be visible from the existing public right of way areas. NOT TRUE

More specifically, those noted homes with "vantage points" on Clifford Heights are a majority, if not all of the homes, that have a direct vantage point of the open space and a key reason for purchasing our homes. This significant impact is not taken lightly as it provides reasons we love our homes beyond just the aesthetic views.

If "all from immediately adjacent rear yards" isn't that significant although not public? Most residents spend more time in their rear yards then in their front yards which is why we've spent a lot of money upgrading and living in rear yards. The proposed development would more than significantly impact that lifestyle, enjoyment, privacy, serenity and reason for valuing our homes the way we do.

One could argue that the scenic view from each peak looking west would be affected. (See Fig 1 and 2 below). Driving up Clifford Heights Road looking between existing houses and looking over the field at the end of Barbara Jean, will significantly change from open space to homes, block walls and whatever the imagination can interpret from the drawings provided with the initial study.

C-14

Last paragraph on **Page 4** seems very important:

> *The Santee General Plan Community Enhancement Element describes numerous topographic features in the City and the surrounding vicinity as providing distinctive views and vistas from developed portions of the City. Although the Santee General Plan does not designate specific scenic vistas in the City, the major ridgeline and hillside systems provided by undeveloped areas of the northern portion of the City, including the project site, present a large portion of the views and vistas in the City.*

Paragraphs 3 & 4 on **Page 5** tries to brush it off.

> *With the proposed house pads at elevations ranging from 433 to 504.5 feet, the project would not be seen from areas such as Mission Trails Regional Park or Prospect Avenue (closest main street, to the north) due to the intervening distances between these areas and the project site and the existing developed nature of the surrounding landscape.*
>
> *Therefore, the project will have a less than significant impact on the distinctive views and vistas from within the developed portions of the City*

Strongly disagree with this subjective claim. It is very clear, true and obvious that the development will have significant impact on vistas and views, both public and private. Anyone who looks out from my backyard or public streets are likely to agree the homes are less attractive than open space in this specific area.

The report indicates the development won't be seen from Prospect Avenue. The tiny segment of Prospect Avenue is minimal compared to the impact on homes surrounding the imposed development and other areas within eyesite of

5

RESPONSE

surrounding residential developments. (IS/MND, p. 5.) The project would enhance the visual character and quality of the site and its surroundings because it removes the accumulated trash that currently exists on the site, and the project would incorporate architectural elements and landscape features that enhance the visual quality of the area. (IS/MND, p. 6.) The project would not substantially degrade the existing visual character or quality of the site and its surroundings, and impacts would be less than significant. (IS/MND, pp. 5-6.)

With respect to scenic vistas, the project site is located in a low-lying area south of the San Diego River and north of Mission Trails Regional Park. (IS/MND, p. 5.) Scenic resources in the project area include the view of the onsite slope (to be avoided and preserved) rising up to the ridgeline separating the project from the Mission Trail Regional Park (not visible, on the other side of the ridgeline). (IS/MND, p. 5.) The project is designed to be set down as low on the site as possible while protecting the onsite drainage (elevation of 425 feet) and the ridge (elevation of 675 feet) view line. The comment points to Figures 1 through 5 included at the end of the comment letter. Consistent with the views shown in these figures, with the proposed house pads at elevations ranging from 433 to 504.5 feet, the project would not be seen from areas such as Mission Trails Regional Park or Prospect Avenue (closest main street, to the north) due to the intervening distances between these areas and the project site and the existing developed nature of the surrounding landscape. (IS/MND, p. 5.) The project will therefore have a less than significant impact on the distinctive views and vistas from within developed portions of the City.

With respect to noise, the comment does not raise specific issues with the noise analysis in the IS/MND. However, the IS/MND analyzed the impacts of the project during construction and operation, and determined that with implementation of MM NOI-1, impacts would be less than

LETTER

the development. Yards, fences, homes and other aspects appear to likely be seen from other areas, including Prospect Avenue.

I was initially introduced to Prospect Hills II by spotting the wooden fences along the ridge line when driving over the crest of 52 many years ago. I then followed the logical path to find the model homes by driving on Prospect Avenue. I still look for the fences as I crest 52 and try to spot my house from afar, not from the adjacent street.

PAGE 5 (Bottom)
Item c) Substantial degradation of existing visual character...

Overall, the project would enhance the visual character and quality of the site and its surroundings because the project removes the accumulated trash that is all located within the development footprint ...

C-15

Simply not supported by the facts. Current images and visual inspection of the area do not show any obvious trash accumulation. There are one off pieces of trash but nothing substantial or an ongoing dumping ground.

PAGE 6
Item d) Light pollution

The lighting shall be stationary, directed away from adjacent properties and shielded so that no light or glare is transmitted or reflected in such concentrated quantities or intensities as to be detrimental to the surrounding area.

These mitigations are insufficient, and after the project is built the owners will likely change the original outdoor lighting by adding patio string lights, landscape spot lights and other lighting. Light pollution will be a significant impact and adversely affect surrounding properties. What is now the darkness of night and a stomping ground for nighttime wildlife, will be disrupted by lights, sound and more disruption than we know today.

PAGE 9
III - AIR QUALITY

C-16

Do not believe that air quality mitigations during pad creation and home construction will be adequate both in terms of smells and dust.

What recourse do we have if the dust and diesel smells are not mitigated during construction?
The addition of humanity will disrupt air quality with daily life compared to an area that is basically untouched by humans today.

PAGE 12
IV - BIOLOGICAL RESOURCES
Item a) top paragraph on page 12

C-17

The proposed Project would potentially significantly impact three sensitive habitat types across 6.78 acres (grading impacts and Zone 1 and upland Zone 2 fuel modification zone maintenance impacts). These impacts are considered significant and require mitigation. The compensatory mitigation is proposed to occur offsite with the purchase of habitat mitigation credits

This "remedy" does not mitigate the effect on the neighbors of this development or the surrounding neighborhoods to buy credits elsewhere. The significant impact to the three sensitive habitat areas will diminish the quality and comfort of life at our homes.

RESPONSE

significant. (IS/MND, pp. 39-41.) No further response is required.

Similarly, the comment raises general concern about dust and light pollution, which are addressed in the IS/MND. (See pp. 10-11, 15 on dust during project construction, and pp. 6 and 14 on light pollution.) As no specific issue with the adequacy of the MND is raised, no further response is required.

C-7 The comment states that the project would have negative impacts on Diegan Sage Scrub and Willow Scrub. According to the IS/MND, the project would have no impact on these habitat types. There is an existing Diegan Sage Scrub easement on the project site that prohibits any development within the Diegan Sage Scrub habitat, and therefore there will be no impact. (IS/MND, p. 28.) The project would involve Fuel Modification Zone maintenance within the Willow Scrub habitat and within the Diegan Sage Scrub easement area, but because it will only require the removal of dead material, impacts are considered impact neutral. (IS/MND, pp. 12, 28.) The comment does not raise any specific issue with the adequacy of the MND, and therefore no further response is required.

The comment also states that the IS/MND does not provide supporting evidence to support its claims on migratory animal behavior. As stated on page 16 of the IS/MND, the discussion on migratory wildlife corridors is based on several sources: City of Santee General Plan, Open Space Conservation Element; City of Santee Draft Multiple Species Conservation Plan (MSCP) Subarea Plan; Tyler Street Biological Assessment by the BLUE Consulting Group; May 2022.

The comment also states that coyotes, rabbits, snakes and other animals utilize the field as their primary habitat and source of food. These are not protected species, and as noted above, 19.45 acres of the project site will remain as

LETTER

C-18

PAGE 14 – Biological Impacts – P0otential Indirect Impacts that are truly significant

a. Edge effects, which include: potential increase in noise, human intrusion, introduction of domestic animals, night lighting and dumping. Select edge effect will increase more than 100%. The report ONLY addresses the landscape aspect of the development.

b. Night-time Lighting – in an area complete with night-time darkness, any aspect of the development will cause disruption to the habitats and nocturnal predators.

C-19

PAGE 16
Item d)

The property does not support an identified formal established native resident or migratory wildlife corridors. The proposed Project will not impede the use of native wildlife nursery sites

I do not see any supporting evidence for this claim. I have seen migratory birds and ducks that contradict this statement. What evidence is there to support this claim?

C-20

PAGE 22
VII - GEOLOGY AND SOILS
Section a) subsection iv) -- *(first full paragraph on top of page)*

The project site is located in Geotechnical Hazard Zone C1 and C3 according to the Safety Element of the General Plan. Zone C1 is classified as being marginally susceptible to landslides, while zone C3 is classified as "generally to marginally" susceptible to landslides. However, the project site is relatively flat, and no steep slopes are located on-site or adjacent to the property. No landslides have been observed on the project site or in the vicinity of the project site. Project impacts would be less than significant

Disagree that the site is relatively flat so not susceptible to landslides. We've not had recent rains or brush fires, but if we did, landslides would seem quite likely given experience in other parts of California. What is the definition of "relatively" flat. Landslides may not have been observed however, the land shift is evident.

What will prevent the block walls in the development plans from separating like the ones at the base of Clifford Heights? It's not a pretty sight.

C-21

Section b)

The project site is relatively flat, which limits the potential for substantial soil erosion. In addition, the project would include landscaping, which would minimize erosion potential. Throughout construction and operation, the project is required to comply with Section 15.58.140 (erosion control plans) of the City of Santee Municipal Code and landscaping requirements. Due to these factors, the project would not result in substantial soil erosion or the loss of topsoil. Project impacts would be less than significant.

Again, these claims are not supported by any evidence. And the land is not "relatively flat" (see figure 3). The reports references "step hills" but also references relatively flat. A contradiction of sorts.

C-22

PAGE 37
X - HYDROLOGY AND WATER QUALITY
Section c) Subsection iv)

The project would not substantially alter the existing drainage pattern as discussed in response for Section IX. c). Topography of the project development site is gradually sloping

7

RESPONSE

open space. The comment does not raise any specific issue with the adequacy of the MND, and therefore no further response is required.

C-8 The comment generally states that the biological resource section of the IS/MND is flawed, but does not raise any specific issue with the analysis. Moreover, the comment does not submit supporting data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts. (State CEQA Guidelines, § 15204(c).)

As analyzed in pages 11 through 17 of the IS/MND, the project impacts to biological resources were appropriately analyzed in compliance with CEQA and determined that impacts would be less than significant with mitigation.

C-9: The comment raises concerns about the geology, soil and water runoff analysis in the IS/MND. In particular, the comment states that the IS/MND's repeated claims of the project site being "relatively flat" is unsupported. The comment letter includes Figures 3 and 4, which are photos purportedly depicting the project site, to support the claim that the site is not relatively flat. The comment seems to suggest that a strict interpretation of "relatively flat" would mean that the land must be completely flat without any variation in elevation. Figures 3 and 4 of the comment letter show a gentle slope in a flat area where the proposed development would be located. There are no steep hills, valleys or mountains in the area where the proposed development would be located. Thus, the IS/MND accurately describes the development site as "relatively flat." Moreover, the comment does not explain how this alleged inaccurate description of the project site as "relatively flat" affects the adequacy of the IS/MND. Therefore, no further response is required.

The comment also states that water runoff and erosion will be an issue because of the amount of rain that will occur in the next few years. The comment does not identify any

LETTER

C-22

Disagree with both of these statements. It would absolutely alter the existing drainage patterns. We are in a 12 year drought. We are overdue for some major rain and drainage WILL be an issue. Can't just brush it away to wait and see what happens. Not a responsible response or action.

C-23

PAGE 39
XIII - NOISE
Section a)

Short-term noise impacts could occur during the construction of the project. Construction personnel and construction equipment and materials deliveries to the site would incrementally increase noise levels on local roads leading to the site. Although there would be a relatively high single event noise exposure potential causing intermittent noise nuisance (passing trucks), the effect on longer-term (hourly or daily) ambient noise levels would be small when compared to existing hourly/daily traffic volumes on Prospect Ave.

Not "could occur" – "WILL occur." This plan seems to completely ignore noise impacts on current residents along Clifford Heights Rd, or at least brushes them away with little consideration of that impact. More significant is the ongoing noise and sounds of residents below and adjacent to existing properties – automobiles, humans, pets, machinery.... The noise impacts are eternal and do not stop at the end of construction.

C-24

PAGE 53

Section b) – Cumulative Impacts

Regarding cumulative aesthetics impacts, the scope for cumulative analysis of impacts related to aesthetics and views is the viewshed surrounding the project site. While development of the cumulative project sites would result in a cumulative change to the visual character of the immediate area, this change would not be considered adverse considering the proposed amenities and architectural interest that would be provided by the project

Those amenities would only be enjoyed by the people buying those homes. Those cumulative impacts would be detrimental on all those in the surrounding community – especially on Clifford Heights Rd. I do not find house rooftops of architectural interest in comparison to open space, even with shades of brown grasses with intermittent green.

There are a number of unanswered questions such as the long term plan for Barbara, the reference of future developments within this same region.

With the streets just being resurfaced, what will the impact be from trucks and heavy equipment traveling the newly paved road. Who will take care of the repairs should they be needed which leads to more environmental issues?

8

RESPONSE

specific issues with the adequacy of the IS/MND. According to the IS/MND, the project is required to comply with Section 15.58.140 (erosion control plans) of the City of Santee Municipal Code and landscaping requirements, which will prevent any substantial soil erosion or the loss of topsoil. (IS/MND, p. 22.) In addition, the project will construct 29 rain gardens/biofiltration basins and would retain project drainage on-site prior to discharge to the river, which would prevent erosion. (IS/MND, pp. 34-36.) The project would also incorporate construction and post-construction Best Management Practices in compliance with the City's Standard Urban Storm Water Mitigation Plan. The existing and proposed drainage improvements are adequately sized to convey the 100-year flood event. (IS/MND, p. 36.) Impacts to water runoff and erosion would be less than significant.

The comment also raises concern about the stability of the soil, citing to the commenter's personal conversations with a civil engineer and a Prospect Hills II sales staff, and her opinion about the proposed mitigation as being inadequate. As explained in Section VII Geology and Soils of the IS/MND, the project site is located in Geotechnical Hazard Zone C1 and C3—Zone C1 has a moderate to high potential for liquefaction, while Zone C3 has a low to moderate potential for liquefaction. (IS/MND, p. 21.) As the project site is not underlain by a known active or potentially active fault, the potential for ground rupture due to faulting is considered low. (IS/MND, p. 21.) A liquefaction analysis of the site was completed and found the site would be susceptible to liquefaction, ranging from 0.5 to 1.0 inch for design earthquake ground motion and 1 inch or less within 50 horizontal feet for differential dynamic settlement. (IS/MND, p. 21.) Based on this relative small settlement, the geotechnical report recommends inclusion of dynamic settlement in the structural analysis. (IS/MND, p. 21.) Therefore, with implementations of geotechnical recommendations (which are required as part of the grading permit), no substantial risk associated with liquefaction would

Figure 1:
View of the development area looking due west from peak area. This is definitely a scenic view from Public land.

Figure 2:
Facing Southwest:

occur.

It is unclear to which mitigation the comment is referring to, as there is no mitigation in the IS/MND that requires a 3-foot wall. Walls have been utilized in the Project design to prevent direct impacts, and potential additional permitting and mitigation measures, into disturbed Willow Scrub habitat. Because the IS/MND determined that impacts to geology and soils would be less than significant, no mitigation is required. The comment does not identify specific issues as to the adequacy of the MND. No further response is required.

C-10: The comment states that the neighbors of the project site do not notice the trash that has accumulated on the project site, and that "green trash" dumping can be mitigated now by informing residents that they are violating the Municipal Code. While the commenter and her neighbors may not notice the trash that is located on the project site, as discussed in the IS/MND, the removal of such trash would not only enhance the visual character and quality of the project site and its surroundings, it would improve impacts to the adjacent habitat. (IS/MND, pp. 6, 14.) The comment does not identify specific issues as to the adequacy of the MND. No further response is required.

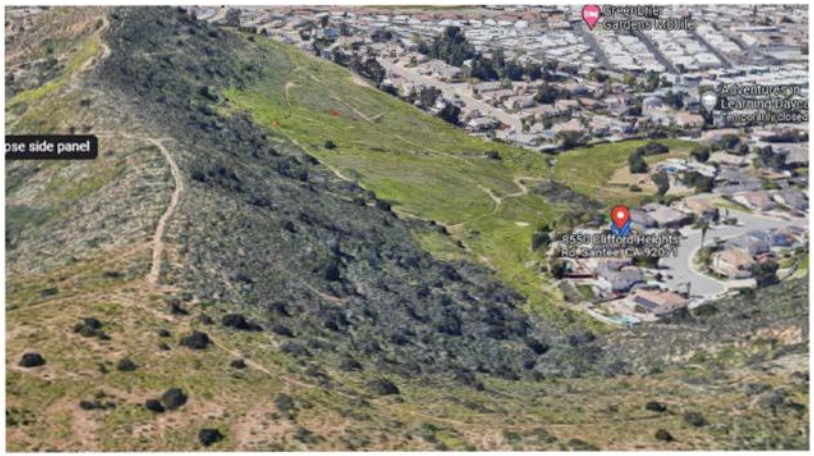
C-11: The comment states that the project will have significant cumulative impacts and negatively impact current property owners because it will lower home values, and the freedom of open space, wildlife, nature and fresh air. The comment does not submit supporting data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts. (State CEQA Guidelines, § 15204(c).)

Section XXI of the IS/MND discusses the cumulative impacts of the project. The comment does not identify specific issues with respect to the adequacy of the IS/MND. See Response A-4.

LETTER

Figure 3 – From Tyler Road Looking East. Demonstrates that land is not "relatively flat" as claimed.

Figure 4 – View of the land looking South-South-East, further contradicting claim that the land is "relatively flat."



10

RESPONSE

C-12: The comment urges the City to deny the project, and summarizes the prior comments made in the letter. See Responses A-1 through A-11.

C-13: The comment states that the project is abandoning the protection of Diegan Sage Scrub. As stated in the IS/MND, there is an existing onsite Open Space easement to protect Diegan Sage Scrub. The project will not eliminate this Open Space easement, and the easement will remain in place. (See IS/MND, p. 1.)

The comment also states that the project will not protect the willow scrub that is onsite. Similar to the Diegan Sage Scrub, there will be an open space easement created by the project to protect the willow scrub. Although there will be Fuel Modification Zone 2 maintenance within the willow scrub, it is considered impact neutral because it will only allow for the removal of dead material within drainage areas, and not disturb the soils or remove healthy material. (IS/MND, p. 13.)

The comment asks why none of the boxes under Environmental Factors Potentially Affected are checked, if there are potentially significant impacts identified in the IS/MND. (See page 2 of IS/MND.) As shown in the IS/MND, for each resource topic, there are no potentially significant impacts because all impacts are either less than significant, or are less than significant with mitigation. Thus, there are no boxes checked as potentially significant.

The comment also states that abatement measures for air quality are inadequate but provides no further reasoning or explanation for her claim. As discussed in the IS/MND, the air quality impacts are potentially significant, but with implementation of MM AQ-1, they will be less than significant. (IS/MND, pp. 8-11.) The comment does not identify specific issues with respect to the adequacy of the IS/MND, and therefore no further response is required.

The comment states that the MND does not adequately

Figure 5 – View of the development site from Barbara Jean – looking West
Public view that will change from open space to rooftops, walls, houses etc.

Respectfully submitted

Susan Plummer

[redacted]

mitigate the potentially significant impacts of the project, and claims that the quality of life will be disrupted by the project. As shown in the IS/MND and its supporting appendices, the project's potentially significant impacts will be mitigated to less than significant impacts. The comment is a general statement and does not identify specific issues with respect to the adequacy of the IS/MND, and no further response is required.

The comment asks whether the City deliberately did not check any boxes that impacts would be "potentially significant impact" to avoid having to prepare an EIR, and that the amount of grading and improvements required by the project would suggest that an EIR would be required. The comment does not provide any support for this statement and is a general statement. As demonstrated in the IS/MND and supporting technical studies, all of the project's potentially significant impacts will be mitigated to less than significant impacts. An EIR is not required and no further response is necessary.

C-14: See Responses 3, 4, and 6.

C-15: See Responses 6 and 10. The comment also states that the mitigation is insufficient as it pertains to light pollution. However, as discussed in the IS/MND, impacts to glare and light are less than significant, and no mitigation is required. Any potential additional lighting added by future owners is speculative and commenter does not present any substantial evidence to show such lighting would lead to significant impacts.

C-16: The comment asks what recourse she has if the dust and diesel smells are not mitigated during construction. According to the IS/MND, project construction may result in fugitive dust from earth moving operations and roadways. (IS/MND, p. 9.) Because the project site is adjacent to sensitive receptors (neighboring residences), the project will comply with SDAPCD Rule 55, Fugitive Dust Control

Requirements, which includes prohibition of dust leaving property line for more than 3 aggregated minutes per hour, in addition to adhering to MM AQ-1, which requires the contractor to apply water at least twice daily at all active earth disturbance areas sufficient to confine dust plumes to the immediate area. (IS/MND, pp. 10-11.) In addition, the project does not include elements that would generate objectionable odors, and impacts would be less than significant. (IS/MND, p. 11.) The applicant is required by law to adhere to regulatory requirements, as well as MM AQ-1, which will be incorporated as a condition of approval. With these enforcement mechanisms, impacts will be less than significant.

C-17: The comment states that the biological resource mitigation will not mitigate the effect on the neighbors. In determining whether an environmental impact is significant, "the question is whether a project will affect the environment of persons in general, not whether a project will affect particular persons." (*Clews Land & Livestock v. City of San Diego* (2017) 19 Cal.App.5th 161, 196.) Moreover, CEQA requires that the lead agency consider only the project's potential changes to the physical environment. Social or economic impacts alone (such as the economic values of the neighboring homes and the neighbors' personal enjoyment of those homes) are not changes in physical conditions and therefore the City is not required to evaluate these issues in the MND. The comment does not raise a specific issue with the adequacy of the MND. Therefore, no further response is required or provided.

C-18: See Response 19. The comment does not submit supporting data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts. (State CEQA Guidelines, § 15204(c).)

C-19: The commenter states she has personally observed migratory birds and ducks, which suggests there is a wildlife corridor on the project site. However, as indicated in the Biological Assessment Report (Appendix B of the IS/MND),

there is no identified wildlife corridor on the project site. The Biological Assessment Report is based on eight surveys that were conducted on the project site, in addition to a thorough review of relevant maps, databases, and literature pertaining to biological resources. (Appendix B, pp. 5-6.) Impacts to nesting birds are prohibited according to the Migratory Bird Treaty Act. Impacts to raptors and migratory birds during the nesting season would be mitigated by the limitation of clearing activities from February 1 through August 31 unless pre-construction surveys indicate that no nesting birds are located within 300 to 500 feet of the project impact area. (Appendix B, p. 5.) Accordingly, regulatory compliance will ensure there are no impacts to migratory birds or nesting birds.

C-20: See 9. The comment does not submit supporting data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts. (State CEQA Guidelines, § 15204(c).)

C-21: See Response 9. The comment states that the analysis under Geology and Soils, subdivision b) is unsupported by evidence. The impact analysis is based on informed judgment by experts, including the consultants who prepared the IS/MND. Moreover, the comment does not submit supporting data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts. (State CEQA Guidelines, § 15204(c).)

The comment also states that the MND's reference to "steep hills" contradicts its description of the project as "relatively flat." The only reference to "steep hillsides" is found on page 52 of the MND, and it is a general introductory statement about wildfire impacts, and is not project-specific. The sentence reads, "Slope failures, mudflows, and landslides are common in areas where steep hillsides and embankments are present and such conditions would be exacerbated in a post-fire environment where vegetative cover has been removed." (IS/MND, p. 52.) To

the extent the IS/MND discusses slopes, the onsite slope would be avoided and preserved and not impacted by project development. (IS/MND, p. 5.)

C-22: See Response 9. Based on the General Plan Conservation Element, Regional Water Quality Control Board Basin Plain, a Preliminary Storm Water Mitigation Plan for Tyler Street dated April 1, 2019, prepared by Walsh Engineering and Surveying, Inc., the IS/MND determined that the project will not substantially alter the existing drainage pattern. (IS/MND, pp. 35, 37.) The project drainage would be retained on-site prior to discharge to the river, which neither impedes or redirects flood flows. (IS/MND, p. 37.) The site design directs flows to landscaped areas, and with implementation of the proposed BMPs, including bio-retention swales and proposed landscaping, the project would not substantially alter the existing drainage pattern of the site. (IS/MND, p. 37.) The comment does not submit supporting data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts. (State CEQA Guidelines, § 15204(c).)

C-23: The comment states that there will be noise impacts, and that the IS/MND does not analyze noise impacts on the residents along Clifford Heights Road. The comment also raises a concern that there will be ongoing operational noise from the Project. Increased traffic noise impacts from along Clifford Heights Road will not be a potential significant impact as the proposed single-family homes are not a significant noise generating use, noise would be typical of a single-family neighborhood, and the proposed use is consistent with the zone and land use designation. Further, there would not be a doubling of traffic therefore any increase in traffic noise would be imperceptible. According to the IS/MND, noise generated during excavation, grading, and building on the project site may result in short-term noise impacts over the course of the construction schedule. (IS/MND, p. 40.) In addition, construction vehicles

accessing the site may also incrementally increase noise levels on local roads leading to the site. (IS/MND, p. 40.) However, a standard condition will require compliance with the City's noise ordinances, including its noise standards with regard to construction noise, restricting construction noise between the hours of 7:00 a.m. and 7:00 p.m. on Mondays through Saturdays and at all times on Sundays and holidays. (IS/MND, p. 40.) In addition, if construction equipment with a manufacturer's noise rating of 85 dBA Lmax or greater will be operating for more than 10 consecutive workdays, notice must be provided to all property owners or residents within 300 feet of the site no later than 10 days before the start of construction. (IS/MND, p. 40.) Construction noise impacts will be less than significant.

With respect to operational noise, for family residential uses such as the project, noise levels up to 65 dBA are considered normally acceptable, with noise levels between 65 and 70 dBA being conditionally acceptable. The project will be able to achieve a 45 dBA CNEL interior noise level identified in the State Uniform Building Code using standard building construction techniques. (IS/MND, p. 40.)

The comment does not submit supporting data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts. (State CEQA Guidelines, § 15204(c).)

C-24: The comment states that the cumulative impacts of the project will be detrimental to the neighbors of the project site, but does not explain or identify any adverse environmental effects. As explained in Response A-4, economic and private aesthetic views are not issues required under CEQA.

The comment has questions about the long-term plan for Barbara [sic] and other future developments within the same region. The comment does not raise a specific issue

LETTER	RESPONSE
with	the adequacy of the MND. Therefore, no further response is required or provided. The comment also asks who will take care of repairing the roads as a result of trucks and heavy equipment traveling on those roads. The comment does not raise a specific issue with the adequacy of the MND. Therefore, no further response is required or provided.

LETTER

From: Josh Prout [redacted]
Sent: Monday, November 21, 2022 10:20 PM
To: Doug Thomsen
Subject: Tyler Street Development

Dear Mr. Thomsen,

D-1 I don't believe the proposed development of 14 homes is a positive development for the residents of Santee. The draft initial study says that "The project would develop additional residential units that would contribute to the established community in an area that is currently used for illegally dumping trash." Living on Tyler Street for the past 6 years, I have never witnessed anyone dumping trash on the land. While there is trash on the site, it looks like it has been there for a very long time and the amount of trash is not growing.
It's misleading to say the area is used as an illegal dump.

D-2 Tyler Street is very quiet with little vehicular traffic as there are only 7 homes on the street. Residents and our neighbors on Mesa Heights Rd. value the peace and seclusion of our home's location. The fact that there was a lack of homes and no car traffic was the primary reason for the purchase of our home. While 14 homes wouldn't generate an amount of traffic that would get it designated as "growth inducing"
as the report states, it does triple the amount of vehicle trips through our community. That certainly would feel growth inducing to the residents of our street.

D-3 Finally, the report states that "as there are no existing structures or development, the site lacks any distinguishable character." While the area is not technically a part of Mission Trails Regional Park, it has no distinguishing border and any visitor would assume that it was a part of the park because it shares the same plants, animals and geographical features. I doubt people will say Mission Trails lacks distinguishable character. Mission Trails is a jewel of our city as it's rare to have such a large regional park in the middle of an urban area. I would like to see the area kept entirely undeveloped open space. It helps add to the treasure of our surrounding nature.

D-4 The report concludes that the development will "enhance the visual character and quality of the site and its surroundings..." I couldn't disagree more. The site blends in with Mission Trails and there will never be a man made residential/commercial/industrial structure that would enhance the nature of Mission Trails.

Sincerely,
Joshua and Amy Prout
[redacted]

1

RESPONSE

D-1: The comment disagrees that the project site has been used as an illegal trash dumping grounds, and states that they have never witnessed anyone dumping trash on the land. The comment states that any trash that is currently on the project site has been there for a long time, and the project will not be a positive development for the City. The comment does not dispute that there is trash on the project site, nor does it dispute that the project will clean up the trash that currently exists on the site. The comment does not raise a specific issue with the adequacy of the MND. Therefore, no further response is required or provided.

D-2: The comment raises concern about the number of vehicle trips that will result from the project. The comment states that the project will triple the amount of vehicle trips through their community, which will feel growth inducing, but does not provide supporting data or references offering facts, or substantial evidence of an impact related to traffic. The project is located within ½ mile of bus transit service and generates 140 ADTs, well below the City's 500 ADT threshold. As a small project, the proposed project has a less than significant impact related to VMT.

D-3: The comment states that visitors might assume the project site is a part of Mission Trails Regional Park because it is vacant and therefore the project site has distinguishable character and should be kept as undeveloped open space. The project site is located in a low-lying area south of the San Diego River and north of Mission Trails Regional Park. The onsite slope that rises up to the ridgeline separating the project site from the Mission Trail Regional Park will be avoided and preserved. The project is designed to be set down as low on the site as possible such that the project would not be seen from areas such as Mission Trails Regional Park due to the intervening distances between these areas and the existing developed nature of the surrounding landscape. (IS/MND, p. 5.) Moreover, approximately 71% of the project site will be preserved as open space, and the residential development will be grouped

together on only 8.41-acres of the project site. The comment expresses the commenter's opinion regarding use of the site, but does not raise issues with the adequacy of the MND. No further response is required.

D-4: The comment disagrees that the project will enhance the visual character and quality of the site and its surroundings because the project site currently blends in with Mission Trails and development cannot enhance the nature of Mission Trails. As explained in the IS/MND, the project will not be visible from Mission Trails Regional Park such that it would disrupt the nature of Mission Trails. The project is designed to be set down as low on the site as possible. (IS/MND, p. 5.) The project enhances the visual character and quality of the site and its surroundings because the project removes the accumulated trash that is located within the development footprint and the residential structures will incorporate architectural elements and landscape features that would enhance the visual quality of the area. (IS/MND, p. 6.) Therefore, the MND properly concluded aesthetic impacts are less than significant.

MITIGATION MONITORING REPORTING PROGRAM

Project Name: Tyler Street Subdivision (TM2017-1, DR2017-1, AEIS2017-8)

Project Location: Southern Terminus of Tyler Street, Santee, CA 92071

Project Description: Single-family residential subdivision

City Contact: Michael Coyne, Principal Planner, City of Santee, Department of Planning and Building; Phone Number: 619.258.4100 ext. 160

	Mitigation Measure	Responsible for Mitigation	Responsible for Verification	Method of Verification	Timing of Verification	Verification Date	Comments
Air Quality							
MM-AQ-1	**Sensitive receptors** As a supplement to San Diego Air Pollution Control District Rule 55, Fugitive Dust Control, the applicant shall require the contractor to apply water at least twice daily at all active earth disturbance areas sufficient to confine dust plumes to the immediate area.	Applicant/ Construction Contractor	City of Santee Department of Planning and Building	Site inspection	During active ground disturbance including clearing, grubbing and grading		
Biological Resources							
MM-BIO-1	The Conservation Easement(s) for Lots B and C, Habitat Management Plan and Property Assessment Report shall be prepared and approved by the City/Wildlife Agencies prior to issuance of a grading permit. The Homeowners Association (HOA) shall be required to manage the Conservation Easement(s) and long-term management plan until the MSCP Subarea Plan is approved, take permits are issued and a permanent Preserve Manager for this property is established.	Applicant	City of Santee Department of Planning and Building	City and Wildlife Agency review and approval of CE	Prior to issuance of grading permit		

MM-BIO-2	As potentially appropriate bird/raptor nesting sites have been observed onsite, preventative measures to preclude direct and/or indirect impacts violating the Migratory Bird Treaty Act (MBTA) shall be implemented. Potential nesting sites are defined as large trees, burrows and/or man-made towers/poles etc. Preventative mitigation measures (pre-construction surveys) are required, see below. In order to prevent potential significant/indirect impacts to breeding birds/raptors, if grading is proposed during the bird/raptor breeding season (February 1 to Augst 31) then, a pre-construction survey for active nests onsite and within 500-feet of the footprint shall be performed no more than three days prior to the initiation of construction. If an active nest is identified onsite, then grading shall be postponed until the nest is no longer active.	Applicant/Applicant's Biologist	City of Santee Department of Planning and Building	City review and approval of biologist's monitoring report	Prior to initiating construction, including clearing, grubbing, and construction
MM-BIO-3	Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, a qualified, City approved biological monitor shall be retained by the project proponent and shall be onsite during clearing, grubbing, and/or grading activities. The biological monitor shall attend all preconstruction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas and protective fencing. In addition, the biological monitor shall be on site during construction to ensure that vehicles stay within the limits of the permitted Project footprint. The biological monitor shall be authorized to halt all associated project activities	Applicant/Applicant's Biologist	City of Santee Department of Planning and Building	City review and approval of biologist's monitoring report	Prior to initiating construction related activities, including clearing, grubbing, grading and construction

	that may be in violation of the City's draft MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project.				
MM-BIO-4	Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, all workers shall be educated by a City approved biologist to recognize and avoid those areas which have been marked as sensitive biological resources.	Applicant/Applicant's Biologist	City of Santee Department of Planning and Building	City review and approval of biologist's monitoring report	Prior to initiating construction related activities, including clearing, grubbing, grading and construction
MM-BIO-5	Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, biological fencing (i.e., ESA type fencing) shall be installed. Prominently colored, well -installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to and/or within the Preserve. Immediately following construction activities, the biological monitor shall prepare and submit to the satisfaction of the City, a monitoring report documenting the project's compliance with all minimization/avoidance measures.	Applicant/Applicant's Biologist	City of Santee Department of Planning and Building	City review and approval of biologist's monitoring report and grading plans	Prior to initiating construction related activities, including clearing, grubbing, grading and construction
MM-BIO-6	The Property and proposed CE area is actively used by the surrounding residential community for unauthorized recreation (e.g. hiking, biking, pet walking) and contains multiple unauthorized trails. With the construction of the Project, permanent measures will be put in place to prevent recreational access and impacts within the CE.	Applicant/Applicant's Biologist	City of Santee Department of Planning and Building	City and Wildlife agency review and approval of the CE	Preventative measures installed prior to grading permit

	The following CE access Mitigation Measures will be required: • Signage stating no access permitted and identifying the CE Habitat Preserve on metal posts a maximum of 100 feet apart along the line of the CE and public areas interface. • Gating of the proposed utility easement access road through the extension of Tyler Street • Elimination of any public access into the preserve portion of the site from areas surrounding the proposed Project (as determined in consultation with the city, boulders/k-rail, etc.) • Elimination of any public access to the preserve portion of the site from within the proposed Project (no rear gates)				
Cultural Resources					
MM CUL-1	**Archeological Monitor** Potential impacts to buried artifacts or human remains inadvertently discovered during project grading would be mitigated through the requirement for archaeological and Native American monitors to be present on-site during grading activities. The archeological monitor would ensure that if any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines section 15064.5. If any find is determined to be significant, representatives from the City and the archaeologist will meet to determine the appropriate avoidance measures	Applicant/Qualified Archaeological & Native American Monitor(s)	City of Santee Department of Planning and Building	Site inspections & approval of archaeological monitoring report	During site preparation and grading

or other appropriate mitigation. All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the City will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed on other parts of the project site while mitigation for cultural resources is being carried out.

If human skeletal remains are uncovered during project construction, the archaeological monitor will direct the contractor or appropriate representative to halt work, contact the San Diego County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5(e)(1) of the CEQA Guidelines. If the coroner determines that the remains are Native American, the project proponent will contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the contractor shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the contractor has

	discussed and conferred, as prescribed in this section (California Public Resources Code Section 5097.98) with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.				
Geology and Soils					
MM-PAL-1	**Paleontological Find**				
	A. Pre-Grading Conference 1. Prior to any grading on any portion of the project site, a qualified paleontologist shall be retained to attend the pre-grading construction meeting and would be available to meet the requirements for the project as outlined below. A qualified paleontologist (or paleontological monitor) is an individual with an MS or PhD in paleontology or geology who is familiar with paleontological procedures and techniques. No grading permits shall be issued until the name and contact information for the qualified paleontologist (or paleontological monitor) has been submitted to the Planning Director. 2. A paleontologist or designee (?) shall be present during grading as determined at the pre-grading conference.	Applicant/Qualified Paleontologist	City of Santee Department of Planning and Building	Verification of contract with qualified paleontologist	Prior to issuance of grading permit
	B. Fossil Recovery and Curation 1. If fossils are discovered, the paleontologist (or paleontological monitor) shall be immediately notified to recover them. No work that could impact the uncovered potential paleontological find is permitted until the area is cleared by the paleontologist. In most cases, this salvage can be completed in a short period of time. However, some fossil specimens (such as complete large mammal	Applicant/Qualified Paleontologist Applicant/Qualified Paleontologist	City Department of Planning and Building City Department of Planning and Building	City approval of attendance report City approval of monitoring report prepared by the qualified paleontologist	During grading During grading

	skeleton) may require an extended salvage period. In these instances the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovery of small fossil remains, such as isolated mammal teeth, it may be necessary in certain instances, to set up a screen-washing operation on the site. 2. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned repaired, sorted, and cataloged. 3. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall either be deposited (as a donation) in a scientific institution with permanent paleontological collections such as the San Diego Natural History Museum or retained by the City and displayed to the public at an appropriate location such as a library or City Hall.				
Hazards and Hazardous Materials (if Wildfire Mitigation Measures (MM-WF) are the same as Hazardous and Hazardous Materials Mitigation Measures (MM-HHM), they are also listed here.					
MM-HHM-1 & MM-WF-1	To mitigate for the reduced FMZs on Lots 1 through 6, the Project's applicant will apply for a 1602 Permit, which is a Lake and Streambed Alteration Program by the CA Department of Fish and Wildlife that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within these Drainage areas and by doing so, allowing Lots 3 through 6 to achieve a full 100 feet of fuel modification.	Applicant/Applicant's Biologist	City Department of Planning and Building	City review and approval of 1602 Permit	Prior to issuance of grading permit

MM-HHM-2	To mitigate for the reduced FMZs on and adjacent to Lots 7 and 8 and provide the remaining FMZ along the southern and southeastern sides of Lots 7 and 8 within the Diegan Sage Scrub easement areas, a program has been put in place by the Project's biologist that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within this Diegan Sage Scrub easement area. Zone 2 BMZ impacts are not considered a significant biological impact. As a result, no compensatory mitigation is required for Zone 2 impacts, including offsite Zone 2 BMZ impacts (refer to Project's Biological Report for more information on mitigation).	Applicant/Applicant's Biologist	City Department of Planning and Building and Fire Department	City approval of vegetation thinning program	Prior to issuance of grading permit
MM-HHM-3 & MM-WF-3	Lots 1 through 8 will be required to be maintained as an extended irrigated Zone 1 FMZ landscape with drought-tolerant, fire resistive plants. The Zone 1 FMZ will extend up to the drainage channel adjacent to Lots 1 through 6 and up to the Diegan Sage Scrub easement areas adjacent to Lots 7 and 8. The extended irrigated Zone 1 landscape will include no undesirable, highly flammable plant species shall be planted, that will be routinely maintained and watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would prevent ignition by embers from a wildfire.	Applicant/Applicant's biologist	City Department of Planning and Building and Fire Department	Site inspection	During grading, construction and in perpetuity
MM-HHM-4 & MM-WF-4	Because of property boundary constraints, Lots 1 through 3 are unable to achieve a full 100 feet of FMZ onsite. To mitigate for the reduced FMZ, a 6-foot high non-combustible CMU fire wall will be constructed along the rear lot line behind Lots 1 through 3 will be constructed. The fire wall	Applicant	City Department of Planning and Building and Fire Department	Building Permit approval and site inspection	Prior to issuance of Building Permit and during construction

	will be installed to function as heat-deflecting walls.				
MM-HHM-5	In addition to the construction of a 6-foot high CMU wall, the Project proposes to provide exterior glazing in windows (and sliding glass doors, garage doors, or decorative or leaded glass doors) facing the CE and naturally vegetated areas to be dual pane with both panes tempered glass to mitigate for the reduced FMZ within Lots 1 through 3. Dual pane, one pane tempered glass has been shown during testing and in after fire assessments to significantly decrease the risk of breakage and ember entry into structures. Therefore, requiring code-exceeding dual pane, both panes tempered is anticipated to be an important safety measure that provides enhanced structure protection and provides mitigation for reduced fuel modification zones and limited setbacks from adjacent structures.	Applicant	City Department of Planning and Building and Fire Department	Building Permit approval and site inspection	Prior to issuance of Building Permit and during construction
MM-HHM-6	Wildland exposed sides of the structures on Lots 1 through 3 shall also include 5/8-inch Type X fire rated gypsum sheathing applied behind the exterior covering or cladding (stucco or exterior siding) on the exterior side of the framing, from the foundation to the roof for a facade facing the CE and naturally vegetated areas. 5/8-inch Type X fire rated gypsum sheathing is required to be manufactured in accordance with established ASTM standards defining type X wallboard sheathing as that which provides not less than one-hour fire resistance when tested in specified building assemblies and has been tested and certified as acceptable for use in a one-hour fire rated system. CertainTeed Type X Gypsum Board has a Flame Spread rating of 15 and Smoke Developed rating of 0, in accordance	Applicant	City Department of Planning and Building and Fire Department	Building Permit approval and site inspection	Prior to issuance of Building Permit and during construction

	with ASTM E 84, (UL 723, UBC 8-1, NFPA 255, CAN/ULC-S102); UL classified for Fire Resistance (ANSL/UL 263; ASTM E119) and listed under UL File No. CKNX.R3660 (Certainteed, 2021).				
MM-HHM-7 & MM-WF-7	Areas requiring ventilation to the outside environment will require ember-resistant vents such as Brandguard, Vulcan, or O'Hagin brands. These vents exceed the code requirement of a minimum 1/16-inch not to exceed 1/8-inch openings. All vents used for this project will be approved by SFD. Please refer to the specification in Attachments 6 and 7 (to the Preliminary Fire Assessment, Fire Behavior Analysis, and FMZ Recommendations Summary Letter prepared by Dudek dated November 2021) for a more detailed description of Brandguard, Vulcan, and O'Hagin ventilation brands.	Applicant	City Department of Planning and Building and Fire Department	Building Permit approval and site inspection	Prior to issuance of Building Permit and during construction
MM-HHM-8	Non-combustible fencing shall be required to be installed for areas within Fire Hazard Severity Zones and/or Wildland Urban Interface Areas, including within five feet of every structure and along the side yards of each residence (Santee Municipal Code, Chapter 11.18.020, Section 4908.1). Dudek agrees with the requirements for avoiding wood/combustible fences on perimeter lots that abut unmaintained CE areas. However, the use of Kroy Vinyl Fencing (see Attachment 8 – Kroy Vinyl Fencing Fire Rating to the Preliminary Fire Assessment, Fire Behavior Analysis, and FMZ Recommendations Summary Letter prepared by Dudek dated November 2021) or fire retardant treated lumber, such as Hoover's lumber product, are considered acceptable fencing materials to use for the proposed interior 6-foot high fencing (see Attachment 9 – OSFM Approved Hoover X to the	Applicant	City Department of Planning and Building and Fire Department	Building Permit approval and site inspection	Prior to issuance of Building Permit and during construction

	Preliminary Fire Assessment, Fire Behavior Analysis, and FMZ Recommendations Summary Letter prepared by Dudek dated November 2021).				
MM-HHM-9 & MM-WF-9	No eave overhangs. By requiring no eaves instead of the code required boxed eaves, the structure eliminates the ability of capturing hot air and embers that may circulate under a boxed eave and instead allows the hot air to either bounce off the side of the structure or fly over the structure entirely.	Applicant	City Department of Planning and Building and Fire Department	Building Permit approval and site inspection	Prior to issuance of Building Permit and site inspection
MM-HHM-10 & MM-WF-10	Annual FMZ Inspections. Yearly fuel modification maintenance shall be required by the Project's HOA and each individual property owner. The communities HOA as well as individual property owners, shall be responsible for obtaining an FMZ inspection and report from a qualified SFD-approved 3rd party inspector in May of each year certifying that vegetation management activities throughout the Project site and within each individual lot have been performed pursuant to ~~this Fire letter~~ the Preliminary Fire Assessment, Fire Behavior Analysis, and FMZ Recommendations Summary Letter prepared by Dudek dated November 2021. This includes verifying that wood bark and other combustible mulches shall not be used within the first 5 feet from the homes. See Section IX of the Initial Study for additional details regarding the fuel modification zone vegetation maintenance program.	Applicant/HOA	City Department of Planning and Building and Fire Department	Site inspection	Annually, in perpetuity
Noise (Vibration)					
MM-NOI-1	**Construction-Related Ground-borne Vibration** To avoid building damage or nuisance caused by ground-borne vibration during construction, the	Applicant/Applicant's Construction Contractor	City of Santee Department of Planning and Building	Issuance of grading permit	Prior to and during construction including clearing,

	construction contractor shall comply with the following documentation and equipment and/or through -ground (or combination of horizontal and vertical) distance restrictions: a. Prior to initiation of all construction activities, pre-construction building conditions shall be documented for all structures within 12 feet of grading activities. b. When grading is required within 52 through-ground feet any residential structure, a small bulldozer or similar light equipment shall be used. c. When soil compaction is required within 12 through-ground feet of any residential structure, a hand-operated tamper or walk-behind compactor shall be used, and the resident(s) of that structure shall be temporarily relocated until soil compaction within 12 through-ground feet of that structure is complete.				grubbing and grading
Tribal Cultural Resources					
MM-TCR-1	The Permittee enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe(s) that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the City and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items	Applicant	City of Santee Department of Planning and Building	Approval of contract and agreement with a TCA Tribe	Prior to issuance of grading permit

	located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.				
MM-TCR-2	Prior to issuance of a grading permit, the Permittee shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008), and a Native American monitor(s) associated with a TCA Tribe(s) to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor(s). This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor(s) is associated with a TCA Tribe(s). The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.	Applicant	City Department of Planning and Building	Verification of contract with qualified archaeologist	Prior to issuance of grading permit
MM-TCR-3	The qualified archaeologist and a Native American monitor(s) shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.	Applicant/Retained qualified archaeologist and Native American monitor(s)	City Department of Planning and Building	Verification of attendance at pre-grading meeting	Prior to grading
MM-TCR-4	During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist, or an archaeological monitor working under the direct supervisor of the qualified archaeologist, and the Native American monitor(s) shall be on site full-time. If imported fill materials, or fill used from other areas of the project site, are to be incorporated at the project site, those fill materials shall be absent of any tribal cultural resources. The	Applicant/Retained qualified archaeologist and Native American monitor(s)	City Department of Planning and Building	Approval of monitoring program prepared by qualified archaeologist and Native American monitor(s) (TCR-	During initial grubbing, site grading, excavation or disturbance of the ground surface

	frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor(s), shall be responsible for determining the duration and frequency of monitoring.			1) and site inspection	
MM-TCR-5	In the event that previously unidentified cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor(s) shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.	Applicant/Retained qualified archaeologist and Native American monitor(s)	City Department of Planning and Building	Approval of monitoring program prepared by qualified archaeologist and Native American monitor(s) (TCR-1) and site inspection	During initial grubbing, site grading, excavation or disturbance of the ground surface
MM-TCR-6	If a cultural resource is discovered that may qualify as a historical, unique archaeological, and/or tribal cultural resource, the qualified archaeologist shall notify the City of said discovery, and shall conduct consultation with TCA tribe(s) to determine the most appropriate mitigation. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor(s), shall determine the significance of the discovered resource. Recommendations for the resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe	Applicant/Retained qualified archaeologist and Native American monitor(s)	City Department of Planning and Building	Approval of monitoring program prepared by qualified archaeologist and Native American monitor(s) (TCR-1) and site inspection	During initial grubbing, site grading, excavation or disturbance of the ground surface

	and the Native American monitor(s) and be submitted to the City for review and approval.				
MM-TCR-7	The avoidance and/or preservation of significant cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources must first be considered and evaluated as required by CEQA. Where any significant resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor(s), and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor(s), shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.	Applicant/Retained qualified archaeologist and Native American monitor(s)	City Department of Planning and Building	Approval of monitoring program prepared by qualified archaeologist and Native American monitor(s) (TCR-1) and site inspection	During initial grubbing, site grading, excavation or disturbance of the ground surface
MM-TCR-8	If the qualified archaeologist elects to collect any archaeological materials that qualify as tribal cultural resources, the Native American monitor(s) must be present during any testing or cataloging of those resources. Moreover, if the qualified archaeologist does not collect the archaeological materials that qualify as tribal cultural resources that are unearthed during the ground disturbing activities, the Native American monitor(s), may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions.	Applicant/Retained qualified archaeologist and Native American monitor(s)	City Department of Planning and Building	Approval of monitoring program prepared by qualified archaeologist and Native American monitor(s) and site inspection	During initial grubbing, site grading, excavation or disturbance of the ground surface

	The project archaeologist shall document evidence that all cultural materials have been curated and/or repatriated as follows: 1) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received. OR 2) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/ researchers for further study. The collection and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter form the curation facility stating the prehistoric archaeological materials have been received and that all fees have been paid.				
MM-TCR-9	If the qualified archaeologist elects to collect any archaeological materials that qualify as tribal cultural resources, the Native American	Applicant/Retained qualified archaeologist and Native American monitor(s)	City Department of Planning and Building	Approval of monitoring program	During initial grubbing, site grading, excavation

	monitor(s) must be present during any testing or cataloging of those resources. Moreover, if the qualified archaeologist does not collect the archaeological materials that qualify as tribal cultural resources that are unearthed during the ground disturbing activities, the Native American monitor(s), may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. The project archaeologist shall document evidence that all cultural materials have been curated and/or repatriated through a signed curation agreement and/or collection transfer agreement. TCR-10: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor(s) shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.		prepared by qualified archaeologist and Native American monitor(s) (TCR-1) and site inspection	or disturbance of the ground surface
Wildfire (MM – WF-1, WF-3, WF-4, WF-7, WF-9, WF-10 are the same as MM-HHM-3, HHM-4, HHM-7, HHM-9 and HHM-10 and are therefore not duplicated in this section. Where WF mitigation measures are slightly different than HHM mitigation measures, they are listed below.				
MM-WF-2	To allow for the FMZs on and adjacent to Lots 7 and 8, the Project's applicant obtained an easement from Prospect Hills II, LLC, which	Applicant		

	would allow the Project's HOA to conduct approximately 50 feet of offsite Zone 2 30% thinning of the dead material or mowing non-native grasses to lower than 4-inches (if present) in the northeastern portion of Lot 7. Additionally, in order to provide the remaining FMZ along the eastern sides of Lots 7 and 8 within the onsite 'Diegan Sage Scrub' easement areas, a mitigation program has been put in place by the Project's biologist that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within this Diegan Sage Scrub easement area. Within the willow scrub Zone 2 BMZ maintenance area, because no live and/or native material is removed, impacts are not considered a significant biological impact. As a result, no compensatory mitigation is required for Zone 2 impacts within the Willow Scrub habitat (refer to Project's Biological Report for more information on mitigation).	
MM-WF-5	In addition to the construction of a 6-foot-high CMU wall, the Project proposes to provide exterior glazing in windows (and sliding glass doors, garage doors, or decorative or leaded glass doors) facing the CE and naturally vegetated areas to be dual pane with both panes tempered glass to mitigate for the reduced FMZ within Lots 1 through 3. Dual pane, one pane tempered glass has been shown during testing and in after fire assessments to significantly decrease the risk of breakage and ember entry into structures. Therefore, requiring code-exceeding dual pane, both panes tempered is anticipated to be an important safety measure	Applicant

	that provides enhanced structure protection and provides mitigation for reduced fuel modification zones and limited setbacks from adjacent structures. The window upgrade also exceeds the requirements of Chapter 7A of the CBC and providing additional protection for the structure's most vulnerable, exterior side.	
MM-WF-6	Wildland exposed sides of the structures on Lots 1 through 3 shall also include 5/8-inch Type X fire rated gypsum sheathing applied behind the exterior covering or cladding (stucco or exterior siding) on the exterior side of the framing, from the foundation to the roof for a facade facing the CE and naturally vegetated areas. 5/8-inch Type X fire rated gypsum sheathing is required to be manufactured in accordance with established ASTM standards defining type X wallboard sheathing as that which provides not less than one-hour fire resistance when tested in specified building assemblies and has been tested and certified as acceptable for use in a one-hour fire rated system. CertainTeed Type X Gypsum Board has a Flame Spread rating of 15 and Smoke Developed rating of 0, in accordance with ASTM E 84, (UL 723, UBC 8-1, NFPA 255, CAN/ULC-S102); UL classified for Fire Resistance (ANSL/UL 263; ASTM E119) and listed under UL File No. CKNX.R3660 (Certainteed, 2021). Please refer to the specification in Attachment 5 to the Preliminary Fire Assessment, Fire Behavior Analysis, and FMZ Recommendations Summery Letter prepared by Dudek dated November 2021 for a more detailed description of CertainTeed 5/8-inch Type X Fire Rated Gypsum sheathing (or similar product)	Applicant

MM-WF-8	Non-combustible fencing shall be required to be installed for areas within Fire Hazard Severity Zones and/or Wildland Urban Interface Areas, including within five feet of every structure and along the side yards of each residence (Santee Municipal Code, Chapter 11.18.020, Section 4908.1). Dudek agrees with the requirements for avoiding wood/combustible fences on perimeter lots that abut unmaintained CE areas. However, the use of Kroy Vinyl Fencing (see Attachment 8 – Kroy Vinyl Fencing Fire Rating - to the Preliminary Fire Assessment, Fire Behavior Analysis, and FMZ Recommendations Summery Letter prepared by Dudek dated November 2021) or fire retardant treated lumber, such as Hoover's lumber product, are considered acceptable fencing materials to use for the proposed interior 6-foot high fencing.	

TYLER STREET SUBDIVISION PROJECT SCH NO. 2022100498

CITY OF SANTEE CASE NOS: TENTATIVE MAP (TM2017-1), DEVELOPMENT REVIEW PERMIT (DR2017-1) AND MITIGATED NEGATIVE DECLARATION (AEIS2017-8)

Errata to the Initial Study/Mitigated Negative Declaration

The following identifies errata relative to the Tyler Street Subdivision Draft Initial Study (October 2022) which do not represent substantial revisions that would require recirculation of the environmental document, as described in State CEQA Guidelines 15073.5. That is, the revisions do not result in new significant environmental impacts, do not constitute significant new information, and do not alter the conclusions of the environmental analysis or effectiveness of the mitigation measures. Changes are provided in tracked changes format (underline for new text and ~~strikeout~~ for deleted text).

Revisions to the Initial Study/Mitigated Negative Declaration in Response to Comment Letters Received During Public Review

The following changes are made to clarify the Initial Study/Mitigated Negative Declaration based on comments received on the project during the 30-day public review period and review of such comments by the City of Santee and by the technical experts responsible for the supporting studies. Refer also to the *Responses to Comments Received on Draft MND/Initial Study* for the comment letters received in their entirety (available under separate cover).

CITY OF SANTEE
INITIAL STUDY

1. Project Title: Tyler Street Subdivision (State Clearinghouse No. 2022100498)
Case Numbers: Tentative Map (TM2017-1), Development Review Permit (DR2017-1) and Mitigated Negative Declaration (AEIS2017-8)

2. Lead Agency Name and Address: City of Santee
10601 Magnolia Avenue
Santee, CA 92071

3. Contact Person and Phone Number:

Michael Jefferson
BLUE Consulting Group
Mike@BlueConsulting.com
858-391-8145

4. Project Location: Southern terminus of Tyler Street in the City of Santee, California

5. Project Sponsor's Name and Address:

Mark Steve
4204 Jutland Drive
Suite A2
San Diego, California 92117

6. General Plan Designation: ~~R-1~~Low Density Residential (R1) and ~~p~~Park /Open Space (P/OS)

7. Zoning: R1-Low Density Residential and P/OS Park/Open Space with a CE

8. Description of Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

The project objective is to provide additional housing opportunities within the City of Santee. The project is located on vacant land on the south end of Tyler Street. The project site is a total of 27.35 acres. The project requires a Tentative Map and Development Review Permit to subdivide the property into 17 lots including 14 residential lots for homes, one street lot, and two open space/conservation easement (CE) lots. The homes will feature several sustainable features as described in the sustainability and energy measures narrative (Section Energy VI) associated with this project. Tyler Street will be extended to the south accessing the 14 lots. The Assessor's Parcel Numbers for the site are 386-290-08, 09, 10, 13, 14, 20, 22, 24 & 26. Total grading and construction time is estimated to take approximately 250 working days.

The project is located to the East of Mission Trails Regional Park. The project is generally bounded on the west by Mesa Road, on the north by Mesa Heights Road, on the south by Grossmont College and Grossmont Middle College High School, and on the east by Holden Road and Clifford Heights Road.

Of the 27.35 acres onsite, 8.41 are proposed to be impacted; preserving 19.45 acres, approximately 71% of the onsite high-quality habitat. The average residential lot size will be over 20,000 square feet, with residential lots ranging from 15,000 square feet to 27,197 square feet. The remaining area of the project site is reserved for a public road (Tyler Street, Lot A; totaling 0.93 acres) and two ~~open space easements (~~Conservation Easements (CE; Lots B, 19.45 acres and Lot C 0.32 acres; totaling 19.~~45~~77 acres). Lot ~~A~~B & C will be initially maintained by ~~an~~ a Home Owners Association (HOA~~.~~) until the Subarea Plan is approved, take permits are issued and a permanent Preserve Manager for this property is established. A site-specific CE Habitat Management Plan, including projected costs through a Property Assessment Report (PAR), will be prepared by the identified CE manager to accurately identify funding needs. The ~~fuel modification zones~~Fuel Modification Zones (FMZ) 1 and 2 will be maintained by the individual homeowners ~~since the slopes are~~

~~manufactured cut and fill slopes and are not natural slopes. Lot B~~ and the HOA depending on location. Lot B and Lot C are the ~~Open Space~~CE Lots~~.~~ supporting the preserve habitat.[1]

The property is currently vacant and contains an ephemeral channel which will be preserved within the created ~~Open Space~~CE (Lot C), that allows for the ongoing maintenance required in the fuel modification zone 2 (removal of dead material). Onsite, existing ~~Open Space~~CE (OS) Lot, per doc. 1994-0535919, is to be impacted by fuel modification zone 1 and 2 impacts. No portion of the existing Padre Dam OS is to be rezoned, it will be placed within the Projects CE to be managed and maintained in perpetuity.

Significant efforts were done to site the project within the lowest quality habitat onsite while avoiding the significant impacts to the existing sensitive species, wetlands, coastal sage scrub and chaparral.

9. Surrounding Land Uses and Setting: (Briefly describe the project's surroundings.)

To the north and west is existing R2 medium density residential tract housing. To the east and south is undeveloped low density residentially zoned land, To the west and south/west is existing ~~Open Space~~CE. The existing onsite ~~Open Space~~CE easement was created by Padre Municipal Water District in 1992 for the protection of Diegan sage scrub. This existing OS totals approximately 0.91 acres and supports non-native grasslands and disturbed area (dirt roads).

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

California Department of Fish and Game (CDFW) – Streambed Alteration Agreement (SAA - 1600 series) notification for completing the required impact neutral FMZ 2 maintenance activities within the preserved (OS) onsite willow scrub. This is not considered a significant impact and mitigation is not required.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significant impacts to tribal resources, procedures regarding confidentiality, etc.?

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

No California Native American tribes traditionally or culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1.

[1] While the development footprint of the 14 residential lots is 7.58 acres, the disturbed area that has been analyzed includes a Padre Dam Municipal Water District (Padre Dam) access easement that results in a total disturbed area of 8.41 acres, which is the area that has been analyzed herein and in the Biological Assessment for the subject project, although the project avoids direct footprint impacts to the onsite Padre Dam Diegan sage scrub easement. The total onsite preserve area will include two conservation easement lots: Lot B, which is 19.45 acres and Lot A, which is 0.32 acres. Both lots will be preserved, maintained and managed in perpetuity. This will be funded and implemented as outlined in a required post-entitlement Habitat Management Plan (HMP) and Property Assessment Report (PAR).

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture / Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology / Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology / Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☐ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities / Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

DETERMINATION (To be completed by the Lead Agency):

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Michael Coyne	Principal Planner
Printed Name	Title
M. Coyne	April 12, 2024
Signature	Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a Lead Agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the Lead Agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The Lead Agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analyses Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources. A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
a) the significance criteria or threshold, if any, used to evaluate each question; and
b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues:

I. <u>AESTHETICS.</u> Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on scenic vista?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Community Enhancement Element.
This project is located within City of Santee Multi-Habitat Planning Area (MHPA), the preserve system of the City's Multiple Species Conservation Program (MSCP). The site located east of Mission Trails Regional Park, which is a designated ~~open space~~<u>CE</u> area, and is bound to the north by Mesa Height Road. Housing developments border the northern (Mesa Height Road development) and eastern (Clifford Height Road development), Property Lines (PL) and undeveloped land occurs to the south and west.

A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Public views in the ~~City~~<u>city</u> consist of viewsheds, which are generally unobstructed panoramic views of a highly valued landscape from a public vantage point, and view corridors, which are views along public rights-of-way framed by permitted development. A substantial adverse effect to a scenic vista would occur if the project would degrade a view of a designated scenic viewshed or a highly valued landscape.

The Santee General Plan Community Enhancement Element describes numerous topographic features in the ~~City~~<u>city</u> and the surrounding vicinity as providing distinctive views and vistas from developed portions of the ~~City~~<u>city</u>. Although the Santee General Plan does not designate specific scenic vistas in the ~~City~~<u>city</u>, the major ridgeline and hillside systems provided by undeveloped areas of the northern portion of the ~~City~~<u>city</u>, including the project site, present a large portion of the views and vistas in the ~~City~~<u>city</u>. Jurisdictions outside of the ~~City~~<u>city</u> surrounding the project site, such as the County's Lakeside Community Plan, do not designate scenic vistas in the viewshed of the project site.

The project site is located in a low-lying area south of the San Diego River and north of Mission Trails Regional Park. Scenic resources in the project area include the view of the onsite slope (to be avoided and preserved) rising up to the ridgeline separating the Property form the Mission Trail Regional Park (not visible, on the other side of the ridge line).

The Project was designed to be set down as low on the site as possible while protecting the onsite drainage (elevation of 425 feet) and the ridge (elevation of 675 feet) view line. With the proposed house pads at elevations ranging from 433 to 504.5 feet, the project would not be seen from areas such as Mission Trails Regional Park or Prospect Avenue (closest main street, to the north) due to the intervening distances between these areas and the project site and the existing developed nature of the surrounding landscape.

Therefore, the project will have a less than significant impact on the distinctive views and vistas from within the developed portions of the ~~City~~city.

No other scenic resources have been identified in the project area. As a result, the project would not have a substantial adverse effect on a scenic vista. Impacts would be less than significant.

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings with a scenic highway?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:
Source(s): City of Santee General Plan, Community Enhancement and Circulation Elements.
The project site is not located within view of a state scenic highway. The closest scenic highway is State Route (SR) 125, approximately 2,200 linear feet (0.42 miles) east of the Property. Next closest is SR 52, approximately 2,770 linear feet or 0.5 miles north of the property. In addition, no rock outcroppings or historic buildings are located onsite and all trees onsite are predominantly located within the wetlands. All wetlands have been avoided and will be placed within a Conservation Easement. As a result, no impact would occur to scenic resources within a state scenic highway.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:
Source(s): City of Santee General Plan
The project is not within a Non-Urbanized area. The property is located within in an urbanized area and the project does not conflict with applicable zoning and other regulations governing scenic quality. Analysis of the proposed project's impacts on visual quality and character considers the changes in available public views of the project site. Public views were analyzed depicting various existing and proposed condition views surrounding the project site. The proposed project would alter the existing aesthetic characteristics of the project site from a limited number of vantage points; all from immediately adjacent rear yards of the surrounding residences. As a result, unless you are at the proposed entry to the development, the project would not be visible from the existing public right of way areas. Policies of the General Plan that project scenic resources are focused on protecting views of the surrounding ~~open space~~CE system. As noted above under response I.e.), the project is an infill development that would not adversely impact views from scenic vistas. As designed, the project is down low and encircled by existing development and ridgelines. Changes in the project site's aesthetic appearance would be visible from public vantage points located adjacent to the project site from the surrounding single family residential developments, to the north, and east. Public views form the south and west are blocked by the onsite ridgeline. In addition, the property is surrounded by recreational areas such as Mission Trails to the west, San Diego River to the north, major roadways (Prospect Street to the north) and highways, SR52 to the north and SR125 to the east.

The area within the project site (proposed developed area) is currently vacant and disturbed from prior grading and/or agricultural use(s). As there are no existing structures or development, the site lacks any distinguishable character. The existing visual character of the area is dominated by the steep slopes leading up to the ridgeline, the ridgeline and the

wetlands; all proposed to be avoided and preserved. Overall, the project would enhance the visual character and quality of the site and its surroundings because the project removes the accumulated trash that is all located within the development footprint and the residential structures incorporate architectural elements and landscape features that would enhance the visual quality of the area. Thus, the project would not substantially degrade the existing visual character or quality of the site and its surroundings. Impacts would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Santee Municipal Code

Although there are currently no sources of existing light or glare originating from the project site, the surrounding residential development surrounding the proposed development area are existing sources of light and glare. The project would incrementally increase the amount of light and glare in the area from outdoor lighting. Light spillover, trespass, and potential glare from project lighting are regulated by Section 13.08.070 of the Santee Municipal Code. No Project specific photometric study was required or completed. The code requires that all lights and illuminated signs shall be shielded or directed so as to not cause glare on adjacent properties or to motorists. The minimum performance criteria states that light fixtures for walks, parking areas, driveways, and other facilities shall be provided in sufficient number and at proper locations to provide illumination and clear visibility to all outdoor areas, with minimal shadows or light leaving the property. The lighting shall be stationary, directed away from adjacent properties and shielded so that no light or glare is transmitted or reflected in such concentrated quantities or intensities as to be detrimental to the surrounding area. To eliminate glare to the greatest extent possible, the exterior of the houses have been designed with large roof overhangs and constructed of stucco with cultured stone veneer; materials that would limit any potential glare. As a result, consistency with Section 13.08.070 would ensure that the project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Impacts would be less than significant.

II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information complied by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in Forest protocols adopted by the California Air Resource Board – Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee General Plan, Land Use Element; and City of Santee, Zoning Ordinance, Department of Conservation, Farmland Mapping and Monitoring Program.

The project site is currently vacant with disturbance from prior clearing and/or grading and does not support any agricultural operations. As shown on the 2012 San Diego County Important Farmland maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, the project site is mapped as Farmland of Local Importance. But none of the site is mapped as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. According to the Department of Conservation, California Farmland Conversion Report 2008 – 2010, the definition of Farmland of Local Importance for San Diego County is as follows:

> "Land that meets all the characteristics of Prime and Statewide, with the exception of irrigation."
>
> and,

> "Farmlands not covered by the above categories [Prime, Unique, and Statewide Importance] but are of significant economic importance to the county. They have a history of good production for locally adapted crops. The soils are grouped in types that are suited for truck crops (such as tomatoes, strawberries, cucumbers, potatoes, celery, squash, romaine lettuce, and cauliflower) and soils suited for orchard crops (avocados and citrus)."

The project site does not contain any agricultural operations and has no recent history of agricultural production. As a result, the project does not meet the definition of Farmland of Local Importance, which requires that the land have a history of good production for locally adapted crops. Additionally, the land is not zoned for agricultural use. Therefore, the project would not result in the conversion of agricultural land or any Prime Farmland, Unique Farmland, or Farmland of Statewide importance to a non-agricultural use. No impact would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; City of Santee, Zoning Ordinance.

The project site is zoned for Low Density Residential (R-1) and ~~Open Space~~CE use. The project site is not within an Agricultural Preserve and is not subject to a Williamson Act Contract. Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract. No impact would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; City of Santee, Zoning Ordinance.

The project site is vacant and supports: Developed area, disturbed area, Diegan coastal sage scrub, southern mixed chaparral. wetlands, grasslands and non-native grassland. The site does not contain any forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). No impact would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; City of Santee, Zoning Ordinance.

The project site is vacant and does not contain any forest or timberland as defined by Public Resource Code section 4526 or Government Code section 51104(g). No impact would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; and City of Santee, Zoning Ordinance.

Surrounding land uses are developed with residential or commercial uses. There are no agricultural uses or forest lands on-site or in the vicinity of the project site. Therefore, the project would not result in changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to a non-forest use. No impact would occur.

III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; Greenhouse Gas Assessment Tyler Street Project (OB-1, August 2020)

Following the California Clean Air Act, California was divided geographically into 15 air basins for managing the state air resources on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, have similar ambient air quality. The project site is located within the San Diego Air Basin (SDAB). Stationary sources of air emissions within each air basin are regulated by regional air quality districts, of which the project is located within the jurisdiction of the SDAPCD.

Air districts are tasked with regulating emissions such that air quality in the basin does not exceed national or California ambient air quality standards (NAAQS and CAAQS); where NAAQS and CAAQS represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. NAAQS and CAAQS have been established for six common pollutants of concern known as criteria pollutants, which include ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and respirable particulate matter (particulate matter less than 10 microns [PM_{10}] and less than 2.5 microns [$PM_{2.5}$]).

The SDAB is currently classified as a federal and state non-attainment area for ozone, and as a state non-attainment area for PM_{10}, and $PM_{2.5}$. The SDAPCD prepared an air quality plan, the 2016 Regional Air Quality Strategy (RAQS), to identify feasible emission control measures intended to progress toward attaining NAAQS and CAAQS for ozone. Reducing ozone concentrations is achieved by reducing the precursors to the photochemical formation of ozone (volatile organic compounds and oxides of nitrogen [NO_X]).

The growth forecasting for the RAQS is based in part on the land uses established by local general plans. Thus, if a project is consistent with land use designated in the local general plan, it can normally be considered consistent with the RAQS. Projects that propose a different land use than is identified in the local general plan may also be considered consistent with the RAQS if the proposed land use is less intensive than the current land use designation. For projects that propose a land use that is more intensive than the current zoning designation, detailed analysis is required to assess conformance with the RAQS.

The project site is currently designated and zoned as Low Density Residential (R-1) and ~~Open Space~~CE use. The project would be consistent with the existing land use and zoning designations for the project site, and therefore would be consistent with the growth assumptions of the General Plan. Additionally, as discussed in Section III.b below, project emissions would not exceed the project-level significance thresholds. Therefore, the project would not result in an increase in emissions that are not already accounted for in the RAQS, and impacts would be less than significant.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; Greenhouse Gas Assessment Tyler Street Project (OB-1, August 2020)

Construction Phase

Construction of the Project would result in emissions of the criteria air pollutants ROG, NOX, CO, PM10, and PM2.5. Emissions from construction would result from fuel combustion and exhaust from construction equipment and vehicle traffic and fugitive dust from earth moving operations and roadways. Criteria pollutant emissions from off-road construction equipment use were estimated using the latest CalEEMod computer model.

Whereas, construction activity is planned in two phases, with the first phase consisting of the site preparation and grading necessary to produce the site building pads. The second phase will consist of building construction, paving, and architectural coating. CalEEMod defaults were used.

Table 7 presents ppd emissions for construction activities related to the Project. As Table 7 shows, that the thresholds are not exceeded in either construction year. CalEEMod output is in Appendix A.

Table 7 – Construction Criteria Emissions

Year - Construction Phase	**Criteria Emissions (ppd)**				
	ROG	**NOx**	**CO**	**PM10**	**PM2.5**
Construction in 2021	46.780	42.46	36.69	20.41	11.99
Construction in 2022	44.02	1.53	1.84	0.10	0.10
Tyler Street Maximum Daily	***46.78***	***42.5***	***36.7***	***20.4***	***12.0***
Significance Threshold	*137*	*250*	*550*	*100*	*55*
Exceed Thresholds?	*No*	*No*	*No*	*No*	*No*

Operational Phase

CalEEMod was also used to estimate the predicted operational emissions of the Project. Operational emissions include emissions from mobile sources associated with the facility, natural gas usage, architectural coatings, consumer products, and landscaping equipment.

Emissions for each category are presented in Table 8. The thresholds of significance are also included in this table as well as information regarding whether annual operational emissions would exceed those thresholds. As shown in Table 8, operational emissions would be well below SDAPCD thresholds. Detailed emissions calculations are included in Appendix A of the Greenhouse Gas Assessment.

Table 8 – Estimated Operational Criteria

Emissions Emission Category			**Criteria Emissions (ppd)**		
	ROG	**NOx**	**CO**	PM10	**PM2.5**
Mobile	0.20	0.80	2.11	0.61	0.17
Energy	0.01	0.11	0.05	0.01	0.01
Area	0.82	0.25	1.26	0.03	0.03
Project Total	***1.0***	***1.2***	***3.4***	***0.7***	***0.2***
Significance Threshold	*137*	*250*	*550*	*100*	*55*
Exceed Thresholds?	*No*	*No*	*No*	*No*	*No*

Cumulative Impacts

In lieu of specific City guidelines, the County's Air Quality Guidelines (37) was used. The Guidelines state that even if direct air quality impacts from a proposed project are less than significant, the project may still have a cumulatively considerable impact on air quality if the emissions are in combination with other reasonably foreseeable future projects within proximity of the proposed action. Projects that would individually cause a significant direct air quality impact with respect to construction or operational PM10, PM2.5, NOX, or VOC emissions would also be considered to have a cumulatively considerable net increase in emissions.

It has been shown that during construction and operational activities, no significance threshold was expected to be exceeded; therefore, the emissions of particulate matter and NOX would not result in a significant cumulative health impact.

Additionally, the guidelines list special consideration of operational cumulatively considerable net increases due to the mobile nature of the emissions. The following guidelines for determining significance must be used for determining the cumulatively considerable net increases during the operational phase:

- A project that does not conform to the RAQS and/or has a significant direct impact on air quality with regard to operational emissions of PM10, PM2.5, NOX, and/or VOCs would also have a significant cumulatively considerable net increase.

- Projects that cause road intersections to operate at or below a level of service E (analysis only required when the addition of peak-hour trips from the Proposed Project and the surrounding projects exceeds 2,000) and create a CO hotspot create a cumulatively considerable net increase of CO.

The Project is considered consistent with the current RAQS and area- and mobile-source emissions do not cause a significant impact during Project operations. Additionally, the Project does not create a CO hotspot.

Expose sensitive receptors to substantial pollutant concentrations?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; Greenhouse Gas Assessment Tyler Street Project (OB-1, August 2020)

Sensitive receptors are defined as land uses where sensitive population groups are likely to be located (e.g., children, the elderly, the acutely ill, and the chronically ill). These land uses include residences, schools, childcare centers, retirement homes, convalescent homes, medical care facilities, and recreational facilities. Sensitive receptors that may be adversely affected by the Project include the surrounding residential land uses.

Since the Project site is adjacent to sensitive receptors, special attention is considered warranted to mitigate the potential for impact to these residences. Even though the construction management team is required to meet the SDAPCD Rule 55, Fugitive Dust Control requirements, which includes prohibition of dust leaving property line for more than 3 aggregated minutes per hour, special consideration should be observed during the grading activity nearest these residences. Therefore, the following mitigation is required:

MM-AQ-1 – As a supplement to San Diego Air Pollution Control District Rule 55, Fugitive Dust Control, the applicant shall require the contractor to apply water at least twice daily at all active earth disturbance areas sufficient to confine dust plumes to the immediate area.

Diesel Particulate Matter

During construction activities, diesel equipment will be operating and DPM is known to the State as a TAC. However, the risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure, which is defined as 24 hours per day, 7 days per week, 365 days per year, for 70 years. The short-term nature of project construction would support that exposure to diesel exhaust emissions during construction would not be significant.

c) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

The CEQA Guidelines indicate that a significant impact would occur if a project would create objectionable odors affecting a substantial number of people. While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SDAPCD. Because offensive odors rarely cause any physical harm and no requirements for their control are included in State or federal air quality regulations, the SDAPCD has no rules or standards related to odor emissions, other than its nuisance rule.

The proposed Project does not include elements that would generate objectionable odors, nor would they attract persons to an area where there would be a potential for exposure to objectionable odors. The impact would be less than significant.

IV. BIOLOGICAL RESOURCES. Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; City draft MSCP and SAP, Fire Protection Plan (FPP~~;~~), Dudek, 2022; Tyler Street Biological Assessment; BLUE Consulting Group; August, 2022)

The Property, located over approximately 27.35 acres is located at the terminus of Tyler St. in the City of Santee (City), County of San Diego. The site is located just south of Mesa Heights Road, approximately 2000 feet south of the 52 Freeway and approximately 2000 feet west of the 125 Freeway, on the La Mesa USGS 7.5-minute quadrangle.

The Property is within the City of Santee draft Multiple Species Conservation Plan (MSCP) Subarea Plan and Multiple Habitat Preservation Area (MHPA) and ~~Mission Trails Sub-Unit.~~ within the Mission Trails Sub-Unit. The Property is mapped in the Hardline Project in the draft Preserve Map V13 (city, dated October 25, 2022). As such, the Project is required to meet the 30/70 development to preservation area ratio currently under discussion for the Draft SAP Standards Areas. The Project exceeds this standard with the Property development standing at 29% taken and 71% preserved.

A portion of the Property supports designated Critical Habitat for the coastal California gnatcatcher ~~as well as~~. No impacts to the critical habitat are proposed.

In addition, an existing habitat easement to the Padre Dam Water District over approximately 0.91 acres in the south eastern corner of the property. This easement is titled 'Diegan sage scrub easement' but supports non-native grasslands and disturbed habitat (dirt access roads).

Sensitive Wildlife

The proposed Project will impact no sensitive wildlife species. Several sensitive wildlife species, afforded the California Species of Special Concern were observed on-site. These species included: coastal California Gnatcatcher (CAGN), San Diego cactus wren, and southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*). All observed/potentially occurring sensitive species are located outside the impact footprint and within the proposed CE.

Due to the presence of appropriate habitat, Diegan coastal sage scrub on-site, two rounds of focused USFWS protocol surveys (in 2013 and 2023) for the gnatcatcher were conducted. Both were positive for CAGN. During the 2013 CAGN protocol surveys, the same pair (2) of gnatcatchers was observed on the ridgeline and on the south facing slope during all three surveys, in 2023 6 CAGN were observed in the CSS on the south side of the ridgeline. In addition to the observed gnatcatchers, a cactus wren (*Campylorhynchus brunneicapillus*) pair was observed on the south facing slope (on all three surveys) and Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) were observed on the first and second surveys on the ridgeline area. While there is disturbed willow scrub onsite, due to the disturbed/isolated nature of the disturbed willow scrub, the federally and state endangered least Bell's vireo was not observed onsite during the general species surveys, and is not expected to occur on-site.

Due to the presence of appropriate habitat and patches of *Plantago erecta*, USFWS protocol surveys for the Quino Checkerspot Butterfly (QCB; *Euphydryas editha quino*) were completed on the Property. None were observed and due to a lack of observations, none are expected to occur.

Burrowing Owl (*Athene cunicularia*; SSC, Covered Species) is a crepuscular small ground-dwelling owls with a round head and no ear tufts. Typical habitat for this species includes open, dry grasslands, agricultural fields, sparse shrub lands, as well as developed areas with sufficient food sources. Common burrowing mammals that are associated with burrowing owls are ground squirrels, prairie dogs and badgers. While squirrel burrows were observed, this species was not observed during habitat assessment surveys; however suitable grassland habitat was noted to be present onsite and within the Project footprint. Thus, the potential for this species to be within the Proposed Project survey area is moderate.

As designed, proposed Project impacts are located within the portion of the site that had been historically impacted/disturbed and the furthest away from the steep-slopes leading up to the ridgeline and the sensitive upland habitats that support the sensitive species. As a result, all areas supporting sensitive species are proposed to be avoided and preserved. No compensatory wildlife mitigation is required.

As a result of not impacting sensitive wildlife species, the project will have not a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. Less than Significant with Mitigation Incorporated.

Indirect Impacts Avoidance

- As potentially appropriate bird/raptor nesting sites have been observed onsite, preventative measures to preclude direct and/or indirect impacts violating the Migratory Bird Treaty Act (MBTA) shall be implemented. Potential nesting sites are defined as large trees, burrows and/or man-made towers/poles etc. Preventative mitigation (pre-construction surveys) is required, see below.

- In order to prevent potential significant/indirect impacts to breeding birds/raptors, if grading is proposed during the bird/raptor breeding season (February 1 to Augst 31) then, a pre-construction survey for active nests onsite and within 500-feet of the footprint shall be performed no more than three days prior to the initiation of construction. If an active nest is identified onsite, then grading shall be postponed until the nest is no longer active.

- In addition, dedication of the CE and fencing along the limit of the CE will be required both during construction (temporary) and permanent fencing.

- Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, a qualified, City approved biological monitor shall be retained by the project proponent and shall be onsite during clearing, grubbing, and/or grading activities. The biological monitor shall attend all preconstruction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas and protective fencing. In addition, the biological monitor shall be on site during construction to ensure that vehicles stay within the limits of the permitted Project footprint. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City's draft MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project.

- Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, all workers shall be educated by a City approved biologist to recognize and avoid those areas which have been marked as sensitive biological resources.

- Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, biological fencing (i.e., ESA¬ type fencing) shall be installed. Prominently colored, well -installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to and/or within the Preserve.

- Immediately following construction activities, the biological monitor shall prepare and submit to the satisfaction of the City, a monitoring report documenting the project's compliance with all minimization/avoidance measures.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; draft SAP/MSCP, Tyler Street Biological Assessment; BLUE Consulting Group; August, 2022)

Sensitive Habitat Impacts – Direct Temporary and Permanent
Of the 27.35 acres onsite a total of approximately 29% of the Property, totaling 8.41 acres, are proposed to be impacted by the Project. Of these impacts, 6.78 acres are considered sensitive habitats, which will be fully mitigated with the preservation of 71% of the property within a CE and HMP/PAR in perpetuity (Table, below).

Proposed Project - Significant Impacts

Plant Community	Tier	Acres	Grading/ FMZ 1 Impacts	Sage Easement Impacts	FMZ 2 Impacts	Impacts Total
Diegan Coastal Sage Scrub	II	6.36	0.0	0.0	0.0	0.0
Native Grasslands	I	1.24	0.59	0.01	0.01	0.61**
Southern Mixed Chaparral	III	8.84	0.14	0.0	0.0	0.14**
CDFW Willow Scrub (dist.)	I	0.24	0.0	0.0	0.24***	0.24***
CDFW Ephemeral Unvegetated Channel*	I	309 linear feet/0.02	0.0	0.0	0.0	0.0
Non-Native Grasslands	III	8.7	5.27	0.28	0.19	5.74**
Disturbed habitat	IV	1.97	1.63	0.02	0.03	1.68
TOTAL		27.35	7.63	0.31	0.47	8.41

* Area not included in habitat total, calculated as underlying habitat
** Significant Impact
*** FMZ 2 – only dead material is to be removed. Not considered a CDFW significant impact.

Proposed Project – Avoided/Preserved Habitat

Plant Community	Tier	Acres	Impacts	Preserve/CE	% Preserved
Diegan Coastal Sage Scrub	II	6.36	0.0	6.36	100%
Native Grasslands	I	1.24	0.61*	0.63	51%
Southern Mixed Chaparral	III	8.84	0.14*	8.70	98%
CDFW Willow Scrub (dist.)	I	0.24	0.24**	0.24	100%
CDFW Ephemeral Unvegetated Channel*	I	309 linear feet/0.02	0.0	309 linear feet/0.02	100%
Non-Native Grasslands	III	8.7	5.74*	2.96	34%
Disturbed habitat	IV	1.97	1.68	0.29	14%
TOTAL		27.35	8.41	19.45	71%

* Significant Impact

** FMZ 2 impacts not considered significant – Willow Habitat in FMZ 2 to be included in Preserve

A total of seven vegetation communities are mapped on-site: Diegan coastal sage scrub, mixed chaparral, disturbed southern willow scrub, jurisdictional ephemeral drainage, disturbed habitat, native and non-native grasslands.

The proposed Project would potentially significantly impact three sensitive habitat types across 6.78 acres (grading impacts and Zone 1 and upland Zone 2 fuel modification zone maintenance impacts). These impacts are considered significant and require mitigation~~. The compensatory mitigation is proposed to occur offsite with the purchase of habitat mitigation credits.~~ and will be fully mitigated with the preservation of 71% of the property within a CE and HMP/PAR in perpetuity. There is a total of 19.45 acres of high-quality habitat preserved onsite because 0.86 acres of avoided habitat is within the existing 'Padre Dam WD sage scrub easement'.

Fuel Modification Zone (FMZ) 1 maintenance is required onsite within one sensitive habitat types; non-native grasslands. Impacts within the Fuel Modification Zone 1 area are considered significant impacts and ~~compensatory mitigation is required.~~ will be fully mitigated with the preservation of 71% of the property within a CE and HMP/PAR in perpetuity

Fuel Modification Zone 2 maintenance is required onsite within three (3) sensitive habitat types; native grasslands, non-native grasslands and disturbed willow scrub. Impacts within the FMZ 2 area in the willow scrub area requires the removal of only dead material. As a result, FMZ 2 impacts ~~to the Willow Scrub~~ are considered impact neutral and compensatory mitigation is not required.

Potentially significant biological impacts shall be reduced to below a level of significance with implementation of the ~~recommended~~required draft SAP/MSCP mitigation measures. For the subject Property, the requirement is that 30% or less may be impacted and 70% or more must be preserved. As proposed, the potentially significant impacts to the 29% of the property (6.78 acres of sensitive ~~habitat(s), including double mitigation for the impacts to the non-native grasslands within the existing Padre Dam Municipal Water District sage scrub easement, a minimum of 7.7~~habitats) is fully mitigated with the preservation of 71% of the property (19.45 acres ~~of sensitive habitat mitigation is required.~~).

Of the 27.35 acres onsite a total of approximately ~~30~~29% of the Property, totaling 8.41 acres, are proposed to be impacted by the Project. A total of 19.45 acres (~~70~~71%) of habitat are avoided and to be preserved by the Project. No potentially significant biological impacts to the observed sensitive plant and wildlife species, coastal sage scrub and the observed CDFW jurisdictional ephemeral channel and wetlands (avoided) are proposed. All avoided habitat is to be placed within the created ~~Open Space~~CE easements (~~OS~~CE: Lot 'B' and Lot 'C'~~) and~~), including the area within the existing water district OS sage scrub easement. Potentially significant direct impacts ~~which require compensatory mitigation~~(calculated as part of the 29% take footprint) are considered those impacts to, at most, 30% of the Property, including sensitive species/habitat(s) within the grading footprint and upland Fuel Modification Zone 1, which will be fully mitigated with the preservation of 71% of the property within a CE and HMP/PAR in perpetuity.

~~The unavoidable~~Unavoidable FMZ 1 maintenance impacts to the native grasslands and non-native grasslands within the existing approximately 0.91-acre Padre Dam 'sage scrub easement' are ~~considered significant and both the loss of the habitat and 'sage scrub easement' area acreage is proposed to be mitigated for, see mitigation section.~~proposed and mitigated with the proposed CE over 71% of the Property.

Unavoidable FMZ 2 maintenance impacts (impact neutral/no mitigation required) to the disturbed willow scrub and grasslands are required.

Sensitive Plants

~~The proposed Project will impact no sensitive plant species.~~ The proposed Project will impact no sensitive plant species. Three sensitive plant species were observed onsite. The first is California Jewel flower (*Caulanthus californicus*), a California endangered plant species, was observed in the CSS on the south side of the ridgeline. In addition, two plants listed as sensitive by the MSCP (rare, sensitive, narrow endemic, etc.) were observed onsite. Within the onsite chaparral, San Diego Viguiera (*Bahiopsis laciniata*) was observed and within the CSS, barrel cactus (*Ferocactus viridescens*; CRPR 2B.1) was observed.

In addition, dwarf plantain (*Plantago erecta*) was discovered. This plant is the host plant for the endangered Quino checkerspot butterfly (*Euphydryas editha quino*). Due to the presence of the host plant on-site, the potential for the site to support the butterfly was evaluated (USFWS protocol surveys) with negative results.

As designed, proposed Project impacts are located within the portion of the site that had been historically impacted/disturbed and the furthest away from the steep-slopes leading up to the ridgeline and the onsite sensitive upland habitats. As a result, all areas supporting sensitive species are proposed to be avoided and preserved. No additional compensatory mitigation is required.

~~*Sensitive Wildlife*~~

~~The proposed Project will impact no sensitive wildlife species. As designed, proposed Project impacts are located within the portion of the site that had been historically impacted/disturbed and the furthest away from the steep-slopes leading up to the ridgeline and the sensitive upland habitats that support the sensitive species. As a result, all areas supporting sensitive species are proposed to be avoided and preserved. No compensatory mitigation is required.~~

~~As a result of not impacting sensitive wildlife species, the project will have not a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. Less than Significant with Mitigation Incorporated.~~

~~b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?~~

~~Potentially Significant Impact~~ ~~Less than Significant with Mitigation Incorporated~~

~~Less Than Significant Impact~~ ~~No Impact~~

~~**Discussion:**~~

~~Source(s): City of Santee, General Plan, Land Use Element; Tyler Street Biological Assessment; BLUE Consulting Group; August, 2022)~~

~~Biological Impacts – Temporary And Permanent~~

~~Of the 27.35 acres onsite a total of approximately 30% of the Property, totaling 8.41 acres, are proposed to be impacted by the Project. Of these impacts, 6.78 acres are considered sensitive habitats and compensatory mitigation is required (Table, below).~~

~~**Proposed Project - Significant Impacts**~~

~~Plant Community~~	~~Tier~~	~~Acres~~	~~Grading/ FMZ 1 Impacts~~	~~Sage Easement Impacts~~	~~FMZ 2 Impacts~~	~~Impacts Total~~
~~Diegan Coastal Sage Scrub~~	~~II~~	~~6.36~~	~~0.0~~	~~0.0~~	~~0.0~~	~~0.0~~
~~Native Grasslands~~	~~I~~	~~1.24~~	~~0.59~~	~~0.01~~	~~0.01~~	~~0.61**~~
~~Southern Mixed Chaparral~~	~~III~~	~~8.84~~	~~0.14~~	~~0.0~~	~~0.0~~	~~0.14**~~
~~CDFW Willow Scrub (dist.)~~	~~I~~	~~0.24~~	~~0.0~~	~~0.0~~	~~0.24***~~	~~0.24***~~

~~CDFW Ephemeral Unvegetated Channel*~~	~~I~~	~~309 linear feet/0.02~~	~~0.0~~	~~0.0~~	~~0.0~~	~~0.0~~
~~Non-Native Grasslands~~	~~III~~	~~8.7~~	~~5.27~~	~~0.28~~	~~0.19~~	~~5.74**~~
~~Disturbed habitat~~	~~IV~~	~~1.97~~	~~1.63~~	~~0.02~~	~~0.03~~	~~1.68~~
~~TOTAL~~		~~27.35~~	~~7.63~~	~~0.31~~	~~0.47~~	~~8.41~~

~~* Area not included in habitat total, calculated as underlying habitat~~

~~** Significant Impact~~

~~*** FMZ 2 – only dead material is to be removed. Not considered a CDFW significant impact.~~

~~Proposed Project – Avoided/Preserved Habitat~~

~~Plant Community~~	~~Tier~~	~~Acres~~	~~Impacts~~	~~Preserve~~	~~% Preserved~~
~~Diegan Coastal Sage Scrub~~	~~II~~	~~6.36~~	~~0.0~~	~~6.36~~	~~100%~~
~~Native Grasslands~~	~~I~~	~~1.24~~	~~0.61*~~	~~0.63~~	~~51%~~
~~Southern Mixed Chaparral~~	~~III~~	~~8.84~~	~~0.14*~~	~~8.70~~	~~98%~~
~~CDFW Willow Scrub (dist.)~~	~~I~~	~~0.24~~	~~0.24**~~	~~0.24~~	~~100%~~
~~CDFW Ephemeral Unvegetated Channel*~~	~~I~~	~~309 linear feet/0.02~~	~~0.0~~	~~309 linear feet/0.02~~	~~100%~~
~~Non-Native Grasslands~~	~~III~~	~~8.7~~	~~5.74*~~	~~2.96~~	~~34%~~
~~Disturbed habitat~~	~~IV~~	~~1.97~~	~~1.68~~	~~0.29~~	~~14%~~
~~TOTAL~~		~~27.35~~	~~8.41~~	~~19.45~~	

~~* Significant Impact~~

~~** FMZ 2 impacts not considered significant – Willow Habitat in FMZ 2 to be included in Preserve~~

As outlined in the ~~2018~~ draft Subarea Area Plan (SAP) mitigation is required to reduce these potentially significant impacts to a level below significance. For this Property, biological mitigation of habitat impacts is successfully completed with compliance with the requirement that a minimum of 70% of the property is preserved. The proposed Project preserved 71% of the Property and the proposed habitat impacts are considered fully mitigated.

Fuel Modification Zone 2 maintenance is required within the wetlands and grasslands. Lake and Streambed Alteration Program by the CA Department of Fish and Wildlife would allow for Zone 2 maintenance which only allows for the removal of the dead material within this Drainage areas. Because this type of FMZ 2 maintenance impacts do not disturb the soils or removed healthy material, it is considered less than significant by CEQA, wildlife agencies, FMZ 2 maintenance is considered impact neutral. No significant impacts to the wetlands are proposed. No compensatory mitigation is required.

All avoided habitat, including the habitat with wetland Willow Scrub FMZ 2 maintenance requirements, is to be preserved in perpetuity within a created ~~Open Space~~CE easement.

~~Regulations within the draft subarea plan require that impacts to chaparral, native and non-native grasslands are mitigated according to the Uniform Mitigation Standards.~~

~~For the potentially significant impacts to the 6.78 acres of sensitive habitat(s), a minimum of 7.7 acres of sensitive habitat mitigation is required.~~

~~Biological Impacts –~~**Significant Direct Impacts and Mitigation Measures:**

A total of approximately 19.45 acres (approximately 71%) of the property will be avoided and preserved, including all sensitive species locations, wetlands and coastal sage scrub. The proposed project shall impact a total of 8.41 acres (29%). Because the 30/70 ratio (impact/preserve) is met, actually exceeded, all mitigation for habitat impacts are completed onsite.

No listed/sensitive species were observed or are expected to occur within the proposed development footprint; none are proposed to be impacted. Due to the fact that the proposed project will conform with the draft SAP/MSCP and its' implementing ordinances, the project will not result in a significant cumulative impact for those biological resources adequately covered by the draft SAP/MSCP.

Because the biological impacts shall be mitigated to a level below significance onsite, no cumulative impacts are created. No additional mitigation, for habitat or species, is recommended at this time. As a result of preserving 71% of the site within the required CE, a total of 19.45 acres of onsite high-quality sensitive habitat (and the sensitive species that are supported by it) are proposed to be avoided and preserved in perpetuity.

Conservation Easement (CE) and Habitat Management Plan (HMP)
As described, with the prepared CE (Lots B and C), HMP and Property Assessment Report (PAR; identifies the endowment total) the proposed Project will provide for the permanent legal protection, biological monitoring, and ecological management in perpetuity of the 19.45 acres of the Project site that would not be directly developed.

Biology Mitigation Measure 1 (bMM):
The Conservation Easement (CE) for Lots B and C, Habitat Management Plan (HMP) and Property Assessment Report (PAR) shall be prepared and approved by the City/Wildlife Agencies prior to issuance of a grading permit. The Homeowners Association (HOA) shall be required to manage the Conservation Easement and long-term management plan until the MSCP Subarea Plan is approved, take permits are issued and a permanent Preserve Manager for this property is established.

bMM2:
As potentially appropriate bird/raptor nesting sites have been observed onsite, preventative measures to preclude direct and/or indirect impacts violating the Migratory Bird Treaty Act (MBTA) shall be implemented. Potential nesting sites are defined as large trees, burrows and/or man-made towers/poles etc. Preventative mitigation measures (pre-construction surveys) are required, see below.

In order to prevent potential significant/indirect impacts to breeding birds/raptors, if grading is proposed during the bird/raptor breeding season (February 1 to Augst 31) then, a pre-construction survey for active nests onsite and within 500-feet of the footprint shall be performed no more than three days prior to the initiation of construction. If an active nest is identified onsite, then grading shall be postponed until the nest is no longer active.

bMM 3:
Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, a qualified, City approved biological monitor shall be retained by the project proponent and shall be onsite during clearing, grubbing, and/or grading activities. The biological monitor shall attend all preconstruction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas and protective fencing. In addition, the biological monitor shall be on site during construction to ensure that vehicles stay within the limits of the permitted Project footprint. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City's draft MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project.

bMM 4:
Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, all workers shall be educated by a City approved biologist to recognize and avoid those areas which have been marked as sensitive biological resources.

bMM 5:
Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, biological fencing (i.e., ESA type fencing) shall be installed. Prominently colored, well -installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to and/or within the Preserve.

Immediately following construction activities, the biological monitor shall prepare and submit to the satisfaction of the City, a monitoring report documenting the project's compliance with all minimization/avoidance measures.

bMM 6:
As described, the Property and proposed CE area is actively used by the surrounding residential community for unauthorized recreation (e.g. hiking, biking, pet walking) and contains multiple unauthorized trails. With the

construction of the Project, permanent measures will be put in place to prevent recreational access and impacts within the CE.

The following CE access Mitigation Measures will be required:

- Signage stating no access permitted and identifying the CE Habitat Preserve on metal posts a maximum of 100 feet apart along the line of the CE and public areas interface
- Gating of the proposed utility easement access road through the extension of Tyler Street
- Elimination of any public access into the preserve portion of the site from surrounding the proposed Project (as determined in consultation with the city, boulders/k-rail, etc.)
- Elimination of any public access to the preserve portion of the site from within the proposed Project (no rear gates)

Sensitive Habitat – Preventative Measures to avoid Potential Indirect Impacts

Biological resources located adjacent to the proposed development (north, south and east of the property) could be indirectly impacted by both construction and post-construction activities associated with the proposed Project.

Potential indirect impacts may include an increase in urban pollutants entering sensitive water bodies and edge effects. These edge effects include a potential increase in noise, human intrusion, and introduction of domestic animals, night lighting, habitat disturbance and pollutants (fugitive dust).

As described below, potential indirect impacts resulting from the proposed Project are not proposed/expected to occur. ~~Preventative~~The listed preventative measures will be required and implemented to ensure that indirect impacts do not occur. The Property is currently surrounded by residential development on all side and is actively utilized by the community at large through the numerous trails running through the Property.

The approval and development of the 14 residential lots will require the implementation of all identified preventative measures, during construction and under final residential use, that will separate the areas to be impacted from the preserved areas.

As described below, potential indirect impacts into the preserved area (~~open space~~CE) which supports the sensitive habitats and wildlife will be avoided~~.~~, as described and conditioned.

1. Water Quality

The proposed project site is located proximate to an ephemeral drainage and will continue to partially drain into the existing ephemeral drainage where it enters the property from a concrete box. Water quality has the potential to be adversely affected by potential surface runoff and sedimentation during the construction and operation of the project; however, Best Management Practices (BMPs) shall be implemented that shall reduce potential impacts to below significance. Therefore, the project is not expected to decrease water quality or affect vegetation, aquatic animals, or terrestrial wildlife that depends upon the water resources.

2. Habitat Disturbance

Development of residential, commercial, office, and/or restaurant uses typically lead to an increase in human presence on and around project sites. However, this is a project which is predominantly within the pre-existing developed envelope. Therefore, while there may be an increase in total human activity in the area, the area has already absorbed the biological loss to function and value and it is unlikely (if possible) that the project could lead to further fragmentation of habitat and the degradation of sensitive habitat if people or pets wandered outside the developed area. Additionally, illegal dumping of green waste, trash, and other refuse, which currently negatively impacts the adjacent habitat, would be eliminated.

3. Edge Effects

Edge effects occur when blocks of habitat are fragmented by development. Potential edge effects include: potential increase in noise, human intrusion, introduction of domestic animals, night lighting and dumping.

These edges make it easier for non-native plant species to invade native habitats. Edge effects can also make it easier

for both native and non-native predators to access prey that may have otherwise have been protected within large, contiguous blocks of habitat. In addition, the disruption of predator-prey, parasite-host, and plant-pollinator relations can occur.

The proposed project shall not lead to significant edge effects. The project's proposed landscape plan does not include any invasive plant species. Steep slopes that rim development areas are within the FMZ 1 and 2 and shall be landscaped in Fire Marshal approved native and naturalized plant material and serve as a buffer to native habitat surrounding the project site. In addition, as previously stated, the approval and development of the 14 residential lots will require the implementation of all identified preventative measures and funded to implement access control measures in perpetuity. Therefore, the Project implementation will improve on the existing habitats exposure to the current edge effects, primarily the impact of human use (walking trails with pets and dumping).

4. Night-time Lighting

Development of the project site shall introduce night-time lighting in the form of street and parking lights, car headlights, and residential lights. Night-time lighting on native habitats can provide nocturnal predators with an unnatural advantage over their prey. This could cause an increased loss in native wildlife that could be a significant impact unless mitigated. Nighttime lighting shall be consistent with the City's lighting requirements and shall not cause significant impacts on wildlife habitat. As a result, no photometric study is required.

5. Fugitive Dust

Fugitive dust produced by construction could disperse onto vegetation. Effects on vegetation due to airborne dust could occur adjacent to construction. A continual cover of dust may reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. This, in turn, could affect animals' dependent on these plants (e.g., seed eating rodents or insects or browsing herbivores).

Fugitive dust impacts shall not be considered significant because the project shall be required to implement mandatory dust control requirements, per the City approved grading plan(s) and grading ordinances, that ensure dust control is implemented and significant impacts shall not occur.

~~Biologically Significant Direct Impacts and Mitigation:~~
~~For the proposed significant impacts to 6.78 acres of sensitive habitat, a total of 7.7 acres of habitat mitigation is required; see table, below. Mitigation will be completed offsite with the purchase of compensatory habitat mitigation credits (7.7) within an approved habitat mitigation preserve.~~

~~A total of 19.45 acres of onsite high quality sensitive habitat (and the sensitive species that are supported by it) are proposed to be avoided and preserved. Avoided area/habitat will be preserved within the proposed two new OS lots, Lot 'B' and Lot 'C'.~~

~~Proposed Project Impacts and Habitat Mitigation Requirements~~

~~Plant Community~~	~~Tier~~	~~Onsite Acres~~	~~Total Impacts~~	~~Mitigation Ratio~~	~~Mitigation Acreage~~
~~Diegan Coastal Sage Scrub~~	~~II~~	~~6.36~~	~~0.0~~	~~N/A~~	~~N/A~~
~~Native Grasslands~~	~~I~~	~~1.24~~	~~0.61**~~	~~2:1~~	~~1.22~~
~~Southern Mixed Chaparral~~	~~III~~	~~8.84~~	~~0.14**~~	~~1:1~~	~~0.14~~
~~CDFW Willow Scrub (dist.)~~	~~I~~	~~0.24~~	~~0.24~~	~~N/A~~	~~N/A~~
~~CDFW Ephemeral Unvegetated Channel*~~	~~I~~	~~309 linear feet/0.02~~	~~0.0~~	~~N/A~~	~~N/A~~
~~Non-Native Grasslands~~	~~III~~	~~8.7~~	~~5.74**~~	~~1:1~~	~~5.74~~
~~Sage Easement impacts; Native Grasslands~~	~~I~~		~~0.01**~~	~~4:1 (double)~~	~~0.04~~
~~Sage Easement impacts; Non-Native Grasslands~~	~~III~~		~~0.28**~~	~~2:1 (double)~~	~~0.56~~
~~Disturbed habitat~~	~~IV~~	~~1.97~~	~~1.68~~	~~N/A~~	~~N/A~~
~~TOTAL~~		~~27.35~~	~~8.41~~		~~7.7~~

~~* Area not included in habitat total, calculated as underlying habitat~~
~~**Considered a Significant Impact (6.78 acres)~~

~~Indirect Impacts Avoidance – Mitigation Measures~~

~~• Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, a qualified, City approved biological monitor shall be retained by the project proponent and shall be onsite during clearing, grubbing, and/or grading activities. The biological monitor shall attend all preconstruction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas and protective fencing. In addition, the biological monitor shall be on site during construction to ensure that vehicles stay within the limits of the permitted Project footprint. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City's draft MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project.~~

~~• Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, all workers shall be educated by a City approved biologist to recognize and avoid those areas which have been marked as sensitive biological resources.~~

~~• Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, biological fencing (i.e., ESA type fencing) shall be installed. Prominently colored, well- installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to and/or within the Preserve.~~

~~• Immediately following construction activities, the biological monitor shall prepare and submit to the satisfaction of the City, a monitoring report documenting the project's compliance with all minimization/avoidance measures.~~

Summary

As a result of the Project design, implementation of the required habitat Mitigation Measures (30% take/70% preserve ratio), preventative indirect impacts prevention mitigation measures, ~~avoidance of all riparian habitat, proposed compensatory mitigation measures for the unavoidable loss of sensitive habitats, including: native grasslands, southern mixed chaparral and non-native grasslands~~preserving and managing the avoided habitat within a CE and HMP/PAR in perpetuity, no substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service is proposed. Less than Significant with Mitigation Incorporated.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; Tyler Street Biological Assessment; BLUE Consulting Group; August 2022)

Refer to response for Section IV. b) above. The Project does not significantly impact any riparian habitat. CDFW jurisdictional wetlands and waters were observed onsite. Due to the ephemeral nature of the storm flows through the onsite channel, the USACE has no jurisdiction. The proposed development proposes FMZ 2 within the willow scrub area. This requires the removal of dead material – not living material. As a result, this not does not significantly impact the observed CDFW jurisdictional ephemeral drainage channel (unvegetated) or wetlands (willow scrub). All disturbed CDFW jurisdictional Willow Scrub habitat will be avoided and preserved. No substantial diversion or obstruction to the natural flow, or substantial change to the bed, channel, or bank, or if there is any use of material from the bed, channel, or bank, or if there is deposition of debris, waste, or other material where it may pass into a river, stream, or lake, is proposed. No substantial adverse effect on existing fish and wildlife resources is proposed. All 0.24 acres of wetlands are to be preserved and maintained (FMZ 2) onsite within the OS. The maintenance of the BMZ 2 is a less than significant impact. No wetland mitigation is required.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, ~~Open Space~~CE Conservation Element, City of Santee Draft Multiple Species Conservation Plan (MSCP) Subarea Plan; Tyler Street Biological Assessment; BLUE Consulting Group; August 2022).

The property does not support an identified formal established native resident or migratory wildlife corridors. The proposed Project will not impede the use of native wildlife nursery sites. The project footprint, generally located at the toe of the natural slope, is vacant and has been previously graded/altered. This portion of the site is highly disturbed with accumulated trash in the wetlands and urban uses on three sides. As a result, this area does not function as a wildlife movement corridor. The property is located adjacent to ~~open space~~CE (adjacent to the western property line), and between two additional large blocks of existing fully conserved lands. As such the project western portion (to be preserved) supports stepping stone linkages between nearby ~~open space~~CE lands. Because the proposed development is clustered in the low-lying area along the eastern property line (adjacent to the existing offsite developed area), potential impacts to the ridgeline, the habitat and the wildlife corridor is avoided and preserved (supporting the grasslands, CSS and chaparral).

Due to the distance away from the steep slopes and ridgeline (greater than 450 linear feet and 150 feet of vertical elevation) potentially significant direct or indirect impact to the adjacent wildlife movement corridor is not expected to occur. No mitigation is required. Less than significant impact.

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, Draft MSCP Subarea Plan, General Plan, Land Use Element; Tyler Street Biological Assessment; BLUE Consulting Group; July 2022)

The City of Santee has a Conservation Element in the General Plan. The purpose of the Conservation Element is to identify the community's natural and man-made resources and to encourage their wise management in order to assure their continued availability for use, appreciation and enjoyment. The Conservation Element includes policies and implementation measures to encourage the conservation and proper management of natural resources and ~~open space~~CE areas in the City. No standalone protection policy (e.g. for ornamental trees) is applicable in the City. The project would not conflict with or prevent implementation of the draft Plan because the project ~~site is not located within~~meets and/or exceeds the ~~Draft~~standards and mitigation requirements required by the draft Subarea ~~Preserve and is not proposed for conservation.~~Plan (dMSCP).

Thus, the project would not conflict with any local policies or ordinances protecting biological resources. Project impacts would be less than significant.

e) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; Tyler Street Biological Assessment; BLUE Consulting Group; August 2022)

The proposed project would not conflict with the City of Santee Draft MSCP Subarea Plan. As discussed above in Section IVb), the project ~~applies~~exceeds the ~~Standard Uniform Ratios~~required 70% onsite preservation from the draft Subarea Plan to mitigate for onsite Project habitat impacts. The project preserves the majority of the high-quality

habitat onsite, including habitat occupied by the San Diego cactus wren and Coastal California gnatcatcher. Both of these species are proposed covered species in the Draft MSCP Subarea Plan. The project's ~~open space~~CE abuts ~~open space~~CE to the south, and is between two fully conserved lands. By preserving the easternmost habitat, it allows for Coastal California gnatcatcher and other wildlife stepping stone linkages between the nearby ~~open space~~CE lands. Because the proposed project clusters the proposed residential development adjacent to existing development and preserves the onsite ~~open space~~CE adjacent to other ~~open space~~CE, the project is consistent with the goals of the Subarea Plan. Project impacts would be less than significant.

V. CULTURAL RESOURCES. Would the project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; Cultural Resources Study for the Tyler Street Residential Project (Brian F. Smith and Associates, Inc; May 3, 2018).

Two previously recorded cultural resources, SDI-11,542H and SDI-11,543, were relocated within the Tyler Street Residential Project boundary during the current study. Site SDI-11,542H is characterized as the remnants of a mid-twentieth century rural residential property with an associated trash scatter situated approximately 125 meters south/southwest of the southern terminus of Tyler Street. Site SDI-11,543 represents a low density prehistoric lithic scatter with no subsurface components situated along an east-to-west-trending ridge approximately 250 meters south/southwest of the southern terminus of Tyler Street. Both sites were originally recorded in 1989 by Affinis (Knight et al. 1989). The current study verified the locations of the sites and conducted a significance testing and evaluation program for both.

The testing of SDI-11,542H and SDI-11,543 has provided information indicating that neither of the two sites represents a location of archaeological significance as defined by CEQA or the City of Santee. Based upon the analysis of the recovered artifacts and testing program, both sites lack additional research potential or deposits and are evaluated as not CEQA-significant and not eligible for the California Register of Historical Resources. Further, because the sites are not significant under any CEQA criteria, they are also not eligible for the National Register of Historic Places. For Site SDI-11,542H, the artifact analysis and review of archival data indicates the site was likely occupied during a short period between the 1940s and 1960s. In addition, the small number of artifacts recovered from subsurface tests indicates the concentration of historic material found in the southwestern corner of the site does not extend beyond the limits of the surface expression of the site. The lack of any developed significant subsurface component also further indicates that the property was not occupied for an extended period of time. For Site SDI-11,543, the lack of subsurface artifacts and the lithic recovery of eight pieces of lithic debitage and one core from the site surface suggests that the prehistoric activity was associated with the testing of material and expedient production of flake-based tools. Quartzite lithic material is extremely common in this region, and the ease of access to this material allowed prehistoric occupants to produce tools as needed without necessarily transporting raw material to use areas. Since the site exhibits a small surface scatter of artifacts with no subsurface deposit, ecofacts, or features, the information already obtained represents a large portion of the research potential of the site and it is unlikely that significant additional and different information would be gathered from further investigations due to the lack of a subsurface deposit. The project site is vacant and does not contain any structures. No historical resources are located on the project site, and therefore, the project would not cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5.

Impacts would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:
Source(s): City of Santee, General Plan, Land Use Element; Cultural Resources Study for the Tyler Street Residential Project (Brian F. Smith and Associates, Inc; May 3, 2019).

The proposed development for the Tyler Street Residential Project will include the grading of the location of SDI-11,542H. Although Site SDI-11,543 is to remain in ~~open space~~CE, increased development in the general area may indirectly impact the site through greater pedestrian use of the already established trails and dirt roads found on the property. Nevertheless, impacts to the cultural sites will not be significant as the research potential of both resources has been exhausted based upon the recovered testing data. However, due to the location of the project site partially within the floodplain of the wetlands and in an undeveloped area, there is a potential for site grading to inadvertently uncover buried archaeological resources.

As a result, impacts would be potentially significant and mitigation would be required.

CUL-1 Archeological Monitor
Potential impacts to buried artifacts or human remains inadvertently discovered during project grading would be mitigated through the requirement for archaeological and Native American monitors to be present on-site during grading activities. The archeological monitor would ensure that if any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines section 15064.5. If any find is determined to be significant, representatives from the City and the archaeologist will meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the City will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed on other parts of the project site while mitigation for cultural resources is being carried out.

If human skeletal remains are uncovered during project construction, the archaeological monitor will direct the contractor or appropriate representative to halt work, contact the San Diego County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5(e)(1) of the CEQA Guidelines. If the coroner determines that the remains are Native American, the project proponent will contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the contractor shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the contractor has discussed and conferred, as prescribed in this section (California Public Resources Code Section 5097.98) with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

With implementation of archaeological monitoring during grading (CUL-1), the project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. Project impacts would be less than significant with mitigation.

c) Disturb any human remains, including those interred outside of formal cemeteries?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated
☐ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element; Cultural Resources Study for the Tyler Street Residential Project (Brian F. Smith and Associates, Inc; May 3, 2018).

See Section V. b) above.

VI. ENERGY. Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source: Appendix F (Energy Conservation) of the California Environmental Quality Act (CEQA) Guidelines

This section provides a summary of the energy regulatory framework, discusses the existing conditions on the project Site, discloses potential energy use during construction and operation of the proposed project, and identifies project design features and mitigation measures that may reduce energy consumption and thereby enhance energy conservation.

The proposed project would result in less than significant impacts on the wasteful, inefficient, or unnecessary use of energy due to various design features including balance grading on-site to reduce haul trips during construction, extensive on-site solar to meet the demand for electricity, design of the proposed project, installation of energy efficient appliances and lights, as well as installation of efficient water fixtures. The 14 proposed single family homes shall contain the following sustainable energy efficient measures. All interior lighting shall be high efficacy with vacancy sensor switches at bathrooms, laundry rooms, and garages. All exterior lighting shall be high efficacy with motion sensor I photo cell controls. All appliances and exhaust fans shall be Energy Star compliant. All HVAC systems shall be high efficiency with min. 14 SEER and min. 92% AFUE. All residences shall be equipped with solar ready measures. All garages shall have EV capable circuits for future electric vehicle charging. All water fixtures shall be reduced consumption fixtures complying with current California Green Standards.

Along with the above-listed sustainable measures for each home there will be sustainable features incorporated into the landscaped areas. This includes bioretention drainage control and shade trees. All landscaping shall be drought tolerant and utilize a drip irrigation system for each separate home. With the adherence to the increasingly stringent building and vehicle efficiency standards as well as implementation of the proposed project's design features that would reduce energy consumption, the proposed project would not contribute to a cumulative impact to the wasteful or inefficient use of energy. As such, the proposed project would not result in a cumulatively considerable impact on energy.

The project's operational energy usage would be minimized through compliance with the Sustainable Santee Plan, including such measures as constructing Energy Star Certified buildings. The project would also implement project features required to comply with the California Building Code Standards (i.e., or Title 24 of the California Code of Regulations [CCR]) and California Green Building Standards Code. Therefore, the project would not result in an environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Less than significant impacts would occur.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

☐ Potentially Significant Impact ☐Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source: Appendix F (Energy Conservation) of the California Environmental Quality Act (CEQA) Guidelines

The project would be built and operated in accordance with existing, applicable regulations, which include, but are not limited to, the California Green Building Standards Code, CARB regulations, and the Sustainable Santee Action Plan (City 2020). This plan aims to reduce the City's Greenhouse Gas (GHG) emissions by 40 percent below its 2005 levels by 2030. Construction equipment and operation equipment would be maintained to allow for continuous energy-efficient operations. Additionally, the project would incorporate energy-efficient features into the proposed residences in compliance with these regulations, as described above in Item VI.a. The project would therefore not conflict with any state or local plan for energy efficiency, and no impacts would occur.

VII. GEOLOGY AND SOILS. Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:

☐ Potentially Significant Impact ☐Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee Municipal Code; Division of Mines and Geology Special Publication 42 Preliminary Geotechnical and Update letter completed by Advanced Geotechnical Solutions, Inc.; Dated March 12, 2019.

The project site is not located within an area that has been identified as having a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. As a result, the risk of rupture of the ground surface would be unlikely. The primary seismic risk to the San Diego metropolitan area is the Rose Canyon fault zone located approximately 13 miles west of the site. Therefore, the project would not expose people or structures to significant risk of loss injury or death involving rupture of a known earthquake fault. Project impacts would be less than significant.

ii) Strong seismic ground shaking?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee Municipal Code; Preliminary Geotechnical and Update letter completed by Advanced Geotechnical Solutions, Inc.; Dated March 12, 2019. See Section VII. a) i. above.

The primary seismic risk to the San Diego metropolitan area is the Rose Canyon fault zone located approximately 13 miles west of the site. However, as the project would be required to comply with all seismic standards of California Building Code, project impacts would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee Municipal Code; Preliminary Geotechnical and Update letter completed by Advanced Geotechnical Solutions, Inc.; Dated March 12, 2019.

The project site is located in Geotechnical Hazard Zone C1 and C3 according to the Safety Element of the General Plan. Zone C1 is identified as having a moderate to high potential for liquefaction, while zone C3 is classified as having a "low to moderate" potential for liquefaction. As the project site is not underlain by a known active or potentially active fault, the potential for ground rupture due to faulting is considered low. Liquefaction of granular soils can be caused by strong vibratory motion due to earthquakes. A liquefaction analysis of the site was completed and found the site would be susceptible to liquefaction. Total dynamic settlement potential was estimated to range from 0.5 to 1.0 inch for design earthquake ground motion and differential dynamic settlement was anticipated to be 1 inch or less within 50 horizontal feet. Based on this relative small settlement, the geotechnical report recommends inclusion of dynamic settlement in the structural analysis. No ground improvements are recommended to address the liquefaction potential

With implementation of geotechnical recommendations which are automatically required as part of the grading permit under Municipal Code 15.58.120, no substantial risk associated with liquefaction would occur. Project impacts would be less than significant.

iv) Landslides?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee Municipal Code; Preliminary Geotechnical and Update letter completed by Advanced Geotechnical Solutions, Inc.; Dated March 12, 2019.

The project site is located in Geotechnical Hazard Zone C1 and C3 according to the Safety Element of the General Plan. Zone C1 is classified as being marginally susceptible to landslides, while zone C3 is classified as "generally to marginally" susceptible to landslides. However, the project site is relatively flat, and no steep slopes are located on-site or adjacent to the property. No landslides have been observed on the project site or in the vicinity of the project site. Project impacts would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee Municipal Code, Engineering Division.

The project site is relatively flat, which limits the potential for substantial soil erosion. In addition, the project would include landscaping, which would minimize erosion potential. Throughout construction and operation, the project is required to comply with Section 15.58.140 (erosion control plans) of the City of Santee Municipal Code and landscaping requirements. Due to these factors, the project would not result in substantial soil erosion or the loss of topsoil. Project impacts would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee Municipal Code; Preliminary Geotechnical and Update letter completed by Advanced Geotechnical Solutions, Inc.; Dated March 12, 2019.

The project site was included within the area of analysis and found that potential geotechnical issues related to compaction, liquefaction, and seismicity could be addressed through adherence to specified geotechnical recommendations. Liquefaction potential would be addressed through implementation of geotechnical report recommendations which are automatically required as part of the grading permit under Municipal Code 15.58.120 (refer to VII a) iii above). Thus, as detailed in the Preliminary Geotechnical Investigation, project impacts related to subsidence due to on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse would be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee Municipal Code; Preliminary Geotechnical and Update letter completed by Advanced Geotechnical Solutions, Inc.; Dated March 12, 2019.

The project site is located in Geotechnical Hazard Zone C1 and C3 according to the Seismic Safety Element of the General Plan. Zone C1 and C3 are classified as having a variable potential for soil expansion. During geotechnical field investigations, expansive soils were not observed within the upper soil layers at the site. With implementation of the geotechnical investigation recommendations required as part of the grading permit under Municipal Code 15.58.120, including laboratory testing of import soils for expansion potential, the project would not result in substantial risks to life or property from expansive soils. Thus, project impacts would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion: The project would be served by a public sewer. Therefore, no septic tanks or alternative wastewater disposal systems are proposed. No impact would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion: No potentially significant paleontological impact has been identified for the project site and no prehistoric resources have been previously recorded on the project site. The site does not appear to contain any indicators of significant cultural resources or geologic features. The site also does not contain any resources listed on the City's Historic Sites Survey.

While none are expected to occur, if a unique paleontological resource or site or unique geologic feature are discovered during the grading, they shall be recovered by a qualified paleontologist. Potentially significant impacts would be mitigated through the requirement for a paleontological consultant to be hired and available if a unique paleontological resource or site or unique geologic feature is uncovered. This is detailed in the following mitigation measure (PAL-1).

Implementation of PAL-1 would reduce any potentially significant impacts to paleontological resources to a level that is less than significant.

PAL-1 Paleontological Find

A. Pre-Grading Conference

1. Prior to any grading on any portion of the project site, a qualified paleontologist shall be retained to attend the pre-grading construction meeting and would be available to meet the requirements for the project as outlined below. A qualified paleontologist (or paleontological monitor) is an individual with an MS or PhD in paleontology or geology who is familiar with paleontological procedures and techniques. No grading permits shall be issued until the name and contact information for the qualified paleontologist (or paleontological monitor) has been submitted to the Planning Director.

2. A paleontologist or designee (?) shall be present during grading as determined at the pre-grading conference.

B. Fossil Recovery and Curation

1. If fossils are discovered, the paleontologist (or paleontological monitor) shall be immediately notified to recover them. No work that could impact the uncovered potential paleontological find is permitted until the area is cleared by the paleontologist. In most cases, this salvage can be completed in a short period of time. However, some fossil specimens (such as complete large mammal skeleton) may require an extended salvage period. In these instances the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovery of small fossil remains, such as isolated mammal teeth, it may be necessary in certain instances, to set up a screen-washing operation on the site.

2. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned repaired, sorted, and cataloged.
3. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall either be deposited (as a donation) in a scientific institution with permanent paleontological collections such as the San Diego Natural History Museum or retained by the City and displayed to the public at an appropriate location such as a library or City Hall.

VIII. GREENHOUSE GAS EMISSIONS. Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan; Greenhouse Gas Assessment Tyler Street Project City of Santee, San Diego County.;OB-1; Dated August 2020.

The GHG emissions estimates for this analysis includes the following sources of annual direct and indirect emissions: (1) area sources (e.g., landscaping-related fuel combustion sources and natural gas fireplaces); (2) energy use associated with residential and non-residential buildings; (3) water and wastewater; (4) solid waste; (5) mobile sources (e.g., passenger vehicles and trucks); and (6) construction. The ongoing operational emissions consist of the first five categories, while the one-time emissions are associated with construction. The typical types of GHG emissions resulting from developments such as the Project are emissions of CO2, CH4, and N2O.

One-time emissions are those construction emissions that are not reoccurring over the life of the Project. The major construction phase included in this analysis is grading and on-site earth balancing. Emissions are from off-road construction equipment and on-road vehicles like worker and vendor commuting and trucks for soil and material hauling.

Some emissions would occur every year after buildout. GHGs are emitted from buildings because of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO2 and other GHGs directly into the atmosphere; these emissions are considered direct emissions when associated with a building. GHGs are also emitted during the generation of the electricity from fossil fuels used by the project buildings, these emissions are indirect emissions.

Indirect GHG emissions also result from the production of electricity used to convey, treat, and distribute water and wastewater. The amount of electricity required to convey, treat, and distribute water depends on the volume of water as well as the sources of the water. In addition, CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill using waste disposal rates by land use and overall composition.

The primary source of annual GHG emissions are associated with on-road mobile sources related to residents, workers, customers, and delivery vehicles visiting the land use types in the project. A summary of all GHG emissions from the proposed Project is presented in Table 9.

Table 9 – Proposed Project GHG Emissions

Category	CO2e (t/year)
Direct – Mobile (Amortized Construction)	11.1
Direct – Mobile (Operational)	110.6
Direct – Area Source	11.3
Indirect – Purchased Electricity (Power)	39.2
Indirect – Purchased Natural Gas (Power)	23.0
Indirect – Purchased Electricity (Water)	7.2
Direct – Fugitive – Solid Waste	8.2
TOTAL	211

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of greenhouse gases?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee Municipal Code; Greenhouse Gas Assessment Tyler Street Project City of Santee, San Diego County.;OB-1; Dated September 2020.

In 2020, the City of Santee adopted the Sustainable Santee Plan (SSP), which is a qualified greenhouse gas reduction plan under CEQA Guidelines section 15183.5. Agencies may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan.

The SSP includes a Project Consistency Checklist (Checklist) for determining whether development projects are consistent with the SSP. As discussed in the Checklist, the SSP addresses community GHG emissions at the programmatic level; projects demonstrated to be consistent with the SSP through use of the Checklist would result in less than significant contributions to climate change. The Checklist for the revised project is included as Appendix F. The project would be consistent with the existing General Plan and land use zoning designations, and therefore would be consistent with the land use assumptions used in the SSP. As demonstrated in the Checklist, the project would implement all applicable GHG reduction measures related to energy efficiency, solid waste, and clean energy required by the City's Sustainable Santee Plan. Specifically, the project would be consistent with the following goals applicable to the project:

Measure 2.1 – New residential construction meets or exceeds California Green Building Standards Tier 2 Voluntary Measures**.**

It will be completed as an item in the project's conditions of approval and as a note on the grading plan.

Measure 6.1 – Proposed project streets include sidewalks, crosswalks, and other infrastructure that promotes non-motorized transportation options.

While not applicable because the project is such size as to render this measure unfeasible, the Project does include sidewalks on both sides of Tyler Street..

Measure 6.2 – Proposed project installs bike paths to improve bike transit.

The Mobility Element or Active Transportation Plan call for bike paths in this area. Not applicable because the project is such size as to render this measure unfeasible.

Measure 7.1 – Install electric vehicle chargers in all new residential and commercial developments.
a. For new Single Family Residential, install complete 40 Amp electrical service and one e charger.

It will be completed as an item in the project's conditions of approval and as a note on the grading plan.

Measure 8.1 – Implement traffic flow improvement program.

Not applicable because the project is such size as to render this measure unfeasible.

Measure 9.1 – Reduce waste at landfills.

While not applicable because the project is such size as to render this measure unfeasible., the Project will be required to divert construction waste to recycling facilities.

Measure 10.1 – Increase distributed energy generation within City of Santee by implementing the following

applicable photovoltaic solar systems: a. Single family residential to install at least 2kW per unit of PV solar systems, unless the installation is infeasible due to poor solar resources established in a solar feasibility study prepared by a qualified solar consultant submitted with an application.

It will be completed as an item in the project's conditions of approval and as a note on the grading plan.

IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion: Source(s): Project Description.

The project includes construction of single-family residential housing development. Construction of the project would involve standard grading and construction activities, which require temporary use of fuels and other hazardous materials. Construction of the project would involve standard grading and construction activities that require temporary use of fuels and other hazardous materials. The use and handling of materials associated with the construction of the project would follow all applicable federal, state, and local regulations, including California Occupational Safety and Health Administration, California Department of Transportation (Caltrans), and Department of Environmental Health Hazardous Materials Division. The project would comply with all applicable state and local regulations for hazardous materials and waste management during project construction and operation of the 14 lot single-family residential development.

The proposed residential uses would involve the routine use of hazardous materials (cleaners, degreasers, etc.). However, such materials are ubiquitous and product labeling identifies appropriate handling and use of these materials. Use of common household hazardous materials are typical of residential uses and are not associated with generation of significant hazards to the public or the environment. Thus, operation of the project would result in a less than significant hazard associated with the routine transport, use, or disposal of hazardous materials would occur.

As a result, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Project impacts would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): Project Description. See Section VII. a) above.

The project would not involve a use that would result in foreseeable upset and accident conditions from the release of hazardous materials into the environment. The property supports no existing structures. No demolition is required that could be a source of hazardous materials. The proposed residential uses would be associated with the routine use of common hazardous materials; however, no significant hazards due to upset and accident conditions involving the release of hazardous materials would occur because use of common hazardous materials are typical of residential uses and are not associated with generation of significant hazards to the public or the environment. Impacts would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): Santee School District website.

The project site is not located within one-quarter mile of an existing or proposed school. As a result, the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No impact would occur.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): California Department of Toxic Substances Control, EnviroStor Database; Geotracker Database.

The project site is not identified on the California Department of Toxic Substances Control, Hazardous Waste and Substances Site List compiled pursuant to Government Code Section 65962.5. Additionally, existing residential development are already located directly adjacent to this site. As a result, the project would not create a significant hazard to the public or the environment as a result of being located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. Project impacts would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): San Diego Regional Airport Authority, Airport Land Use Commission Consistency Determination dated January 2, 2020.

Aeronautical Study Number 2018- AWP-10540-OE.

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure:	Building Houses
Location:	Santee, CA
Latitude:	32-49-45.00N NAD 83
Longitude:	117-00-38.00W
Heights:	510 feet site elevation (SE)
	20 feet above ground level (AGL)
	530 feet above mean sea level (AMSL)

The FAA has reviewed the aeronautical study in of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Based on this evaluation, marking and lighting are not necessary for aviation safety. Project impacts would be less than significant.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan Safety Element; Santee Fire Department, FPP; Dudek, 2022.

The project includes provision for emergency response access.

The project site is located in an existing developed area with access to major roadways that would allow for emergency evacuation. In addition, the project has been reviewed and approved by the Fire Marshal with the preparation, coordination and approval of a Fire Protection Plan (FPP; Dudek, 2022). Through this review, it has been shown that the project would not impair implementation of, or physically interfere with, emergency response and impacts would be less than significant.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion: Source(s): General Plan, Safety and Conservation Elements; Santee Municipal Code-Urban Wildland Interface, Tyler Street Brush Management Zone Assessment; FPP- Dudek, 2022.

The project site is located adjacent to and within an urbanized area and is not within or adjacent to a California Department of Forestry State Responsibility Area for wildland fire protection. Fuel Modification Zones (FMZ) will be provided around all new single-family development lots within the Project development that are adjacent to ~~open space~~CE areas. All dwelling units on the Project site will be highly ignition resistant based on required construction design, materials, and methods. There are six lots that cannot achieve a full 100 feet of FMZ on the Project property for various reasons, including property boundary constraints (Lots 1 through 3), being adjacent to an ~~open space~~CE easement area (Diegan Sage Scrub Easement per document 1994-0535919 recorded 9-8-94) for the Diegan coastal sage scrub located in the southeastern portion of the Project site (adjacent to Lots 7 and 8), or an ephemeral drainage channel abuts the northeastern portion of Lots 1 through 5). To mitigate for the reduced FMZs on Lots 1 through 6, the Project's applicant will apply for a 1602 Permit, which is a Lake and Streambed Alteration Program by the CA Department of Fish and Wildlife that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within these Drainage areas and by doing so, allowing Lots 3 through 6 to achieve a full 100 feet of fuel modification, Additionally, a 6-foot concrete masonry unit (CMU) fire wall will be installed along the property boundary adjacent to Lots 1 through 3 and code exceeding construction and landscape alternatives are proposed for Lots 1 through 3.

In order to mitigate and to provide the remaining FMZ along the southern and southeastern sides of Lots 7 and 8 within the Diegan Sage Scrub easement areas a small portion of the easement area (Zone 1) and 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within this Diegan Sage Scrub easement area will be within the FMZ. By doing so, Lots 7 and 8 will be able to provide a full 100 feet of FMZ in all directions, including achieving a full 50-ft. irrigated Zone 1 and a full 50-ft. thinning Zone 2. Zone 1 BMZ impacts are considered significant and if required, additional on-site mitigation would be required at a 2:1 mitigation ratio; this mitigation would be completed onsite within the proposed ~~open space~~CE areas along the western side of the development. Zone 2 BMZ impacts are considered impact neutral and not considered a significant biological impact. As a result, no compensatory mitigation is required for Zone 2 impacts, including offsite Zone 2 BMZ impacts. Additional code exceeding construction and landscape alternatives that provide the same practical effect as the 100 feet FMZ will also be provided for Lots 7 and 8.

Proposed Mitigation Measures and Recommendations

The following are City and State fire and building code required measures for building in wildland urban interface areas.

1. The proposed Tyler Street 14-lot single-family residential subdivision achieves a minimum 50 feet of on-site FMZ for every lot, and Lots 6 through 14 achieve a full 100 feet of FMZ (50 feet irrigated Zone 1 and 50 feet of a thinned Zone 2) without the need to provide additional mitigation. Lots 1 through 8 are unable to achieve a full 100 feet of FMZ within the property limits; these lots are able to achieve between 50 and 100 feet of FMZ and will be required to implement the code exceeding mitigation measures described below.

2. Each of the new single-family residential structures within the proposed Tyler Street 14-lot subdivision site will be code compliant, ignition resistive, and fully-sprinklered in compliance with applicable portions of the City of Santee Municipal Code, as well as with the 2019 edition of the California Building Code (CBC), Chapter 7A (or then current edition); 2019 edition of the California Fire Code (CFC), Chapter 49 (or then current edition); and 2019 edition of the California Residential Code (CRC), Section 237 (or then current edition), as adopted by the City;

3. All rooms and enclosed spaces within each of the new single-family residences, including within the garages, will be provided with an NFPA 13D fire sprinkler system with additional coverage. The NFPA 13D system is required:

a. To be designed by a licensed fire protection engineer or SFD-approved sprinkler contractor.

b. To provide fire inspector's test value five feet above grade. To install a fire sprinkler box in garage with wrench and three heads of each type used in design of fire sprinkler system;

c. To provide sufficient water supply as determined by fire sprinkler hydraulic calculations, which may require increased meter and piping size. If fire flow is insufficient for the designed system, alternative options, such as a fire pump designed to boost fire flow, may be considered, to the approval of SFD. Alternative options will be submitted to SFD for approval before installation;

d. Automatic or self-closing doors shall be installed and conform to the exterior door assembly standards addressed in Chapter 7 of the CBC;

4. A fire alarm system shall be installed in accordance with NFPA 72, Fire Protection Signaling System and SFD requirements, for monitoring the flow switch and inter-connection with the dwellings' smoke detectors. The fire alarm system will be supervised by a third-party alarm company. The system will be tested annually, or as needed, with test results provided to SFD;

5. Zone 1 requires a minimum 50 feet of irrigated landscape planted with drought-tolerant, fire resistive plants. No undesirable, highly flammable plant species shall be planted. The landscaping will be routinely maintained and will be watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would prevent ignition by embers from a wildfire;

6. The new residential design also provides an unimpeded, all-weather pathway (minimum three feet wide) on all sides of the residential structures for firefighter access around the entire perimeter of the structure;

Code Exceeding Mitigation Measures As previously mentioned, due to site constraints, it is not possible to achieve the full 100 feet FMZ width for every lot of the proposed Tyler Street 14-lot subdivision Project. As such, this Preliminary Fire Assessment Summary Letter details both required elements for constructing a residential structure in a very high fire hazard severity area, as well as additional measures that will be implemented to mitigate for the lots with non-conforming fuel modifications zones. These measures are customized for this site based on the analysis results and focus on providing functional equivalency as a City defined, full fuel modification zone.

The following are City and State fire and building code required measures to be implemented per the requirements for building in wildland urban interface areas.

1. The proposed Tyler Street 14-lot single-family residential subdivision achieves a minimum 50 feet of onsite FMZ for every lot, and Lots 6 through 14 achieve a full 100 feet of FMZ (50 feet irrigated Zone 1 and 50 feet of a thinned Zone 2) without the need to provide additional mitigation. Lots 1 through 8 are unable to achieve a full 100 feet of FMZ within the property limits; these lots are able to achieve between 50 and 100 feet of FMZ and will be required to implement the code exceeding mitigation measures described below.

2. Each of the new single-family residential structures within the proposed Tyler Street 14-lot subdivision site will be code compliant, ignition resistive, and fully-sprinklered in compliance with applicable portions of the City of Santee

Municipal Code, as well as with the 2019 edition of the California Building Code (CBC), Chapter 7A (or then current edition); 2019 edition of the California Fire Code (CFC), Chapter 49 (or then current edition); and 2019 edition of the California Residential Code (CRC), Section 237 (or then current edition), as adopted by the City;

3. All rooms and enclosed spaces within each of the new single-family residences, including within the garages, will be provided with an NFPA 13D fire sprinkler system with additional coverage. The NFPA 13D system is required:

   a. To be designed by a licensed fire protection engineer or SFD-approved sprinkler contractor.
   b. To provide fire inspector's test value five feet above grade. To install a fire sprinkler box in garage with wrench and three heads of each type used in design of fire sprinkler system;
   c. To provide sufficient water supply as determined by fire sprinkler hydraulic calculations, which may require increased meter and piping size. If fire flow is insufficient for the designed system, alternative options, such as a fire pump designed to boost fire flow, may be considered, to the approval of SFD.

   Alternative options will be submitted to SFD for approval before installation; d. Automatic or self-closing doors shall be installed and conform to the exterior door assembly standards addressed in Chapter 7 of the CBC;

4. A fire alarm system shall be installed in accordance with NFPA 72, *Fire Protection Signaling System* and SFD requirements, for monitoring the flow switch and inter-connection with the dwellings' smoke detectors. The fire alarm system will be supervised by a third-party alarm company. The system will be tested annually, or as needed, with test results provided to SFD;

5. Zone 1 requires a minimum 50 feet of irrigated landscape planted with drought-tolerant, fire resistive plants. No undesirable, highly flammable plant species shall be planted. The landscaping will be routinely maintained and will be watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would prevent ignition by embers from a wildfire;

6. The new residential design also provides an unimpeded, all-weather pathway (minimum three feet wide) on all sides of the residential structures for firefighter access around the entire perimeter of the structure;

The following code exceeding mitigation measures are being provided for nonconforming lots unable to achieve a full 100 feet of fuel modification (Lots 1 through 5, 7 and 8). These code exceeding mitigations were found to meet or exceed the code required 100 feet fuel modification zones through science and application and were accepted by numerous fire agencies throughout California:

1. To mitigate for the reduced FMZs on Lots 1 through 6, the Project's applicant will apply for a 1602 Permit, which is a Lake and Streambed Alteration Program by the CA Department of Fish and Wildlife that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within these Drainage areas and by doing so, allowing Lots 3 through 6 to achieve a full 100 feet of fuel modification.

2. To mitigate for the reduced FMZs on and adjacent to Lots 7 and 8 and provide the remaining FMZ along the southern and southeastern sides of Lots 7 and 8 within the Diegan Sage Scrub easement areas, a program has been put in place by the Project's biologist that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within this Diegan Sage Scrub easement area. Zone 2 BMZ impacts are not considered a significant biological impact. As a result, no compensatory mitigation is required for Zone 2 impacts, including offsite Zone 2 BMZ impacts (refer to Project's Biological Report for more information on mitigation).

3. Lots 1 through 8 will be required to be maintained as an extended irrigated Zone 1 FMZ landscape with drought-tolerant, fire resistive plants. The Zone 1 FMZ will extend up to the drainage channel adjacent to Lots 1 through 6 and up to the Diegan Sage Scrub easement areas adjacent to Lots 7 and 8. The extended irrigated Zone 1 landscape will include no undesirable, highly flammable plant species shall be planted, that will be routinely maintained and watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would prevent ignition by embers from a wildfire;

4. Because of property boundary constraints, Lots 1 through 3 are unable to achieve a full 100 feet of FMZ onsite. To mitigate for the reduced FMZ, a 6-foot high non-combustible CMU fire wall will be constructed along the rear lot line behind Lots 1 through 3 will be constructed. The fire wall will be installed to function as heat-deflecting walls.

5. In addition to the construction of a 6-foot high CMU wall, the Project proposes to provide exterior glazing in windows (and sliding glass doors, garage doors, or decorative or leaded glass doors) facing the ~~open space~~CE and naturally vegetated areas to be dual pane with both panes tempered glass to mitigate for the reduced FMZ within Lots 1 through 3. Dual pane, one pane tempered glass has been shown during testing and in after fire assessments to significantly decrease the risk of breakage and ember entry into structures. Therefore, requiring code-exceeding dual pane, both panes tempered is anticipated to be an important safety measure that provides enhanced structure protection and provides mitigation for reduced fuel modification zones and limited setbacks from adjacent structures. *The window upgrade also exceeds the requirements of Chapter 7A of the CBC and providing additional protection for the structure's most vulnerable, exterior side* (CODE EXCEEDING MITIGATION MEASURE);

6. Wildland exposed sides of the structures on Lots 1 through 3 shall also include 5/8-inch Type X fire rated gypsum sheathing applied behind the exterior covering or cladding (stucco or exterior siding) on the exterior side of the framing, from the foundation to the roof for a facade facing the ~~open space~~CE and naturally vegetated areas. 5/8-inch Type X fire rated gypsum sheathing is required to be manufactured in accordance with established ASTM standards defining type X wallboard sheathing as that which provides not less than one-hour fire resistance when tested in specified building assemblies and has been tested and certified as acceptable for use in a one-hour fire rated system. CertainTeed Type X Gypsum Board has a Flame Spread rating of 15 and Smoke Developed rating of 0, in accordance with ASTM E 84, (UL 723, UBC 8-1, NFPA 255, CAN/ULC-S102); UL classified for Fire Resistance (ANSL/UL 263; ASTM E119) and listed under UL File No. CKNX.R3660 (Certainteed, 2021). Please refer to the specification in Attachment 5_for a more detailed description of CertainTeed 5/8-inch Type X Fire Rated Gypsum sheathing (or similar product) CODE EXCEEDING MITIGATION MEASURE;

7. Areas requiring ventilation to the outside environment will require ember-resistant vents such as Brandguard, Vulcan, or O'Hagin brands. These vents exceed the code requirement of a minimum 1/16-inch not to exceed 1/8-inch openings. All vents used for this project will be approved by SFD. Please refer to the specification in Attachments 6 and 7 for a more detailed description of Brandguard, Vulcan, and O'Hagin ventilation brands. These use of these ember resistant vents are a CODE EXCEEDING MITIGATION MEASURE;

8. Non-combustible fencing shall be required to be installed for areas within Fire Hazard Severity Zones and/or Wildland Urban Interface Areas, including within five feet of every structure and along the side yards of each residence (Santee Municipal Code, Chapter 11.18.020, Section 4908.1). Dudek agrees with the requirements for avoiding wood/combustible fences on perimeter lots that abut unmaintained ~~open space~~CE areas. However, the use of Kroy Vinyl Fencing (see *Attachment 8 – Kroy Vinyl Fencing Fire Rating*) or fire retardant treated lumber, such as Hoover's lumber product, are considered acceptable fencing materials to use for the proposed interior 6-foot high fencing (see Attachment 9 – OSFM Approved Hoover X);

9. No eave overhangs. By requiring no eaves instead of the code required boxed eaves, the structure eliminates the ability of capturing hot air and embers that may circulate under a boxed eave and instead allows the hot air to either bounce off the side of the structure or fly over the structure entirely (CODE EXCEEDING MITIGATION MEASURE);

10. Annual FMZ Inspections. Yearly fuel modification maintenance shall be required by the Project's HOA and each individual property owner. The communities HOA as well as individual property owners, shall be responsible for obtaining an FMZ inspection and report from a qualified SFD-approved 3rd party inspector in May of each year certifying that vegetation management activities throughout the Project site and within each individual lot have been performed pursuant to this Fire letter. This includes verifying that wood bark and other combustible mulches shall not be used within the first 5 feet from the homes. See details regarding the fuel modification zone vegetation maintenance program below (CODE EXCEEDING MITIGATION MEASURE).

For Lots 1 through 3 that are unable to achieve the full 100-foot FMZ, windows (and sliding glass doors, garage doors, or decorative or leaded glass doors) facing the ~~open space~~CE and naturally vegetated areas will be required to be dual pane with both panes tempered glass. Additionally, the exposed sides of structures shall include 5/8-inch Type X fire rated gypsum sheathing applied behind the exterior covering or cladding (stucco or exterior siding) on the exterior side of the framing, from the foundation to the roof for a facade facing the ~~open space~~CE and naturally vegetated areas. The installation of the 5/8-inch Type X fire rated gypsum sheathing increases a wall's fire rating to a minimum of 1 hour, from the 30-minute rating for standard ½-inch drywall. Also, yearly fuel modification maintenance shall be required for all 14 lots by the Project's HOA and each individual property owner.

The communities HOA as well as individual property owners, shall be responsible for obtaining an FMZ inspection and report from a qualified SFD-approved 3rd party inspector in May of each year. Dudek has found that the code exceeding mitigation measures provided have been used for many other similar successful projects and demonstrate that they meet

or exceed the code required 100 feet fuel modification zone. Fire behavior modeling, as previously presented, was used to predict flame lengths and was not intended to determine sufficient fuel modification zone 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. With that said, it is anticipated that the proposed structures will be able to withstand the short duration, low to moderate intensity fire and ember shower that is projected from off-site, adjacent fuels based on several factors, as discussed below.

Justification for Reduced Fuel Modification Zones

As presented in this Preliminary Fire Assessment, Fire Behavior Analysis, and FMZ Recommendations Summery Letter Report, the FMZs provided for the proposed Tyler Street Project are not standard FMZs. Rather, Lots 1-8 -cannot achieve the required 100 feet of FMZ due to lot constraints and Project boundary limitations. However, by applying for a 1602 Permit, which would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within the Drainage areas along the northern property boundary, Lots 3 through 6 would ultimately be able to achieve a full 100 feet of fuel modification, Additionally, the construction of a 6-foot CMU fire wall along the rear property boundary adjacent to Lots 1 through 3, will function as heat-deflecting wall and stop the progression of a ground fire from advancing into the rear yards of these lots. Furthermore, to mitigate and provide the remaining FMZ along the southern and southeastern sides of Lots 7 and 8 within the Diegan Sage Scrub easement areas, a program has been put in place by the Project's biologist that would allow for irrigating within a small portion of the easement area (Zone 1) and 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within this Diegan Sage Scrub easement area. By doing so, Lots 7 and 8 will be able to provide a full 100 feet of FMZ in all directions, including achieving a full 50-ft. irrigated Zone 1 and a full 50-ft. thinning Zone 2. Zone 1 BMZ impacts are considered significant and if required, additional on-site mitigation would be required at a 2:1 mitigation ratio; this mitigation would be completed onsite within the proposed ~~open space~~CE areas along the western side of the development. Zone 2 BMZ impacts are considered impact neutral and not considered a significant biological impact. As a result, no compensatory mitigation is required for Zone 2 impacts, including offsite Zone 2 BMZ impacts. Additional code exceeding construction and landscape alternatives that provide the same practical effect as the 100 feet FMZ will also be provided for Lots 7 and 8.

- Structure Ignition

There are two primary concerns for structure ignition: 1) radiant and/or convective heat and 2) burning embers (NFPA 1144 2008, IBHS 2008, and others). 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 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 for the Tyler Street Project are required by the City of Santee and State codes but are worth listing because they have been proven effective for minimizing structural vulnerability to wildfire and, with the inclusion of required interior sprinklers (required in the 2013 Building/Fire Code update), 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 mitigation measures for buildings in WUI areas, because they were known to reduce structure vulnerability to wildfire. These measures performed so well, they were adopted into the code. The following project features are required for this 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. Application of Chapter 7A, ignition resistant building requirements
2. Minimum 1-hour rated exterior walls and doors
3. Multi- pane glazing with a minimum of one tempered pane, fire-resistance rating of not less than 20 minutes when tested according to NFPA 257, or be tested to meet the performance requirements of State Fire Marshal Standard 12-7A-2. For lots unable to achieve the full 100 feet of FMZs (Lots 1 through 5, 7 and 8) dual pane dual tempered glass windows will be installed on the exposed sides of the new residential structures. Dual pane, one pane tempered glass has been shown during testing and in after fire assessments to significantly decrease the risk of breakage and ember entry into structures. Therefore, requiring code-exceeding dual pane, both panes empered is anticipated to be an important safety measure that provides enhanced structure protection and provides mitigation for reduced fuel modification zones and limited setbacks from adjacent structures. *The window upgrade also exceeds the requirements of Chapter 7A of the CBC and providing additional protection for the structure's most vulnerable, exterior side.*
4. Ember resistant vents (recommend BrandGuard or similar vents)
5. Automatic, interior fire sprinkler system to code for occupancy type.

- Fuel Separation

As experienced in numerous wildfires, including the most recent fire storms in San Diego County (2003 and 2007), homes in the WUI are potential fuel. The distance between the wildland fire that is consuming wildland fuel and the home ("urban fuel") is the primary factor for structure ignition (not including burning embers). 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 et al. 1998). Construction materials and methods can prevent or minimize ignitions. Similar case studies indicate that with nonflammable roofs and vegetation modification from 10 to 18 meters (roughly 32 to 60 feet) in southern California fires, 85% to 95% of the homes survived (Howard et al. 1973, Foote and Gilless 1996). Similarly, 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). Damage to the structures built to the latest codes is likely from flammable landscape plantings or objects next to structures or open windows or doors (Hunter 2008).

These results support Cohen's (2000) findings that if a community's homes have a sufficiently low home ignitability, the community can survive exposure to wildfire without major fire destruction. This provides the option of mitigating the wildland fire threat to homes/structures at the residential location without extensive wildland fuel reduction. Cohen's (1995) studies suggest, as a rule-of-thumb, larger flame lengths and widths require wider fuel modification zones to reduce structure ignition. For example, valid SIAM results indicate that a 20-foot-high flame has minimal radiant heat to ignite a structure (bare wood) beyond 33 feet (horizontal distance). Whereas, a 70-foot-high flame requires about 130 feet of clearance to prevent structure ignitions from radiant heat (Cohen and Butler 1996). This study utilized bare wood, which is more combustible than the ignition resistant exterior walls for structures built today. Obstacles, including steep terrain and non-combustible fire walls can block or deflect all or part of the radiation and heat, thus making narrower fuel modification distances possible. Fires in ravines, chutes, coves, drainages, and steep-sided canyons can, under specific conditions, result in an upward draft, similar to a fireplace chimney. Chimneys on the landscape are created when air is drawn in from lower elevations, creating strong upslope drafts. The result can be acceleration of radiant and convective heat as well as actual fire spread, similar to opening the damper in a fireplace chimney. Areas where the terrain includes a restriction or narrowing can result in this type of acceleration. The terrain features adjacent the Project site include few mild examples of these "chimneys" that are not expected to significantly alter fire behavior.

- Heat Deflecting Walls

The reduced lot sizes of Lots 1 through 3 which are adjacent to a vacant property to the north are areas of concern and provide an opportunity to place a non-combustible, six-foot tall, heat-deflecting wall (lower 1 to 2 feet block wall and upper 4 to 5 feet dual pane, one pane tempered glazing or a six-foot high CMU block wall) to provide additional deflection for these lots to compensate for the reduced fuel modification zones. Walls like these have proven to deflect heat and airborne embers on numerous wildfires in San Diego, Orange, Los Angeles, Ventura, and Santa Barbara County. Rancho Santa Fe Fire Protection District, Laguna Beach Fire Department, Orange County Fire Authority, and others utilize these walls as Alternative methods based on observed performance during wildfires. This has led to these agencies approving use of non-combustible landscape walls as mitigations for reduced fuel modification zones and reduced setbacks at top of slope. These walls are consistent with NFPA 1144 Standard for Reducing Structure Ignition Hazards from Wildland Fire – 2008 Edition, Section 5.1.3.3 and A.5.1.3.3 and International Urban Wildland Interface Code (ICC 2012). NFPA 1144, A.5.1.3.3 states: "Noncombustible walls and barriers are effective for deflecting radiant heat and windblown embers from structures." These walls and barriers are usually constructed of noncombustible materials (concrete block, bricks, stone, stucco) or earth with emergency access openings built around a development where 30 feet (9 meters) of defensible space is not available.

- Non-Combustible Fencing

The side yard fencing is proposed to use vinyl fencing. The fence returns to the structure (the portion of the fence that attaches to the house and extends perpendicular to the house until it attaches to the property line fencing) would be of a non-combustible material, possibly including masonry, steel, fire retardant-treated wood, or other fire department-approved materials. This fencing arrangement conforms with best practices to minimize the likelihood that fencing material enables fire a pathway to the structure by 1) using non-combustible materials at the wildland interface, 2) ensuring that the fence return to the structure is non-combustible, and 3) utilizing a vinyl product, separated from both the wildland fuels and the structure, that has been fire rated and shown to not sustain burning. Although there are no current Office of the State Fire Marshal (OSFM)-approved listings for vinyl fencing materials, the Kroy CertainTeed Bufftech vinyl fencing proposed by Cornerstone Communities includes a fire rating indicating that it has been fire tested

to ASTM standards and performed well and that it exhibits no sustained burn, and can be considered self-extinguishing Dudek has evaluated the use of exterior fire-retardant treated lumber for the rear- or side-yard fencing on perimeter residential lots within the Tyler Street residential community Project. Dudek has determined that the ignition resistant construction requirements for structures remain applicable and valid. However, fire retardant treated lumber, such as Hoover's lumber product, can be used to substitute for solid block, solid masonry or solid steel in areas designated as a high fire hazard. Per the Office of the State Fire Marshal (OSFM) website, Listing Number 2520-1701:0100 – Hoover Treated Lumber with Exterior Fire X is an approved building material listing product for high fire hazard areas (See Attachment 9 – OSFM Approved Listing 2520-1701:0100). It should be noted that there currently is not an OSFM approved listing for vinyl fencing materials.

- Fuel Modification Area Vegetation Maintenance

All fuel modification area vegetation management shall be completed annually by May 1 of each year and more often as needed for fire safety, as determined by the SFD. The project HOA shall be responsible for all vegetation management throughout the common areas of the project site, in compliance with the requirements detailed herein and SFD requirements. Additionally, private lot owners will be responsible for installing their irrigated fuel modification zones. Prior to establishment of the irrigated fuel modification zone, the entire required irrigated fuel modification zone will be mowed to 4-inch stubble height until such time that the homeowner installs the irrigated fuel modification zone, which will be required to be in place within 6 months of structure occupancy. The residents shall maintain fuel modification zone(s) on their properties. Furthermore, the community CC&R's shall require the HOA to inspect rear yards along the perimeter and require owners to maintain their property in accordance with this Letter Report. Should owner not comply, HOA shall notify the SFD and the SFD will provide inspections per their internal standards.

- Annual Fuel Modification Zone Compliance Inspection

The property owner would obtain an FMZ inspection and report from a qualified SFD-approved 3rd party inspector in May of each year certifying that vegetation management activities throughout the Project Site have been performed pursuant to this Letter Report, including verifying that wood bark and other combustible mulches shall not be used within the first 5 feet from the homes. A copy of the annual inspection report would be provided to the Proposed Project HOA and a copy made available to SFD, if requested.

As a result of the proposed mitigation measures, potential impacts are Less than Significant with Mitigation Incorporated. The Project, with the specific mitigation measures incorporated, would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

X. HYDROLOGY AND WATER QUALITY. Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): General Plan, Conservation Element; Regional Water Quality Control Board Basin Plan; Preliminary Storm Water Mitigation Plan for Tyler Street dated April 1, 2019, prepared by Walsh Engineering and Surveying, Inc.

The project site is located in the San Diego Watershed, Lower San Diego Hydrologic Area, and Santee Hydrologic Sub-Area 907.12. The site drains to the San Diego River, which is impaired for sediments, nutrients, trash and debris, oxygen-demanding substances, oil and grease, bacteria and viruses, and pesticides. According to the San Diego Basin Plan, the beneficial uses of the San Diego River include water for industrial purposes, both contact and non-contact recreational uses, and for habitat purposes including warm freshwater habitat, wildlife habitat, and habitat for rare, threatened, or endangered species.

Because the project discharges to an area identified as appropriate for exemption by the Watershed Management Area Analysis (WMAA), this project is exempt from hydromodification flow control requirements.

This project will construct 29 rain gardens/biofiltration basins per Biofiltration (BF) -1 acting as one system which will be constructed along Tyler Street to retain the Design Capture Volume (DCV) of the 14 homes and Tyler Street extension to provide pollutant control. The proposed northeasterly slopes will be self-retaining. The entrance of the

Tyler Street extension will be primarily de-minimus and any additional area past the de-minimus threshold will be compensated for by oversizing the proposed biofiltration basins to treat the entire DCV.

The project would have the potential to generate pollutants including trash and debris, oxygen-demanding substances, oil and grease, bacteria and viruses, pesticides, sediments, nutrients, heavy metals, and organic compounds, but would not adversely affect any beneficial uses of the San Diego River because the project would treat storm water on-site to ensure pollutants do not adversely affect receiving waters. With incorporation of these design features, potential pollutants would be treated on-site, and no significant sources of chemicals or compounds would contaminate surface water sources or decrease the quality of surface water to below standards established by the San Diego Regional Water Quality Control Board's Basin Plan, Surface Water Quality Objectives.

In addition, the project would incorporate construction and post-construction Best Management Practices (BMPs) in compliance with the City's Standard Urban Storm Water Mitigation Plan. For example, BMPs employed during the construction phase would include fiber rolls, street sweeping and vacuuming, and storm drain inlet protection. Therefore, as detailed in the project's Storm Water Mitigation Plan, impacts would be less than significant. Accordingly, the project would not violate any water quality standards or waste discharge requirements. Project impacts would be less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion: Source(s): City of Santee, General Plan, Conservation Element; Padre Dam Municipal Water District

The project would obtain its water supply from the Padre Dam Municipal Water District and would not use groundwater supply for any purpose. Therefore, the project would not deplete supplies of groundwater resources, and no impact would occur.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): General Plan, Conservation Element; Regional Water Quality Control Board Basin Plan; Preliminary Storm Water Mitigation Plan for Tyler Street dated April 1, 2019, prepared by Walsh Engineering and Surveying, Inc.

The project would not substantially alter the existing drainage pattern as discussed in response for Section IX. c). The drainage basin in the pre and post developed condition is 74 acres in size.

The existing drainage is overland flow over the undeveloped land and flows into an existing ephemeral channel where it enters a storm drain system on Tyler street and discharges into the San Diego River. The runoff from the east is urban and drains to the ephemeral channel onsite through a series of storm drains and brow ditches.

In the proposed condition, drainage will continue to flow into the existing storm drain system located at the terminus of Tyler Street. A brow ditch will be constructed at the top of the southwesterly slope directing runoff from the south eastward into the existing ephemeral channel and to the west around the project. The drainage from the west will be directed to a storm drain pipe where it will confluence with the existing storm drain system on Tyler street. Runoff from the 14 homes and Tyler Street extension will flow into the curb and gutter and conveyed into a series of rain gardens/biofiltration basins on both sides of the street designed per City of Santee BMP Design Manual fact sheet BF-1 for pollutant control. The Padre Dam access road will drain into a tree well per City of Santee BMP Design Manual Site Design-1 (SD-1) for treatment.

Thus, the project will not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of amount of surface runoff in a manner which would result in flooding on-or off-site. Project impacts would be less than significant.

i. result in substantial erosion or siltation on- or off-site;

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): Source(s): General Plan, Conservation Element; Regional Water Quality Control Board Basin Plan; Preliminary Storm Water Mitigation Plan for Tyler Street dated April 1, 2019, prepared by Walsh Engineering and Surveying, Inc.

Topography of the project development site is gradually sloping with a wetland channel in the low lying portion of the site, immediately downslope of the proposed development. In the proposed condition, drainage will continue to flow into the existing storm drain system located at the terminus of Tyler Street. A brow ditch will be constructed at the top of the southwesterly slope directing runoff from the south eastward into the existing ephemeral channel and to the west around the project. The drainage from the west will be directed to a storm drain pipe where it will confluence with the existing storm drain system on Tyler street. Runoff from the 14 homes and Tyler Street extension will flow into the curb and gutter and conveyed into a series of rain gardens/biofiltration basins on both sides of the street designed per fact sheet BF-1 for pollutant control. The Padre Dam access road will drain into a tree well per SD-1 for treatment. All runoff would ultimately be discharged to the San Diego River and therefore would be exempt from hydromodification requirements.

The project would not substantially alter the drainage pattern of the site or the surrounding area in a manner that could result in substantial erosion because project drainage would be retained on-site prior to discharge to the river, which would prevent erosion. The site design directs flows to landscaped areas. With implementation of the proposed BMPs, including bio-retention swales and proposed landscaping, the project would not result in substantial erosion or siltation on-or off-site. Thus, the project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on-or off-site. Project impacts would be less than significant.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Conservation Element. Surface hydrology and hydraulic Calculations for Padre Hills TM 83-04 Santee, San Diego County California; May, 1990 by HCH Partners

No structures are proposed within the floodplain. See response Section VIII. d). As a result, a less than significant impact related to risk of loss, injury or death involving flooding would occur. As indicated in the hydrology study prepared for the adjacent developed property to the north, *Surface hydrology and hydraulic Calculations for Padre Hills TM 83-04 Santee* (May, 1990), the existing and proposed drainage improvements are adequately sized to convey the 100-year flood event. As a result, the project will NOT substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. Project impacts would be less than significant.

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): Source(s): Preliminary Storm Water Mitigation Plan for Tyler Street dated April 1, 2019, prepared by Walsh Engineering and Surveying, Inc. and the Drainage Study for Tyler Street dated April 3, 2019, prepared by Walsh Engineering and Surveying, Inc. Surface hydrology and hydraulic Calculations for Padre Hills TM 83-04 Santee, San Diego County California; May, 1990 by HCH Partners

The increase in runoff rates resulting from the increase in impervious surfaces would be offset through the use of a biofiltration basin sized to retain storm water and capture pollutants from runoff that leaves the site. With the retention of runoff in an appropriately sized biofiltration basin, project runoff would not exceed the capacity of storm water drainage systems and would not provide substantial sources of polluted runoff.

In the proposed condition, the project will have a peak flow rate of 103 cubic feet per second during the 100 year storm event. The downstream facilities has a capacity of 141 cubic feet per second per the approved Drainage Study from HCH Partners. See responses to Section VIII. a), c), and d) above. Project impacts would be less than significant.

iv. impede or redirect flood flows?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion: Source(s):

Source(s): General Plan, Conservation Element; Regional Water Quality Control Board Basin Plan; Preliminary Storm Water Mitigation Plan for Tyler Street dated April 1, 2019, prepared by Walsh Engineering and Surveying, Inc. Surface hydrology and hydraulic Calculations for Padre Hills TM 83-04 Santee, San Diego County California; May, 1990 by HCH Partners

The project would not substantially alter the existing drainage pattern as discussed in response for Section IX. c). Topography of the project development site is gradually sloping with a wetland channel in the low-lying portion of the site, immediately downslope of the proposed development. In the proposed condition, drainage will continue to flow into the existing storm drain system located at the terminus of Tyler Street. A brow ditch will be constructed at the top of the southwesterly slope directing runoff from the south eastward into the existing ephemeral channel and to the west around the project. The drainage from the west will be directed to a storm drain pipe where it will confluence with the existing storm drain system on Tyler street. Runoff from the 14 homes and Tyler Street extension will flow into the curb and gutter and conveyed into a series of rain gardens/biofiltration basins on both sides of the street designed per fact sheet BF-1 for pollutant control. The Padre Dam access road will drain into a tree well per SD-1 for treatment. All runoff would ultimately be discharged to the San Diego River and therefore would be exempt from hydromodification requirements.

The project would not substantially alter the drainage pattern of the site or the surrounding area because project drainage would be retained on-site prior to discharge to the river, which neither impedes or redirects flood flows. The site design directs flows to landscaped areas. With implementation of the proposed BMPs, including bio-retention swales and proposed landscaping, the project would not result in substantial erosion or siltation on-or off-site. Thus, the project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would impede or redirect flood flows on-or off-site. Project impacts would be less than significant.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): Project Plans.

The project site is located approximately 16 miles inland from the coast, at approximately 340 feet above mean sea level. The risk of tsunami is negligible due to the distance from the ocean and high elevation. There would be no risk

from a seiche, as the site is not located near a body of water. The project would not be at risk for mudflow, because the there is no source of water above the proposed development. No impact would occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee, General Plan, Conservation Element

The project would obtain its water supply from the Padre Dam Municipal Water District and would not use groundwater supply for any purpose. Therefore, the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. No impact.

XI. LAND USE AND PLANNING. Would the project:

a) Physically divide an established community?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion: Source(s): City of Santee, General Plan, Land Use Element.

The project would develop additional residential units that would contribute to the established community in an area that is currently used for illegally dumping trash. The project site is within an urbanized area with direct access to Tyler Street and is consistent with the General Plan land use designation for residential use. No project features are proposed that would have the potential to physically divide an established community. No impact would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Land Use Element

The project is not located within the coastal zone and no conflicts with any other policies, plans, or regulations have been identified. The proposed 14 single-family residences would be consistent with General Plan designation and zone of R-1 – Low Density Residential, with all residences clustered together within the northern portion of the property.

Onsite, adjacent to the eastern property boundary, an area totaling approximately 0.91 acres is located within an existing ~~Open Space~~CE (OS) easement; Padre Dam Municipal Water District 'Diegan Sage Scrub Easement Plan – Mesa Road Reservoir'. A total of 0.05 acres of brush Management Zone 1 maintenance impacts are required to be completed within this existing OS. Mitigation for the loss of the on-native grassland habitat and dedicated OS is proposed; see biology section.

The Property is within the City of Santee draft Multiple Species Conservation Plan (MSCP) Subarea Plan and Multiple Habitat Preservation Area (MHPA) and Mission Trails Sub-Unit. A portion of the Property supports designated Critical Habitat for the coastal California gnatcatcher. 100% of the designated critical habitat is avoided and preserved.

The project has been designed and analyzed in compliance with City ordinances, the draft MSCP and draft MHPA and would not conflict with or prevent implementation of the draft MSCP/MHPA Subarea Plan. Additionally, the proposed residential uses would be compatible with the desired community character of the surrounding residential uses and density and would not conflict with any General Plan policies. The proposed residential structures have been

designed to be compatible with the surrounding urban environment that consists of residential uses. As described in Sections 13.4, 13.5, 13.13, and 13.18, all potential environmental impacts would be mitigated to a level less than significant. Therefore, the project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and impacts would be less than significant.

As a result, the project would not conflict with any plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Project impacts would be less than significant.

XII. MINERAL RESOURCES. Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Conservation Element.

In Santee, the areas with potential mineral resources are located primarily along the floodplain of the San Diego River and on hills underlain by granitic rocks. There are no known mineral resources on the project site. Classification is completed by the State Geologist into Mineral Resource Zones (MRZ). Classification of these areas is based on geologic and economic factors without regard to existing land use and land ownership. The site is listed as MRZ 3.

Construction of the proposed project has the potential to impact the mineral resources of both known and unknown significance in MRZ-3 on the project site The project would not result in the loss of availability of known mineral resources because mining activities would not be compatible with existing development in the surrounding area—including adjacent residential uses. Although there is the potential of mineral recovery from MRZ-3 area on the project site, in accordance with the Santee General Plan Conservation Element, economic, land use compatibility, and environmental protection factors must be considered when deciding on the appropriateness of mining in a particular area. Furthermore, the Santee General Plan designates the project site for Planned Development, not mineral resources extraction. Project impacts would be less than significant.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Element.

The project site is not officially delineated as having locally important mineral resources. See response to Section XII. a) above.

XIII. NOISE. Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): General Plan, Noise Element; Santee Municipal Code Construction Noise

Short-term noise impacts could occur during the construction of the project. Construction personnel and construction equipment and materials deliveries to the site would incrementally increase noise levels on local roads leading to the site. Although there would be a relatively high single event noise exposure potential causing intermittent noise nuisance (passing trucks), the effect on longer-term (hourly or daily) ambient noise levels would be small when compared to existing hourly/daily traffic volumes on Prospect Ave. On South Slope Street, Mesa Heights Road and Tyler Steet, the noise exposure due to construction vehicles accessing the site would be greater due to the lower volume of traffic; however, construction traffic along the road would be temporary and not be substantial in nature relative to the amount of existing traffic in the project area. Therefore, short-term, construction-related impacts associated with worker commute and equipment transport to the project site would be a less than significant impact.

Noise generated during excavation, grading, and building erection on the project site may also result in short-term noise impacts over the course of the construction schedule. Construction of the project site would be completed in phases, each of which would have its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. The City's Municipal Code Noise Ordinance (section 5.04.090) restricts construction noise between 7:00 a.m. and 7:00 p.m. on Mondays through Saturdays and all times on Sundays and holidays. If activities involving construction equipment with a manufacturer's noise rating of 85 dBA Lmax or greater will be operating for more than 10 consecutive workdays, a notice must be provided to all property owners and residents within 300 feet of the site no later than 10 days before the start of construction. The notice must be approved by the City and describe the project, the expected duration, and provide a point of contact to resolve noise complaints. A standard condition requires compliance with the above noise standards established in the Santee Municipal Code with regard to construction noise.

In terms of permanent operational noise, the General Plan Noise Element (Figure 7-3, Noise/Land Use Compatibility Guide) identifies the normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable noise levels for different land uses in the City. For family residential uses, such as the proposed project, noise levels up to 65 dBA are considered normally acceptable, with noise levels between 65 and 70 dBA being conditionally acceptable. Noise levels between 70 and 75 dBA are considered normally unacceptable for family uses, while noise levels in excess of 75 dBA are clearly unacceptable. The State Uniform Building Code establishes interior noise levels of 45 dBA Community Noise Equivalent Level (CNEL) for new residential unit types. When such structures are subject to exterior noise levels of 60 dBA day/night average sound level (Ldn) or greater, an acoustical analysis is required to show that the interior noise levels would not exceed 45 dBA Ldn. This regulation is enforced by the City's Building Inspection Department.

The proposed residential units would be setback over 600 feet from Prospect Avenue, the closest major roadway in the project area, 0.5 miles south of SR-52 and approximately 0.4 miles west of SR-125. According to Figure 7-2 of the Noise Element of the General Plan, the project site is outside the noise contour associate with future noise along these roads. The proposed residential units would be constructed west of the projected 60 dBA noise contour. Therefore, the units would be considered normally acceptable with the future traffic noise levels projected in the project area, which would be less than 65 dBA CNEL. With an exterior noise level of less than 60 dBA, the project would be able to achieve the 45 dBA CNEL interior noise level identified in the State Uniform Building Code using standard building construction techniques.

With regard the project's contribution to traffic noise in the project area, the new vehicle trips would primarily utilize Prospect Avenue, South Slope Street and Mesa Height Road to access the project site. In order for those project trips to create an audible increase in ambient transportation noise levels, they must double the existing daily trips along the affected roads. Due to the nature of the decibel scale, however, a doubling of traffic will result in a three-decibel increase in noise levels, which in and of itself would not normally be a perceivable noise increase. Traffic volumes would need to be increased at least three times to result in a readily perceivable (five decibel) increase in noise (Caltrans 2013). The addition 14 single family residential house daily trips to these roadways would not double the trips on those local roads or expose noise sensitive receptors to a substantial increase in ambient transportation noise.

~~Therefore~~Because Single Family Residences (SFR) are not a significant noise generating use, noise would be typical of a single-family neighborhood. As a result, potential long term noise impacts would not be significant as the proposed use is consistent with the zone and land use designation. Further there would not be doubling of current traffic for 14 SFR, therefore any increase in traffic noise would be imperceptible. As a result, less than significant construction and operational noise impacts would occur.

b) Generation of excessive groundborne vibration or groundborne noise levels?

☐ Potentially Significant Impact ☒Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): Noise Element of the General Plan (2003); Santee Municipal Code; Construction Noise Analysis (2021a)

Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernible but without the effects associated with the shaking of a building there is less adverse reaction. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in ground distance. The City of Santee does not regulate construction vibration levels, only the hours of construction activities. Varying degrees of temporary ground-borne vibration would occur during project construction, depending on the specific construction equipment used and the operations involved. The greatest levels of vibration for the project are anticipated to temporarily occur during the site preparation and soil compaction phases of construction, which are expected to require excavators, dozers, loaders, graders, backhoes and small vibratory roller. All other construction equipment pieces are expected to result in lower vibration levels and all vibration effects would cease upon completion of the construction activities. The adjacent properties contain single family residential structures which do not operate vibration sensitive equipment but would be temporarily exposed to ground-borne vibration during proposed construction. Residences in the project vicinity that are occupied during daytime construction may be exposed to ground-borne vibration that could result in temporary nuisance to daily activities, as well as have the potential to cause building damage if not controlled (Impact NOI-1).

To address this impact, the project would implement MM NOI-1 which outlines operating conditions required to avoid the potentially significant impact. Therefore, with mitigation incorporated into the project, construction phase ground-borne vibration would be a less than significant impact.

MITIGATION MEASURES

MM NOI-1: Construction-Related Ground-Borne Vibration. To avoid building damage or nuisance caused by ground-borne vibration during construction, the construction contractor shall comply with the following documentation and equipment and/or through -ground (or combination of horizontal and vertical) distance restrictions:

1. Prior to initiation of all construction activities, pre-construction building conditions shall be documented for all structures within 12 feet of grading activities.

2. When grading is required within 52 through-ground feet any residential structure, a small bulldozer or similar light equipment shall be used.

3. When soil compaction is required within 12 through-ground feet of any residential structure, a hand-operated tamper or walk-behind compactor shall be used, and the resident(s) of that structure shall be temporarily relocated until soil compaction within 12 through-ground feet of that structure is complete.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee General Plan, Safety Element, Gillespie Field Airport Land Use Compatibility Plan.

The project site is not located within either existing (2010) or projected future (2030) airport noise contours for the Gillespie Field Airport. No other public airports or airstrips are proximate to the project. Therefore, the project would not expose people to excessive noise levels from airport noise. No impact would occur.

XIV. POPULATION AND HOUSING. Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of road or other infrastructure)?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan

The City's General Plan anticipates residential uses on this site. The proposed project would not be considered growth inducing because the project site is located within an established community, can be considered in-fill, and provides services typically found in residential communities. Less than significant impact.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee General Plan

The City's General Plan anticipates residential uses on this site. The site is vacant and would not remove any existing housing units/structures. Therefore, the project would not displace existing housing or people. No impact.

XV. PUBLIC SERVICES. Would the project:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i. Fire Protection?
ii. Police Protection?
iii. Schools?
iv. Parks?
v. Other Public Facilities?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee, General Plan, Safety Element; Fire Department.

Fire Protection: Based on a review of the project by the Santee Fire Department existing fire services are available to serve the proposed project and no new facilities would be needed. The City is a member of the San Diego County Central Zone for Fire and Emergency response. Each participating member has a mutual aid agreement with each other to provide paramedic and fire protection services in the event that additional fire-fighting units are required. As a result, service levels to the project site would be adequate, and no facilities would be required that could result in significant environmental impacts. No impact would occur.

Police protection: Police protection for the project area is provided by the San Diego County Sheriff's Department under contractual agreement with the City. Budget considerations and other special areas of concern are reflected in the staffing levels, which are addressed prior to renewal of the yearly contract between the City and the San Diego County Sheriff. As a result of ongoing evaluation of adequate staffing, existing police protection would be adequate to serve the project and the project would not necessitate the need for any new police facilities. A less than significant impact would occur.

Schools: Letters of availability from the Santee and Grossmont School Districts were received. This project is in the attendance boundaries of Chet F Harritt Elementary School. It is estimated that this development would generate 7 students. Based on this estimate, Chet F Harritt School can accommodate these new students.

The Grossmont Union High School District is responsible for providing education for students in grades 9 through 12. The subject project is within the District, more specifically it lies within the West Hills High School attendance area. The Grossmont Union High School District has a developer fee assessment policy. The current level of assessment is $1.00 per square foot for residential and $.16 cents per square foot for commercial projects. At this time, there are no plans to construct a new school in the immediate vicinity of the proposed project.

A). The project would not necessitate the construction of new school facilities or create the need for new school facilities. The Project will pay the developer assessment fees required by the Grossmont Union High School District As a result, a less than significant impact would occur.

Parks: Source(s): City of Santee Parks and Recreation Facilities Master Plan; Municipal Code. a). The project would not adversely affect existing City park facilities or create the need for new park facilities with the additional fourteen single family homes. A less than significant impact would occur.

XVI. RECREATION.

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee Municipal Code. See response to Section XII. a).

The City's 2017 Parks and Recreation Master Plan Update identifies 265.82 acres for various park types in addition to approximately 272.25 acres of regional parkland, including Mission Trails and Goodan Ranch/Sycamore Canyon County Preserve. Approximately 190.91 acres of other recreational facilities, which include the Santee Aquatics Center and Santee Lakes Recreation Preserve, are also accessible to the City. Parks and recreation land in school playgrounds, ballfields, and courts accounts for an additional 109.24 acres in the City. The Recreation Element of the Santee General Plan includes an objective to "provide a minimum of 10 acres of parks and recreational facilities for every 1,000 population in Santee. These 10 acres could include a combination of local parks, trails, school playgrounds, and other public facilities that meet part of the need for local recreational facilities." According to the Santee General Plan, almost every residence within the City is within 1 mile of a Neighborhood Park and within 3 miles of a Community Park.

As a result, the project would not adversely affect existing City Park facilities or create the need for new park facilities because the project is a 14-house single family residential development with back yards that could only incrementally increase demand for parks. As determined by the city, the 14-lot residential project is too small to require additional park area. The project would not necessitate the need for construction of new parks and would not result in a substantial physical deterioration of existing parks. As a result, a less than significant impact would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which have an adverse physical effect on the environment?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): Project Description. See response to XII. a)

No recreational facilities are required or proposed as part of the project. As a result, no impact would occur from the construction or expansion of recreational facilities.

XVII. TRANSPORTATION. Would the project:

a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): Project Description, City Engineer, City of Santee General Plan, Circulation and Safety Elements, Metropolitan Transit System.

Due to the size and location of the 14-lot residential sub-division, the Project is exempt from preparing a project specific traffic report. With incorporation of standard project conditions that require construction (extension) of the public road, Tyler Street, impacts would be less than significant. The project would not result in significant impacts to roadway segments or intersections, and the project would not impede implementation of plans for mass transit or bicycle or pedestrian facilities. The project proposes sidewalks, which will provide access to the nearest bus station approximately 0.2 miles away. The project would not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities including polices of the City General Plan and would not decrease the performance or safety of these facilities. No impact would occur

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): Project Description, City Engineer

As stated in: 15064.3. Determining the Significance of Transportation Impacts. - Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact. The site ~~is in a High Quality Transit area because it~~ is within ½ mile from a bus transit service. The Project is approximately 1,300 feet from Prospect Street with access to public bus service. The Project is also a small project generating less than 500 ADT and would therefore have less than significant transportation impact~~.~~."

The project would not impede implementation of plans for mass transit or bicycle or pedestrian facilities. The project proposes sidewalks, which will provide access to the nearest bus station located approximately 0.2 miles away. The project would not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities including policies of the City General Plan and would not decrease the performance or safety of these facilities.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): Project Description.

The project's access would be from continuation of the existing Tyler street directly into the residential community. No hazards would result from proposed design features, and no incompatible uses have been identified in the project area that would increase hazards. Project impacts would be less than significant.

d) Result in inadequate emergency access?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): Project design; Santee Fire Department.

See response to Section XV. a) above. The project would provide adequate emergency access via the proposed extension of the existing public road Tyler Street. Therefore, the project's impacts would be less than significant impact.

XVIII. TRIBAL CULTURAL RESOURCES.

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in the Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in the Public Resources Code section 5020.1(k), or

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Archaeological Survey Report, Brian F Smith dated May 3, 2018.

As described under Section V, Cultural Resources, cultural resources report (BFS, 2018) was prepared for the proposed residential development. The report concluded that mitigation monitoring would be necessary and will be conditioned. Notice shall be provided to the tribes on the City's AB 52 list. However, there is potential for buried unknown archaeological resources that may qualify as tribal cultural resources. Therefore, implementation of the following mitigation measures TCR-1 through TCR-9 and would reduce impacts to tribal cultural resources to less than a significant level.

TCR-1: The Permittee enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe(s) that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the City and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

TCR-2: Prior to issuance of a grading permit, the Permittee shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008), and a Native American monitor(s) associated with a TCA Tribe(s) to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor(s). This verification shall be presented to the

City in a letter from the project archaeologist that confirms the selected Native American monitor(s) is associated with a TCA Tribe(s). The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.

TCR-3: The qualified archaeologist and a Native American monitor(s) shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.

TCR-4: During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist, or an archaeological monitor working under the direct supervisor of the qualified archaeologist, and the Native American monitor(s) shall be on site full-time. If imported fill materials, or fill used from other areas of the project site, are to be incorporated at the project site, those fill materials shall be absent of any tribal cultural resources. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor(s), shall be responsible for determining the duration and frequency of monitoring.

TCR-5: In the event that previously unidentified cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor(s) shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

TCR- 6: If a cultural resource is discovered that may qualify as a historical, unique archaeological, and/or tribal cultural resource, the qualified archaeologist shall notify the City of said discovery, and shall conduct consultation with TCA tribe(s) to determine the most appropriate mitigation. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor(s), shall determine the significance of the discovered resource. Recommendations for the resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor(s) and be submitted to the City for review and approval.

TCR-7: The avoidance and/or preservation of significant cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources must first be considered and evaluated as required by CEQA. Where any significant resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor(s), and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor(s), shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

TCR-8: If the qualified archaeologist elects to collect any archaeological materials that qualify as tribal cultural resources, the Native American monitor(s) must be present during any testing or cataloging of those resources. Moreover, if the qualified archaeologist does not collect the archaeological materials that qualify as tribal cultural resources that are unearthed during the ground disturbing activities, the Native American monitor(s), may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. The project archaeologist shall document evidence that all cultural materials have been curated and/or repatriated as follows:

1.) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.

OR

2.) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/ researchers for

further study. The collection and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter form the curation facility stating the prehistoric archaeological materials have been received and that all fees have been paid.

TCR-8: If the qualified archaeologist elects to collect any archaeological materials that qualify as tribal cultural resources, the Native American monitor(s) must be present during any testing or cataloging of those resources. Moreover, if the qualified archaeologist does not collect the archaeological materials that qualify as tribal cultural resources that are unearthed during the ground disturbing activities, the Native American monitor(s), may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. The project archaeologist shall document evidence that all cultural materials have been curated and/or repatriated through a signed curation agreement and/or collection transfer agreement. TCR-9: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor(s) shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Archaeological Survey Report, Brian F Smith dated May 3, 2018.

As described under Section V, Cultural Resources, cultural resources report (BFSA, 2018) was prepared for the proposed residential development. The report concluded that mitigation monitoring would be necessary and will be conditioned. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe. Therefore, with the implementation of the following mitigation measures TCR-1 through TCR-9 would reduce impacts to tribal cultural resources to less than a significant level.

XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Project Description

The proposed on-site sewer system for the residential development would include sewer lines within the proposed internal roadways. The internal system would connect to a line in Tyler Street. The project's incremental increase in demand for wastewater treatment would not exceed current City wastewater capacity based on the consistency of the proposed use with planned land uses that are considered in the City's wastewater capacity planning. The project is

consistent with the General Plan; therefore, no additional wastewater treatment facilities are required. Impacts would be less than significant.

This project will be required to comply with the requirements of the City of Santee Engineering Design Standards, waste water discharge regulations and the California Plumbing Code as a condition of project approval. All wastewater would be treated consistent with applicable RWQCB treatment requirements. Because the City of Santee regulations regarding wastewater discharge are compliant with the Regional Water Quality Control Board waste water treatment requirements, this project will not have any significant impact.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Project Description

The project would result in an increase demand for water service. This increase in demand and water service can and would be provided to the proposed project by the Padre Dam Municipal Water District. In April 2021, the District issued a Water Availability letter stating that it has the facilities to serve the project and imposing certain conditions on the project, which the project must satisfy. which has water service in the area to serve the project. The water main extension for the Project will be completed within existing Tyler Street roadway (i.e., no additional impacts). Because the proposed development is consistent with the General Plan, no additional entitlements or resources would be needed to service the project. This project will have a less than significant impact.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Project Description

The proposed project would include construction of on-site sewer lines to connect the proposed project site to the existing Padre Dam Municipal Water District sanitary sewer system. In April 2021, the District issued a Sewer Availability letter stating that it has adequate facilities to serve the project and imposing certain conditions on the project, which the project must satisfy. The proposed on-site sewer system for the residential development would include sewer lines within the proposed internal roadways. The internal system would connect to a line in Tyler Street. The project's incremental increase in demand for wastewater treatment would not exceed current Padre Dam MWD and City wastewater capacity based on the consistency of the proposed use with planned land uses that are considered in the Padre Dam MWD and City's wastewater capacity planning. The project is consistent with the General Plan; therefore, no additional wastewater treatment facilities are required. Impacts would be less than significant.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Project Description

The project would comply with the City's construction and demolition recycling ordinance (Santee Municipal Code Section 13.38.060) and Solid Waste Ordinance # 339-A, which follows state regulations for solid waste and recycling.

The City, including the subject project, is served by the Sycamore Landfill, which has a total remaining capacity of 113,972,637 cubic yards with an operation date into 2042 (Cal Recycle 2020). The project is consistent with its residential land use designation; therefore, the volume of solid waste anticipated is included in the long-term waste projections for the City. The project would be served by a landfill with sufficient permitted capacity.

The project would comply with all applicable regulations related to solid waste. A less than significant impact would occur.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee General Plan, Project Description

The project would comply with the City's construction and demolition recycling ordinance (Santee Municipal Code Section 13.38.060) and Solid Waste Ordinance # 339-A, which follows state regulations for solid waste and recycling. The project would comply with all applicable regulations related to solid waste. No impact would occur.

XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☒ No Impact

Discussion:

Source(s): City of Santee General Plan, Project Description

The Project is adjacent to areas or lands classified as very high fire hazard severity zones and have incorporated Brush Management requirements that control the potential fuel load within 100 feet of the residential structures, or the equivalent with mitigation measures implemented, and 25 feet off of the paved road surface to allow for passable ingress and egress from the development. A minimum 100-foot-wide FMZ is required by the SFD (Santee Municipal Code Chapter 11.18.020, Section 4907.2, Title 14, and PRC 4290-4291) for defensible space in areas adjacent to naturally vegetated, ~~open space~~CE lands. Based on the site plan, the majority the lots within the Project site achieve 100 feet or more of on-site FMZ, which includes a minimum 50-foot wide Zone 1 (irrigated and re-planted with SFD approved fire resistive, less flammable plant species) and a 50-foot wide Zone 2 (no more than 30% of native vegetation should remain within the square footage of the planted area). However, as stated above, conceptual building footprints partially protrude into the 100 feet FMZ along the northern, southeastern, and eastern boundaries, more specifically Lots 1 through 3, 7, and 8 are constrained to providing between 50 to 100 feet of achievable on-site fuel modification. The remaining on-site fuel modification is restricted in the north by an ephemeral drainage easement (adjacent to Lots 1 through 5) and to the southeast and east by the Project boundary and onsite OS easement (adjacent to Lots 7 and 8). With the development meeting the City standards, the Project will not substantially impair an adopted emergency response plan or emergency evacuation plan. No impact.

b) 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?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Project Description

The Project is adjacent to areas or lands classified as very high fire hazard severity zones and have incorporated Brush Management requirements that control the potential fuel load within 100 feet of the residential structures and 25 feet off of the paved road surface to allow for passable ingress and egress from the development. Due to the east facing steep up-slope leading away from the development, the prevailing winds, and other factors such as the construction of the homes (double glazed windows and boxed eaves) and the maintained Fuel Modification Zone (FMZ).

As a result, the Project will not exacerbate wildfire risks, and thereby would not unduly expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Less than significant impact.

c) 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?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

Source(s): City of Santee General Plan, Project Description

The Project will require the installation and maintenance of associated infrastructure (such as roads, brush management zones, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. These impacts, both temporary and ongoing impacts have been assessed and mitigation identified in the biological resources section. All maintenance of the FMZ will be completed by the landscaping company identified by the to-be-created Home Owners Association (HOA) for the neighborhood.

The following are City and State fire and building code required measures for building in wildland urban interface areas.

1. The proposed Tyler Street 14-lot single-family residential subdivision achieves a minimum 50 feet of on-site FMZ for every lot, and Lots 6 and 9 through 14 achieve a full 100 feet of FMZ (50 feet irrigated Zone 1 and 50 feet of a thinned Zone 2). Lots 1 through 5, 7, and 8 are unable to achieve a full 100 feet of FMZ; these lots are able to achieve between 50 and 100 feet of FMZ and will be required to implement the code exceeding mitigation measures described below.

2. Each of the new single-family residential structures within the proposed Tyler Street 14-lot subdivision site will be code compliant, ignition resistive, and fully-sprinklered in compliance with applicable portions of the City of Santee Municipal Code, as well as with the 2019 edition of the California Building Code (CBC), Chapter 7A (or then current edition); 2019 edition of the California Fire Code (CFC), Chapter 49 (or then current edition); and 2019 edition of the California Residential Code (CRC), Section 237 (or then current edition), as adopted by the City;

3. All rooms and enclosed spaces within each of the new single-family residences, including within the garages, will be provided with an NFPA 13D fire sprinkler system with additional coverage. The NFPA 13D system is required:

    a. To be designed by a licensed fire protection engineer or SFD-approved sprinkler contractor.

    b. To provide fire inspector's test value five feet above grade. To install a fire sprinkler box in garage with wrench and three heads of each type used in design of fire sprinkler system;

    c. To provide sufficient water supply as determined by fire sprinkler hydraulic calculations, which may require increased meter and piping size. If fire flow is insufficient for the designed system, alternative options, such as a fire pump designed to boost fire flow, may be considered, to the approval of SFD. Alternative options will be submitted to SFD for approval before installation;

    d. Automatic or self-closing doors shall be installed and conform to the exterior door assembly standards addressed in CBC Chapter 7A, Section 704A.3.2.3;

4. A fire alarm system shall be installed in accordance with NFPA 72, Fire Protection Signaling System and SFD requirements, for monitoring the flow switch and inter-connection with the dwellings' smoke detectors. The fire alarm system will be supervised by a third-party alarm company. The system will be tested annually, or as needed, with test results provided to SFD;

5. Zone 1 requires a minimum 50 feet of irrigated landscape planted with drought-tolerant, fire resistive plants. No undesirable, highly flammable plant species shall be planted. The landscaping will be routinely maintained and will be watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would prevent ignition by embers from a wildfire;

6. The new residential design also provides an unimpeded, all-weather pathway (minimum three feet wide) on all sides of the residential structures for firefighter access around the entire perimeter of the structure;

The following code exceeding mitigation measures are being provided for nonconforming lots unable to achieve a full 100 feet of fuel modification (Lots 1 through 5, 7 and 8). These code exceeding mitigations were found to meet or exceed the code required 100 feet fuel modification zones through science and application and were accepted by numerous fire agencies throughout California:

1. To mitigate for the reduced FMZs on Lots 1 through 6, the Project's applicant will apply for a 1602 Permit, which is a Lake and Streambed Alteration Program by the CA Department of Fish and Wildlife that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within these Drainage areas and by doing so, allowing Lots 3 through 6 to achieve a full 100 feet of fuel modification.

2. To allow for the FMZs on and adjacent to Lots 7 and 8, the Project's applicant obtained an easement from Prospect Hills II, LLC, which would allow the Project's HOA to conduct approximately 50 feet of offsite Zone 2 30% thinning of the dead material or mowing non-native grasses to lower than 4-inches (if present) in the northeastern portion of Lot 7. Additionally, in order to provide the remaining FMZ along the eastern sides of Lots 7 and 8 within the onsite 'Diegan Sage Scrub' easement areas, a mitigation program has been put in place by the Project's biologist that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within this Diegan Sage Scrub easement area. Within the willow scrub Zone 2 BMZ maintenance area, because no live and/or native material is removed, impacts are not considered a significant biological impact. As a result, no compensatory mitigation is required for Zone 2 impacts within the Willow Scrub habitat (refer to Project's Biological Report for more information on mitigation).

3. Lots 1 through 8) will be required to be maintained as an extended irrigated Zone 1 FMZ landscape with drought-tolerant, fire resistive plants. The Zone 1 FMZ will extend up to the drainage channel adjacent to Lots 1 through 6 and up to the Diegan Sage Scrub easement areas adjacent to Lots 7 and 8. The extended irrigated Zone 1 landscape will include no undesirable, highly flammable plant species shall be planted, that will be routinely maintained and watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would prevent ignition by embers from a wildfire;

4. Because of property boundary constraints, Lots 1 through 3 are unable to achieve a full 100 feet of FMZ onsite. To mitigate for the reduced FMZ, a 6-foot high non-combustible CMU fire wall constructed along the rear lot line behind Lots 1 through 3 will be constructed. The fire wall will be installed to function as heat-deflecting walls.

5. In addition to the construction of a 6-foot-high CMU wall, the Project proposes to provide exterior glazing in windows (and sliding glass doors, garage doors, or decorative or leaded glass doors) facing the ~~open space~~CE and naturally vegetated areas to be dual pane with both panes tempered glass to mitigate for the reduced FMZ within Lots 1 through 3. Dual pane, one pane tempered glass has been shown during testing and in after fire assessments to significantly decrease the risk of breakage and ember entry into structures. Therefore, requiring code-exceeding dual pane, both panes tempered is anticipated to be an important safety measure that provides enhanced structure protection and provides mitigation for reduced fuel modification zones and limited setbacks from adjacent structures. The window upgrade also exceeds the requirements of Chapter 7A of the CBC and providing additional protection for the structure's most vulnerable, exterior side (CODE EXCEEDING MITIGATION MEASURE);

6. wildland exposed sides of the structures on Lots 1 through 3 shall also include 5/8-inch Type X fire rated gypsum sheathing applied behind the exterior covering or cladding (stucco or exterior siding) on the exterior side of the framing, from the foundation to the roof for a facade facing the ~~open space~~CE and naturally vegetated areas. 5/8-inch Type X fire rated gypsum sheathing is required to be manufactured in accordance with established ASTM

standards defining type X wallboard sheathing as that which provides not less than one-hour fire resistance when tested in specified building assemblies and has been tested and certified as acceptable for use in a one-hour fire rated system. CertainTeed Type X Gypsum Board has a Flame Spread rating of 15 and Smoke Developed rating of 0, in accordance with ASTM E 84, (UL 723, UBC 8-1, NFPA 255, CAN/ULC-S102); UL classified for Fire Resistance (ANSL/UL 263; ASTM E119) and listed under UL File No. CKNX.R3660 (Certainteed, 2021). Please refer to the specification in Attachment 5_for a more detailed description of CertainTeed 5/8-inch Type X Fire Rated Gypsum sheathing (or similar product) CODE EXCEEDING MITIGATION MEASURE;

7. Areas requiring ventilation to the outside environment will require ember-resistant vents such as Brandguard, Vulcan, or O'Hagin brands. These vents exceed the code requirement of a minimum 1/16-inch not to exceed 1/8-inch openings. All vents used for this project will be approved by SFD. Please refer to the specification in Attachments 6 and 7 for a more detailed description of Brandguard, Vulcan, and O'Hagin ventilation brands. These use of these ember resistant vents are a CODE EXCEEDING MITIGATION MEASURE;

8. Non-combustible fencing shall be required to be installed for areas within Fire Hazard Severity Zones and/or Wildland Urban Interface Areas, including within five feet of every structure and along the side yards of each residence (Santee Municipal Code, Chapter 11.18.020, Section 4908.1). Dudek agrees with the requirements for avoiding wood/combustible fences on perimeter lots that abut unmaintained ~~open space~~CE areas. However, the use of Kroy Vinyl Fencing (see Attachment 8 – Kroy Vinyl Fencing Fire Rating) or fire retardant treated lumber, such as Hoover's lumber product, are considered acceptable fencing materials to use for the proposed interior 6-foot high fencing (see Attachment 9 – OSFM Approved Hoover X);

9. No eave overhangs. By requiring no eaves instead of the code required boxed eaves, the structure eliminates the ability of capturing hot air and embers that may circulate under a boxed eave and instead allows the hot air to either bounce off the side of the structure or fly over the structure entirely (CODE EXCEEDING MITIGATION MEASURE);

10. Annual FMZ Inspections. Yearly fuel modification maintenance shall be required by the Project's HOA and each individual property owner. The communities HOA as well as individual property owners, shall be responsible for obtaining an FMZ inspection and report from a qualified SFD-approved 3rd party inspector in May of each year certifying that vegetation management activities throughout the Project site and within each individual lot have been performed pursuant to this Fire letter. This includes verifying that wood bark and other combustible mulches shall not be used within the first 5 feet from the homes. See details regarding the fuel modification zone vegetation maintenance program below (CODE EXCEEDING MITIGATION MEASURE).

d) 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?

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

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).

Slope failures, mudflows, and landslides are common in areas where steep hillsides and embankments are present and such conditions would be exacerbated in a post-fire environment where vegetative cover has been removed. However, as presented in Section 4.6, Geology and Soils, the proposed project site is not at risk of landslide or mudflow. Given the characteristics of the project site, post-fire conditions are not expected to increase risks associated with slope failures, mudflows, or landslides.

Increases in surface runoff and erosion are also possible in a post-fire environment where surface vegetation has been removed and steep slopes can increase runoff flow velocity. As presented in Section 4.9, Hydrology and Water Quality,

the incorporation of stormwater treatment basins, as well as the relatively flat (graded pads) nature of the project site, would greatly reduce the potential for off-site erosion as compared to the project site's current condition. CAL FIRE mapping data also indicates no post-fire erosion threat potential for the project site or the immediate surrounding area (CAL FIRE 2009). Finally, the irrigated and maintained landscaping is not be expected to be burned (removed) entirely should a fire occur on the project site, unlike post-fire conditions in native vegetation where complete removal is common. Considering these project site features and characteristics, post-fire conditions are not expected to increase risks associated with runoff and erosion.

Considering the project site's terrain and proximity of hillsides, and with implementation of project grading, construction and erosion control BMPs, potential impacts associated with runoff, post-fire slope instability, or drainage changes are considered less than significant.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

Potentially significant impacts to sensitive habitats were identified that would require mitigation as detailed in Section IV. a) and d). In addition, potentially significant impacts to unknown buried cultural resources and human remains were identified that would be mitigated through implementation of archaeological monitoring as discussed in Section V. b) and d).

However, no significant and unavoidable impacts were identified that would have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. Project impacts would be less than significant with mitigation.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current project, and the effects of probable future projects.)

☐ Potentially Significant Impact ☐ Less than Significant with Mitigation Incorporated

☒ Less Than Significant Impact ☐ No Impact

Discussion:

Per the instructions for evaluating environmental impacts in this Initial Study, the potential for adverse cumulative effects were considered in the response to each question in Sections I. through XVII. of this form. In addition to evaluation of potential project-specific effects, this evaluation considered the project's potential for incremental effects that may be cumulatively considerable when viewed in connection with the effects of past, current, or probable future projects in the area.

Regarding cumulative aesthetics impacts, the scope for cumulative analysis of impacts related to aesthetics and views is the viewshed surrounding the project site. While development of the cumulative project sites would result in a cumulative change to the visual character of the immediate area, this change would not be considered adverse considering the proposed amenities and architectural interest that would be provided by the project. Cumulative projects would not be within the same visual environmental as the project, thus no cumulatively significant aesthetic impact would occur.

Regarding potential cumulative impacts from air quality, GHG emissions, and noise construction impacts, applicable regulatory requirements addressing noise levels, and air emissions during construction would ensure a cumulative

impact would not occur. No cumulative operational noise impact would occur due to required compliance with property line noise limits.

There are no anticipated cumulative impacts to biological resources, because the project would fully mitigate its impacts to biological resources and none of the cumulative projects would have significant unavoidable impacts to biological resources. A majority of the cumulative projects are located in urban areas on disturbed lands that would not have the potential to contribute to a cumulative impact.

Regarding historic, archaeological, paleontological, and tribal cultural resources, a cumulative impact has not been identified for these issue areas because significant impacts to these resources associated with other cumulative projects would either not occur or would be mitigated as part of a discretionary permit process.

Regarding geology and soils impacts, these impacts are limited to localized impacts on each individual development. Because there are no potentially significant impacts identified for this project, the project does not contribute to any cumulative impacts.

No cumulative impact related to hydrology and water quality would occur, because individual developments would be required to prepare and comply with drainage studies and storm water management plans that would ensure significant drainage and storm water impacts would not occur and cumulative impacts would be avoided.

Because the project traffic generation falls below analyzed traffic volumes, no additional cumulative impacts would occur as a result of the project. No significant cumulative impact has been identified. Thus, cumulative impacts would be less than significant.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

☐ Potentially Significant Impact ☒ Less than Significant with Mitigation Incorporated

☐ Less Than Significant Impact ☐ No Impact

Discussion:

The project as designed adequately addresses public health and safety objectives identified in the General Plan and Municipal Code. With the proposed mitigation, no significant impact was identified that could result in an adverse impact to human beings. Therefore, the project would result in a less than significant effect with mitigation incorporated on human beings either directly or indirectly.

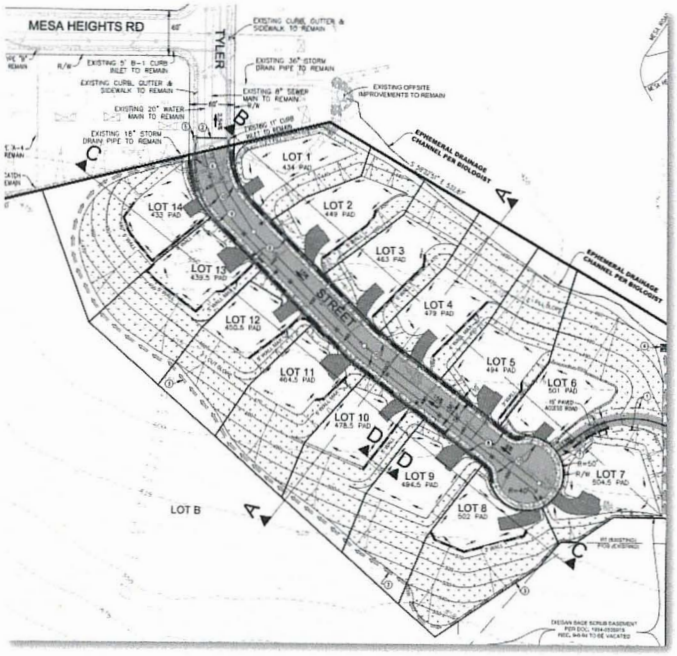
Authority: Public Resources Code 21083, 21094.5.5
Reference: Public Resources Code Sections 21094.5 and 21094.5.5

APPENDIX A

Air Quality/Greenhouse Gas Report

Tyler Street Project

City of Santee



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AIR ANALYSES

August 2020

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Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
AAQS	ambient air quality standard
AB	Assembly Bill
ADAM	CARB's Aerometric Data Analysis and Management System
AMSL	above mean sea level
AQIA	Air Quality Impact Assessment
AQR	Air Quality Report
AR4	4th Assessment Report
BAU	business as usual
CAAQS	California Ambient Air Quality Standards
CalEEMod™	California Emissions Estimator Model
CalGreen Code	California Green Building Standards Code
CAFE	Corporate Average Fuel Economy
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Control Board
CAT	Climate Action Team
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbon
CH_4	methane
City	City of Santee
Checklist	Santee's CEQA Project Consistency Checklist
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DPM	diesel particulate matter
EISA	Energy Independence and Security Act of 2007
EPA	United States Environmental Protection Agency
ft^2	square foot
FCAA	Federal Clean Air Act
GHG	greenhouse gas
GP	General Plan
GWP	global warming potential
HFC	hydrofluorocarbon
IPCC	International Panel on Climate Change
M	million
$MtCO_2e$	million tonnes of carbon dioxide equivalents

Acronyms and Abbreviations

N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Transportation Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	respirable particulate matter of 10 micrometers or less in size
$PM_{2.5}$	fine particulate matter of 2.5 micrometers or less in size
ppd	pounds per day
ppm	parts per million
RAQS	San Diego County Regional Air Quality Strategy
ROG	reactive organic gases
SANDAG	San Diego Association of Governments
SAR	Second Assessment Report
SB	Senate Bill
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SLT	screening level thresholds
SSP	Sustainable Santee Plan
SO_2	sulfur dioxide
t	abbreviation for tonne (or metric ton)
TAC	toxic air contaminants
tCO_2e	tonne of carbon dioxide equivalents
UNFCCC	United Nations Framework Convention on Climate Change
VOC	volatile organic compounds
WRI	World Resources Institute

SECTION 1.0 – INTRODUCTION

1.1. Report Purpose

The purpose of this Air Quality/Greenhouse Gas Report (AQR or Report) is to analyze the potential air quality and climate change impacts that could occur with the construction and operation of the Tyler Street Project (Project), in the City of Santee, California. This assessment was conducted within the context of the California Environmental Quality Act (CEQA), California Public Resources Code Sections 21000 et seq.).

1.2. Project Location

The Project site consists of currently a vacant lot located in the City of Santee in San Diego County (see Figure 1). More specifically, the Project site is located immediately south of the intersection of Mesa Heights Road and Tyler Street (see Figure 2).

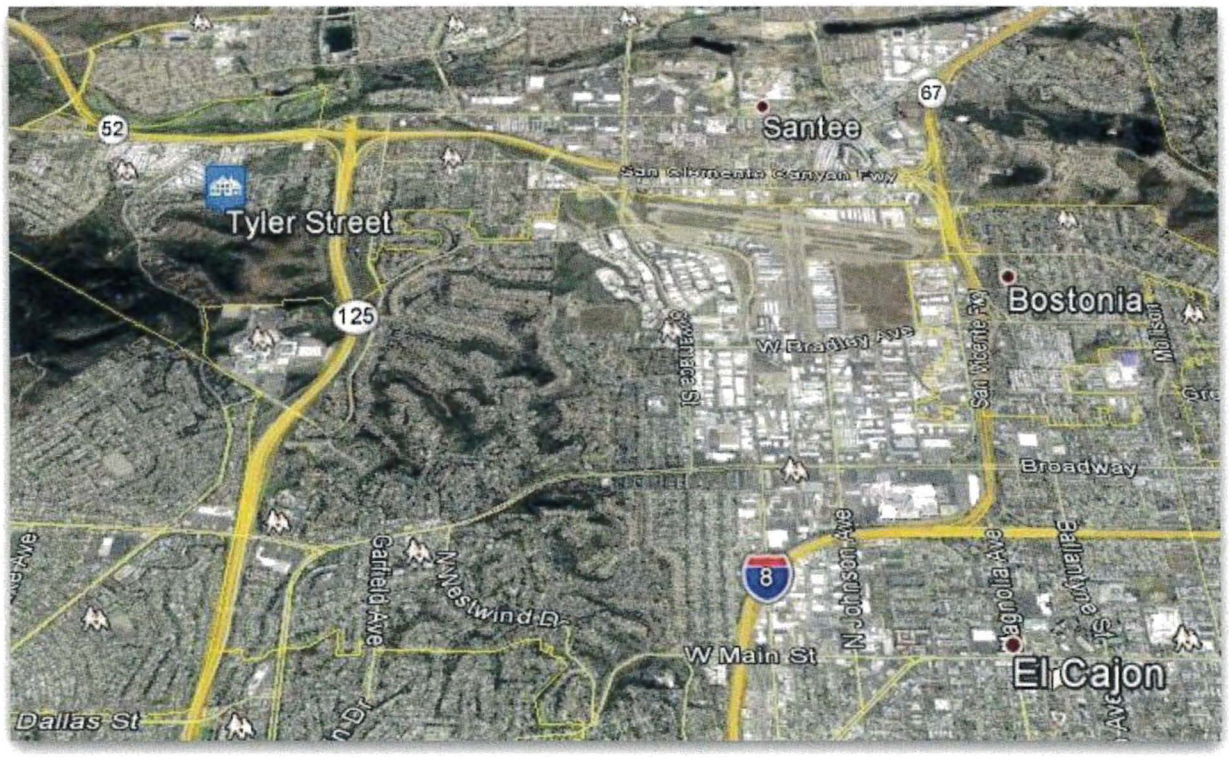

Figure 1 – Vicinity

1.3. Project Description

The Project would consist of producing the building pads for 14 single family homes on lots over 15,000 square foot (ft^2) each on less than 8 gross acres of currently vacant land, which is zoned Low Density Residential. All structure building would be the responsibility of the new owners. This Report will analyze the building construction and add operational emissions for informational purposes only.

Figure 2 - Location

SECTION 2.0 – BACKGROUND CONDITIONS

Air quality is determined primarily by the type and quantity of contaminants emitted into the atmosphere, the size and topography of the air basin, and its meteorological conditions. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollution emissions and air quality.

2.1. Climatology / Meteorology

Meteorology is the study of weather and climate. Weather refers to the state of the atmosphere at a given time and place regarding temperature, air pressure, humidity, cloudiness, and precipitation. The term "weather" refers to conditions over short periods; however, conditions over long periods, generally at least 30 to 50 years, are referred to as climate. Climate, in a narrow sense, is usually defined as the "average weather," or more rigorously as the statistical description in terms of the mean and variability of relevant quantities over a period ranging from months to thousands or millions of years. These quantities are most commonly surface variables such as temperature, precipitation, and wind.

General climatic conditions in San Diego County is characterized by warm, dry summers and mild winters. One of the main determinants of the climatology is a semi-permanent high-pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high-pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure storms are brought into the region, causing widespread precipitation.

2.1.1 Temperature and Precipitation

The nearest National Weather Service Cooperative Observer Program weather station to the project is the station in El Cajon, located approximately 2.3 miles southeast of the Project. At the El Cajon [1]Station, average recorded rainfall during the Period of Record (1979 to 2016) measured 12.04 inches, with over 91 percent of precipitation occurring between November and April and 60 percent in just January through March. Monthly average maximum temperatures at this station vary annually by only 19.6 degrees Fahrenheit (°F); 88.9 °F at the hottest to 69.3 °F at the coldest and monthly average minimum temperatures only vary by 22.9 °F annually; i.e. from 41.3 °F to 64.2 °F.

2.1.2 Inversions

A common atmospheric condition known as a temperature inversion affects air quality in the San Diego area. During an inversion, air temperatures get warmer rather than cooler with increasing height. Subsidence inversions occur during the warmer months (May through October) as descending air associated with the Pacific high-pressure cell encounters cool marine air. The boundary between the layers of air represents a temperature inversion, which is located approximately 2,000 feet above mean sea level (AMSL) during the months of May through October and approximately 3,000 feet AMSL during the winter months (November through April). Inversion layers are important determinants of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality.

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[1] Western U.S. Climate Historical Summaries. Western Regional Climate Center. http://www.wrcc.dri.edu/Climsum.html. Accessed August 2020.

Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County. This often produces high ozone concentrations, as measured at air pollutant monitoring stations within the County. The transport of air pollutants from Los Angeles to San Diego has also occurred within the stable layer of the elevated subsidence inversion, where high levels of ozone are transported.

SECTION 3.0 – REGULATORY ENVIRONMENT

Air pollutants are regulated at the national, State, and air basin level; each agency has a different degree of control. The United States Environmental Protection Agency (EPA) regulates at the national level; the California Air Resources Board (CARB) regulates at the State level; and the San Diego Air Pollution Control District (SDAPCD) regulates at the air basin level in the Project area.

3.1. Regulatory Agencies

3.1.1 Environmental Protection Agency (EPA)

EPA is the federal agency responsible for overseeing state air programs as they relate to the Federal Clean Air Act (FCAA), approving State Implementation Plans (SIPs), establishing National Ambient Air Quality Standards (NAAQS) and setting emission standards for mobile sources under federal jurisdiction. EPA has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

3.1.2 California Air Resources Board (CARB)

CARB is the state agency responsible for establishing California Ambient Air Quality Standards (CAAQS), adopting and enforcing emission standards for various sources including mobile sources (except where federal law preempts their authority), fuels, consumer products, and toxic air contaminants. CARB is also responsible for providing technical support to California's 35 local air districts, which are organized at the county or regional level, overseeing local air district compliance with State and federal law, approving local air plans and submitting the SIP to the EPA. CARB also regulates mobile emission sources in California, such as construction equipment, trucks, and automobiles.

For the purposes of managing air quality in California, the California Health & Safety Codes Section 39606(a)(2) gave the CARB the responsibility to "based upon similar meteorological and geographic conditions and consideration for political boundary lines whenever practicable, divide the State into air basins to fulfill the purposes of this division". San Diego County is located within the San Diego Air Basin (SDAB or Basin).

3.1.3 San Diego Air Pollution Control District (SDAPCD)

The SDAPCD shares responsibility with CARB for ensuring that all State and federal ambient air quality standards are achieved and maintained within the County. State law assigns to local air pollution control districts the primary responsibility for control of air pollution from stationary sources, while reserving an oversight role for CARB. Generally, the air pollution control districts must meet minimum State and EPA program requirements. The air pollution control district is also responsible for the inspection of stationary sources, monitoring of ambient air quality, and planning activities such as modeling and maintenance of the emission inventory. Air pollution control districts in State nonattainment areas are also responsible for developing and implementing transportation control measures necessary to achieve the state ambient air quality.

3.2. Criteria Air Pollutants

As required by the FCAA, the EPA has identified criteria pollutants and established NAAQS to protect public health and welfare. NAAQS have been established for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended particulate matter (PM), and lead. Suspended PM has standards for both PM with an

aerodynamic diameter of 10 micrometers or less (respirable PM, or PM_{10}) and PM with an aerodynamic diameter of 2.5 micrometers or less (fine PM, or $PM_{2.5}$). The CARB has established separate standards for the State, i.e. the CAAQS. CARB established CAAQS for all the federal pollutants and sulfates, hydrogen sulfide, and visibility-reducing particles.

Table 1 – National and State Ambient Air Quality Standards[2]

Air Pollutant	Averaging Time	California Standard	National Standard
Ozone	1 hour 8 hour	0.09 ppm 0.070 ppm	— 0.070 ppm
Respirable particulate matter (PM_{10})	24 hour Mean	50 μg/m³ 20 μg/m³	150 μg/m³ —
Fine particulate matter ($PM_{2.5}$)	24 hour Mean	— 12 μg/m³	35 μg/m³ 12.0 μg/m³
Carbon monoxide (CO)	1 hour 8 hour	20 ppm 9.0 ppm	35 ppm 9 ppm
Nitrogen dioxide (NO_2)	1 hour Mean	0.18 ppm 0.030 ppm	100 ppb 0.053 ppm
Sulfur dioxide (SO_2)	1 hour 24 hour	0.25 ppm 0.04 ppm	75 ppb —
Lead	30-day Rolling 3-month	1.5 μg/m³ —	— 0.15 μg/m³
Sulfates	24 hour	25 μg/m³	**No Federal Standard**
Hydrogen sulfide	1 hour	0.03 ppm	
Vinyl chloride	24 hour	0.01 ppm	
Visibility-reducing particles	8 hour	Extinction coefficient of 0.23 per kilometer, visibility of ten miles or more due to particles when relative humidity is less than 70%.	

Abbreviations:

ppm = parts per million ppb = parts per billion 30-day = 30-day average
μg/m³ = micrograms per cubic meter Mean = Annual Arithmetic Mean

For some of the pollutants, the identified air quality standards are expressed in more than one averaging time to address the typical exposures found in the environment. For example, CO is expressed as a one-hour averaging time

2 Ambient Air Quality Standards. California Air Resources Board. https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed August 2020.

and an eight-hour averaging time. Regulations have set NAAQS and CAAQS limits in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). The standards are presented in **Table 1** and the following text provides descriptions and health effects of each.

3.2.1 Ozone

Ozone is not emitted directly to the atmosphere but is formed by photochemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight. The long, hot, humid days of summer are particularly contributing to ozone formation; thus, ozone levels are of concern primarily during the months of May through September.

- **Reactive organic gases (ROG)** are defined as any compound of carbon, excluding CO, carbon dioxide (CO_2), carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participate in atmospheric photochemical reactions. It should be noted that there are no State or national ambient air quality standard for ROG because ROGs are not classified as criteria pollutants. They are regulated, however, because a reduction in ROG emissions reduces certain chemical reactions that contribute to the formulation of ozone. ROGs are also transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
- **Nitrogen oxides (NO_X)** serve as integral participants in the process of photochemical smog production. The two major forms of NO_X are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_X is an ozone precursor. A precursor is a directly emitted air contaminant that, when released into the atmosphere, forms, causes to be formed, or contributes to the formation of a secondary air contaminant for which an ambient air quality standard (AAQS) has been adopted, or whose presence in the atmosphere will contribute to the violation of one or more AAQSs. When NO_X and ROG are released in the atmosphere, they can chemically react with one another in the presence of sunlight to form ozone.

Ozone is a strong chemical oxidant that adversely affects human health through effects on respiratory function. Ozone can also damage forests and crops. Ozone is not emitted directly by industrial sources or motor vehicles but instead, is formed in the lower atmosphere, the troposphere. Ozone is formed by a complex series of chemical reactions involving NO_X, the result of combustion processes and evaporative ROGs such as industrial solvents, toluene, xylene, and hexane as well as the various hydrocarbons that are evaporated from the gasoline used by motor vehicles or emitted through the tailpipe following combustion. Additionally, ROGs are emitted by natural sources such as trees and crops. Ozone formation is promoted by strong sunlight, warm temperatures, and winds. High concentrations tend to be a problem in the San Diego County only during the hot summer months when these conditions frequently occur.

3.2.2 Particulate matter (PM)

PM is a general term used to describe a complex group of airborne solid, liquid, or semi-volatile materials of various size and composition. Primary PM is emitted directly into the atmosphere from both human activities (including agricultural operations, industrial processes, construction and demolition activities, and entrainment of road dust into the air) and non-anthropogenic activities (such as windblown dust and ash resulting from forest fires). Secondary PM is formed in the atmosphere from predominantly gaseous combustion by-product precursors, such as sulfur oxides and NO_X, and ROGs. The overwhelming majority of airborne PM in San Diego County is primary PM. The major source of primary PM is fugitive windblown dust, with other contributions from entrained road dust, farming,

and construction activities.

Particle size is a critical characteristic of PM that primarily determines the location of PM deposition along the respiratory system (and associated health effects) as well as the degradation of visibility through light scattering. In the United States, federal and state agencies have established two types of PM air quality standards as shown in **Table 1**. PM_{10} corresponds to the fraction of PM no greater than 10 microns in aerodynamic diameter and is commonly called respirable particulate matter, while $PM_{2.5}$ refers to the subset of PM_{10} of aerodynamic diameter smaller than 2.5 microns, which is commonly called fine particulate matter.

PM air pollution has undesirable and detrimental environmental effects. PM affects vegetation, both directly (e.g. deposition of nitrates and sulfates may cause direct foliar damage) and indirectly (e.g. coating of plants upon gravitational settling reduces light absorption). PM also accumulates to form regional haze, which reduces visibility due to scattering of light. Agencies concerned with haze include the National Park Service, the U.S. Forest Service, the Western Regional Air Partnership, and the Western States Air Resources Council.

PM_{10} is respirable, with fine and ultrafine particles reaching the alveoli deep in the lungs, and larger particles depositing principally in the nose and throat area. PM_{10} deposition in the lungs results in irritation that triggers a range of inflammation responses, such as mucus secretion and bronchoconstriction, and exacerbates pulmonary dysfunctions, such as asthma, emphysema, and chronic bronchitis. Sufficiently small particles may penetrate into the bloodstream and impact functions such as blood coagulation, cardiac autonomic control, and mobilization of inflammatory cells from the bone marrow. Individuals susceptible to higher health risks from exposure to PM_{10} airborne pollution include children, the elderly, smokers, and people of all ages with low pulmonary/ cardiovascular function. For these individuals, adverse health effects of PM_{10} pollution include coughing, wheezing, shortness of breath, phlegm, bronchitis, and aggravation of lung or heart disease, leading for example to increased risks of hospitalization and mortality from asthma attacks and heart attacks.

3.2.3 Carbon Monoxide (CO)

CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the Project location, automobile exhaust accounts for most CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

3.2.4 Sulfur Dioxide (SO_2)

SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

3.2.5 Lead

Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline, the manufacturing of batteries, paint, ink, ceramics, and ammunition and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance including intelligence quotient performance, psychomotor performance, reaction time, and growth.

3.3. Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Assembly Bill (AB) 1807[3] sets forth a procedure for the identification and control of TAC in California defines a TAC as an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. Almost 200 compounds have been designated as TACs in California. The ten TACs posing the greatest known health risk in California, based primarily on ambient air quality data, are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, formaldehyde, methylene chloride, para-dichlorobenzene, perchloroethylene, and diesel particulate matter (DPM).

TACs do not have ambient air quality standards. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure.

The top three contributors of the potential cancer risk come primarily from motor vehicles - DPM, 1,3 butadiene, and benzene. Cleaner motor vehicles and fuels are reducing the risks from these priority toxic air pollutants. The remaining toxic air pollutants, such as hexavalent chromium and perchloroethylene, while not appearing to contribute as much to the overall risks, can present high risks to people living close to a source. CARB has control measures that are either already on the books, in development, or under evaluation for most of the remaining top ten, where actions are suitable through our motor vehicle, consumer products, or industrial source programs. Of these top ten, carbon tetrachloride is unique in that most of the health risk from this toxic air pollutant is not attributable to specific sources, but rather to background concentrations.

3.4. Sensitive Receptors

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These people include children, the elderly, and persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather are defined as sensitive receptors by the SDAPCD.

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[3] Enacted in September 1983. Health and Safety Code section 39650 et seq., Food and Agriculture Code Section 14021 et seq.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as most of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

To the north and east of the Project are residential districts and to the south and west of the Project are open spaces. Two educational facilities are within a mile of the Project site. The Chet F. Harritt Elementary School is located at 8120 Arlette Street, which is approximately 0.4 miles west-northwest of the Project and the Prospect Avenue Elementary School is located at 9303 Prospect Avenue, which is approximately 0.8 miles east of the Project.

3.5. Greenhouse Gases

Constituent gases that trap heat in the Earth's atmosphere are called greenhouse gases (GHGs), analogous to the way a greenhouse retains heat. GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which would otherwise have escaped into space. Prominent GHGs contributing to this process include CO_2, methane (CH_4), nitrous oxide (N_2O), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Without the natural heat-trapping effect of GHG, the earth's surface would be about 34 °F cooler[4]. This is a natural phenomenon, known as the "Greenhouse Effect," and is responsible for maintaining a habitable climate. However, anthropogenic emissions of these GHGs in excess of natural ambient concentrations are responsible for the enhancement of the "Greenhouse Effect" and have led to a trend of unnatural warming of the Earth's natural climate known as global warming or climate change, or more accurately Global Climate Disruption. Emissions of these gases that induce global climate disruption are attributable to human activities associated with industrial/manufacturing/ commercial, utilities, transportation, residential, and agricultural sectors.

The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere. Individual GHG compounds have varying GWP and atmospheric lifetimes. The reference gas for the GWP is CO_2; CO_2 has a GWP of one. The calculation of the CO_2 equivalent (CO_2e) is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. CH_4's warming potential of 25 indicates that CH_4 has a 25 times greater warming affect than CO_2 on a molecular basis. The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that period on a molecular basis. The period usually used for GWPs is 100 years. GWPs for the three GHGs produced by the Project are presented in **Table 2**. A CO_2e is the mass emissions of an individual GHG multiplied by its GWP. GHGs are often presented in units called tonnes (t) (i.e. metric tons) of CO_2e (tCO_2e).

3.5.1 Carbon Dioxide (CO_2)

CO_2 is a colorless, odorless gas consisting of molecules made up of two oxygen atoms and one carbon atom. CO_2 is produced when an organic carbon compound (such as wood) or fossilized organic matter, (such as coal, oil, or

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4 *Climate Action Team Report to Governor Schwarzenegger and the California Legislature.* California Environmental Protection Agency, Climate Action Team. March 2006.

natural gas) is burned in the presence of oxygen. CO_2 is removed from the atmosphere by CO_2 "sinks", such as absorption by seawater and photosynthesis by ocean-dwelling plankton and land plants, including forests and grasslands. However, seawater is also a source of CO_2 to the atmosphere, along with land plants, animals, and soils, when CO_2 is released during respiration. Whereas the natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean, humankind has altered the natural carbon cycle by the increased burning of coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s, each of these activities has increased in scale and distribution. Prior to the industrial revolution, global concentrations CO_2 were stable at a range of 275 to 285 parts per million (ppm)[5]. The Bulletin of the American Meteorological Society[6] indicates that global average concentration of CO_2 was 405.0 ppm in 2017, the highest in the modern atmospheric measurement record and in ice core records dating back as far as 800,000 years. In addition, the monthly mean of CO_2 globally was measured at 414.38 ppm in July 2020[7], up from 411.74 ppm the previous year.

Table 2 – Global Warming Potentials[8]

Pollutant	GWP for 100-year time horizon	
	Second assessment report (SAR)[9]	4th assessment report (AR4)[10]
Carbon dioxide (CO_2)	1	1
Methane (CH_4)	21	25
Nitrous oxide (N_2O)	310	298

Note: Current protocol is to use the AR4 values, however, the SAR values are also provided since they are the values used by many inventories and public documents.

3.5.2 Methane (CH_4)

CH_4 is a colorless, odorless non-toxic gas consisting of molecules made up of four hydrogen atoms and one carbon atom. CH_4 is combustible, and it is the main constituent of natural gas—a fossil fuel. CH_4 is also released when organic matter decomposes in low oxygen environments. Natural sources include wetlands, swamps and marshes,

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5 *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007*. Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

6 *State of the Climate in 2017.* Special Supplement to the Bulletin of the American Meteorological Society. Blunden, J., D.S. Arndt, and Hartfield, G. Eds., Vol. 99, No. 8, S1–S275. August 2018.

7 *Trends in Atmospheric Carbon Dioxide*. National Oceanic & Atmospheric Administration/Earth Systems Research Laboratory. (www.esrl.noaa.gov/gmd/ccgg/trends/) Accessed August 2020.

8 Global Warming Potentials. Greenhouse Gas Protocol. World Resources Institute and World Business Council on Sustainable Development. http://www.ghgprotocol.org/files/ghgp/tools/Global-Warming-Potential-Values.pdf. Accessed May 2015.

9 Second Assessment Report. Climate Change 1995: WG I - The Science of Climate Change. Intergovernmental Panel on Climate Change. 1996

10 Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. 2007

termites, and oceans. Human sources include the mining of fossil fuels and transportation and use of natural gas, digestive processes in ruminant animals such as cattle, rice paddies, and the buried waste in landfills. Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH_4.

3.5.3 Nitrous Oxide (N_2O)

N_2O is a colorless, non-flammable gas with a sweetish odor, commonly known as "laughing gas", and sometimes used as an anesthetic. N_2O is naturally produced in the oceans and in rainforests. Man-made sources of N_2O include the use of fertilizers in agriculture, nylon and nitric acid production, cars with catalytic converters, and the burning of organic matter. Concentrations of N_2O also began to rise at the beginning of the industrial revolution.

3.5.4 Chlorofluorocarbon (CFC)

CFCs are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically un-reactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Because of the discovery that they can destroy stratospheric ozone, an ongoing global effort to halt their production was undertaken and has been extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

3.5.5 Hydrofluorocarbon (HFC)

HFCs are synthesized chemicals that are used as a substitute for CFCs. Out of all the GHGs, HFCs are one of three groups with the highest GWP. HFCs are synthesized for applications such as automobile air conditioners and refrigerants.

3.5.6 Perfluorocarbon (PFC)

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface can destroy the compounds. Because of this, PFCs have exceptionally long lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

3.5.7 Sulfur Hexafluoride (SF_6)

SF_6 is an extremely potent GHG and very persistent, with an atmospheric lifetime of more than a thousand years. Thus, a relatively small amount of SF_6 can have a significant long-term impact on global climate change. SF_6 is human-made, and the primary user of SF_6 is the electric power industry. Because of its inertness and dielectric properties, it is the industry's preferred gas for electrical insulation, current interruption, and arc quenching (to prevent fires) in the transmission and distribution of electricity. SF_6 is used extensively in high voltage circuit breakers and switchgear, and in the magnesium metal casting industry.

3.6. Legislative Framework

This section contains a discussion of the federal, State, and local air quality regulations, plans, and policies. Federal, State, and local authorities have adopted rules and regulations that govern the emissions of air pollutants from any facility. The local and federal authorities each have specific criteria for the evaluation of a source and its emissions and the authority to issue permit conditions and specify recordkeeping and reporting requirements that must be met

in order to operate a source of air pollutants. This section focuses on current air quality regulations and their impact on the Project.

3.6.1 Federal Regulations and Standards

The FCAA was enacted in 1970 and last amended in 1990 (42 USC 7401, et seq.) with the purpose of controlling air pollution and providing a framework for national, state, and local air pollution control efforts. Basic components of the FCAA and its amendments include NAAQS for major air pollutants, hazardous air pollutants standards, SIP requirements, motor vehicle emissions standards, and enforcement provisions. The FCAA was enacted for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity.

3.6.2 State Regulations and Standards

CARB is responsible for responding to the FCAA, regulating emissions from motor vehicles and consumer products, and implementing the CCAA. The CCAA outlines a program to attain the CAAQSs for ozone, sulfur dioxide, and CO by the earliest practical date. Since CAAQSs are more stringent than NAAQSs in most cases, attainment of the CAAQS will require more emissions reductions than what would be required to show attainment of the NAAQS. The CCAA requires attainment of CAAQS by the earliest practicable date. The state standards are generally more stringent than the corresponding federal standards. Attainment plans are required for air basins in violation of the State ozone, PM_{10}, CO, SO_2, or NO_2 standards. Responsibility for achieving State standards is placed on CARB and local air pollution control districts. District plans for nonattainment areas must be designed to achieve a 5% annual reduction in emissions. Preparation of and adherence to attainment plans are the responsibility of the local air pollution control districts or air quality management districts.

3.6.3 Local Regulations and Standards

The SDAPCD also has the authority to adopt and enforce regulations dealing with controls for specific types of sources, emissions of hazardous air pollutants, and New Source Review. The SDAPCD Rules and Regulations are part of the SIP and are separately enforceable by the EPA. The following SDAPCD rules potentially apply to the proposed project:

- **Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or tend to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.
- **Rule 55: Fugitive Dust Control.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site.
- **Rule 67.0.1: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce volatile organic compounds[11] (VOC) emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- **Rule 67.7: Cutback and Emulsified Asphalts.** Requires manufacturers, distributors, and end users of cutback

[11] Emissions of organic gases are typically reported only as aggregate organics, either as VOC or as ROG. These terms are meant to reflect what specific compounds have been included or excluded from the aggregate estimate. Although EPA defines VOC to exclude both methane and ethane, and CARB defines ROG to exclude only methane, in practice it is assumed that VOC and ROG are essentially synonymous.

and emulsified asphalt materials for the paving, construction, or maintenance of parking lots, driveways, streets, and highways to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC evaporation content.

3.7. Attainment Status

EPA has identified nonattainment and attainment areas for each NAAQS. Under amendments to the FCAA, EPA has designated air basins or portions thereof as attainment, nonattainment, or unclassifiable, based on whether the national standards have been achieved. The State designates air basins or portions thereof for all CAAQS. The State designation criteria specify four categories: nonattainment, nonattainment-transitional, attainment, and unclassified.

In addition, the FCAA uses a classification system to design clean-up requirements appropriate for the severity of the pollution and set realistic deadlines for reaching clean-up goals. If an air basin is not in federal attainment for a pollutant, the Basin is classified as a marginal, moderate, serious, severe, or extreme nonattainment area, based on the estimated time it would take to reach attainment. Nonattainment areas must take steps towards attainment by a specific timeline. **Air Quality** Management Plans

3.7.1 Regional Air Quality Strategy (RAQS)

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The San Diego County Regional Air Quality Strategy (RAQS) was initially adopted in 1991 and is updated on a triennial basis, most recently in 2016 (2016 RAQS). The 2016 RAQS outlines the SDAPCD's plans and control measures designed to attain the State air quality standards for ozone. The SDAPCD has also developed the air basin's input to the SIP, which is required under the FCAA for areas that are out of attainment of air quality standards.

Table 3 shows the federal and State attainment designations for the Basin.

3.7.2 SDAB Attainment Designations

The portion of the SDAB where the Project is located is a marginal nonattainment area for the 2008 8-hour NAAQS for ozone. The SDAB is attainment/maintenance for CO; attainment for SO_2; unclassifiable for PM_{10}; and unclassifiable/attainment for all other criteria pollutants under the NAAQS.

The SDAB is currently designated nonattainment for ozone and particulate matter, PM_{10} and $PM_{2.5}$, under the CAAQS. It is designated attainment for the CAAQS for CO, NO_2, SO_2, lead, and sulfates (see **Air Quality** Management Plans

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Table 3).

3.8. Air Quality Management Plans

3.8.1 Regional Air Quality Strategy (RAQS)

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Table 3 – Designations/Classifications for the SDAB[13] [14]

Pollutant	State Designation	Federal Designation (Classification)
Ozone	Nonattainment	Nonattainment (Moderate)*
Respirable PM (PM_{10})	Nonattainment	Unclassifiable
Fine PM ($PM_{2.5}$)	Nonattainment	Attainment
Carbon Monoxide (CO)	Attainment	Attainment (Maintenance)
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	**No Federal Standard**
Hydrogen Sulfide	Unclassified	
Visibility reducing Particles	Unclassified	

- *San Diego County was initially designated a Marginal nonattainment area for the 2008 eight-hour ozone NAAQS, effective July 20, 2012. As marginal areas were required to attain the 2008 eight-hour ozone NAAQS by July 20, 2015 and the region did not meet this attainment deadline, on June 3, 2016, the EPA reclassified San Diego County as a Moderate nonattainment area[15].*

The 2016 RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source

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12 *2016 Revision of the Regional Air Quality Strategy for San Diego County*. San Diego Air Pollution Control District. December 2016

13 2018 Amendments to Area Designations for State Ambient Air Quality Standards, Initial Statement of Reasons for Rulemaking, Appendix C: Maps and Tables of Area Designations for State and National Ambient Air Quality Standards. California Air Resources Board. December 31, 2018.

14 Nonattainment Areas for Criteria Pollutants (Green Book). United States Environmental Protection Agency. https://www.epa.gov/green-book. Accessed September 2019.

15 *2008 Eight-Hour Ozone Attainment Plan for San Diego County*. San Diego County Air Pollution Control District. December 2016.

emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of the County's General Plan. Therefore, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the 2016 RAQS. If a project would propose development which is less dense than anticipated within the general plan, the project would likewise be consistent with the 2016 RAQS. If a project proposes development that is greater than that anticipated in the General Plan and SANDAG's growth projections, the project might conflict with the 2016 RAQS and SIP and might have a potentially significant impact on air quality.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The SIP also includes rules and regulations that have been adopted by the SDAPCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for ozone.

3.8.2 Eight-Hour Ozone Attainment Plan

The Eight-Hour Ozone Attainment Plan (2016 Ozone Plan)[16] for San Diego County indicates that local controls and state programs would allow the region to reach attainment of the federal 8-hour ozone standard by the conclusion of the 2017 ozone season. SDAPCD relies on the 2016 Ozone Plan to demonstrate how the region will comply with the federal ozone standard. The 2016 Ozone Plan details how the region will manage and reduce ozone precursors (NOx and VOC by identifying measures and regulations intended to reduce these contaminants. The control measures identified in the 2016 Ozone Plan generally focus on stationary sources; however, the emissions inventories and projections in the Plan address all potential sources, including those under the authority of CARB, the EPA, and other federal agencies, specifically addressing conformity issues related to federal planned military growth and planned growth of the San Diego International Airport. Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS.

3.9. Climate Change

3.9.1 Federal Climate Change Legislation

The federal government is taking several common-sense steps to address the challenge of climate change. EPA collects several types of GHG emissions data. This data helps policy makers, businesses, and EPA track GHG emissions trends and identify opportunities for reducing emissions and increasing efficiency. EPA has been collecting a national inventory of GHG emissions since 1990 and in 2009 established mandatory reporting of GHG emissions from large GHG emissions sources.

EPA is also getting GHG reductions through partnerships and initiatives; evaluating policy options, costs, and benefits; advancing the science; partnering internationally and with states, localities, and tribes; and helping communities adapt. Below are a list of laws and programs that have been implemented by the federal government.

3.9.1.1 Climate Action Plan

In June 2013, President Obama unveiled his Climate Action Plan. The plan was a national blueprint to slow the

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16 *2008 Eight-Hour Ozone Attainment Plan for San Diego County.* San Diego County Air Pollution Control District. December 2016.

effects of climate change and focuses on both CO_2 and short-lived climate pollutants, such as CH_4 and HFCs. Whereas, components of the plan are still active, the current administration is "committed to eliminating harmful and unnecessary policies such as the Climate Action Plan"[17].

3.9.1.2 Corporate Average Fuel Economy Standards (CAFE)

First enacted by Congress in 1975, the purpose of CAFE is to reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Transportation Safety Administration (NHTSA) has recently set standards to increase CAFE levels rapidly over the next several years, which will improve our nation's energy security and save consumers money at the pump. This site contains an immense amount of information about the CAFE program including a CAFE overview, rulemaking actions, fleet characteristics data, compliance activities, summaries of manufacturers' fuel economy performances since 1978, and related studies.

3.9.1.3 Energy Independence and Security Act

On December 19, 2007, the Energy Independence and Security Act of 2007[18] (EISA) was signed into law. Among other key measures, EISA will do the following, which would aid in the reduction of national GHG emissions, both mobile and non-mobile:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
- Require approximately 25 percent greater efficiency for light bulbs, by phasing out the incandescent light bulbs between 2012 and 2014; require approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020.
- While superseded by NHTSA and EPA actions described above, EISA also set mpg targets for cars and light trucks and directed the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs".

3.9.2 State Climate Change Legislation

3.9.2.1 Executive Order S 3-05

On June 1, 2005, the Governor issued Executive Order S 3-05 which set the following GHG emission reduction targets:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.

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17 *An America First Energy Plan. White House Issues*. White House. Accessed March 26, 2017. URL: https://www.whitehouse.gov/america-first-energy.

18 *Energy Independence and Security Act*. Public Law 110-140. Signed on December 19, 2007.

- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

To meet these targets, the Climate Action Team prepared a report to the Governor in 2006 that contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.

3.9.2.2 Assembly Bill 32 (AB 32)

In 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32. AB 32 focuses on reducing GHG emissions in California. GHGs, as defined under AB 32, include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. CARB is the state agency charged with monitoring and regulating sources of emissions of GHGs that cause global warming to reduce emissions of GHGs. AB 32 also requires that by January 1, 2008, the CARB must determine what the statewide GHG emissions level was in 1990, and it must approve a statewide GHG emissions limit so it may be applied to the 2020 benchmark. CARB approved a 1990 GHG emissions level of 427 million tonnes of carbon dioxide equivalents ($MtCO_2e$), on December 6, 2007 in its Staff Report. Therefore, in 2020, emissions in California are required to be at or below 427 $MtCO_2e$.

Under the "business as usual or (BAU)" scenario established in 2008, Statewide emissions were increasing at a rate of approximately 1 percent per year as noted below. It was estimated that the 2020 estimated BAU of 596 $MtCO_2e$ would have required a 28 percent reduction to reach the 1990 level of 427 $MtCO_2e$.

3.9.2.3 Climate Change Scoping Plan

The Scoping Plan[19] released by CARB in 2008outlined the state's strategy to achieve the AB-32 goals. This Scoping Plan, developed by CARB in coordination with the Climate Action Team (CAT), proposed a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health. It was adopted by CARB at its meeting in December 2008. According to the Scoping Plan, the 2020 target of 427 $MtCO_2e$ requires the reduction of 169 $MtCO_2e$, or approximately 28.3 percent, from the State's projected 2020 BAU emissions level of 596 $MtCO_2e$.

However, in August 2011, the Scoping Plan was re-approved by the Board and includes the Final Supplement to the Scoping Plan Functional Equivalent Document[20]. This document includes expanded analysis of project alternatives as well as updates the 2020 emission projections considering the current economic forecasts. Considering the updated 2020 BAU estimate of 507 $MtCO_2e$, only a 16 percent reduction below the estimated new BAU levels would be necessary to return to 1990 levels by 2020.

Again, in May 2014, CARB developed; in collaboration with the CAT, the First Update to California's Climate Change Scoping Plan[21] (Update), which shows that California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB-32. In accordance with the United Nations Framework Convention on Climate Change (UNFCCC), CARB is beginning to transition to

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19 *Climate Change Scoping Plan: a framework for change*. California Air Resources Board. December 2008.

20 *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document.* California Air Resources Board. August 19, 2011.

21 *First Update to the Climate Change Scoping Plan, Building on the Framework*. California Air Resources Board. May 2014.

the use of the AR4's 100-year GWPs in its climate change programs. CARB has recalculated the 1990 GHG emissions level with the AR4 GWPs to be 431 $MtCO_2e$, therefore the 2020 GHG emissions limit established in response to AB-32 is now slightly higher than the 427 $MtCO_2e$ in the initial Scoping Plan.

The 2017 Climate Change Scoping Plan (2017 Scoping Plan)[22] builds upon the former Scoping Plans and Updates by outlining priorities and recommendations for the State to achieve its long-term climate objectives. The 2017 Scoping Plan establishes a proposed framework of action for California to meet the climate target of a 40 percent reduction in GHGs by 2030, compared to 1990 levels. The major elements of the framework proposed are enhancement of the Renewables Portfolio Standard and the Low Carbon Fuel Standard; a Mobile Source Strategy, Sustainable Freight Action Plan, Short-Lived Climate Pollutant Reduction Strategy, Sustainable Communities Strategies, and a Post-2020 Cap-and-Trade Program; a 20 percent reduction in GHG emissions from the refinery sector and an Integrated Natural and Working Lands Action Plan.

3.9.2.4 Senate Bill 375 (SB 375)

SB 375 passed the Senate on August 30, 2008 and was signed by the Governor on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions and contributes over 40 percent of the GHG emissions in California, with automobiles and light trucks alone contributing almost 30 percent. SB 375 indicates that GHGs from automobiles and light trucks can be reduced by new vehicle technology. However, significant reductions from changed land use patterns and improved transportation also are necessary. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

3.9.2.5 Title 24

Although not originally intended to reduce GHGs, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. The 2008 standards became effective January 1, 2010. The requirement for when the 2008 standards must be followed is dependent on when the application for the building permit is submitted. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 standards have been published and will become effective July 1, 2017.

3.9.2.6 California Green Building Standards

Part 11 of Title 24 is specifically addressed as the California Green Building Standards Code (CalGreen Code). The 2016 CalGreen Code also became effective January 1, 2017. The specific purpose of the CalGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings with building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable

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22 *The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target.* California Air Resources Board. January 20, 2017. URL: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf

construction practices in the categories of planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

3.9.3 City of Santee

The Santee General Plan (GP)[23] was adopted in 2003, therefore did not include any specific goals and policies aimed at reducing GHG emissions. In 2019, the City of Santee adopted a Sustainable Santee Plan (SSP)[24]. The SSP identified regional and local GHG emissions reduction strategies and measures to help the City achieve its 2020 and 2035 GHG reduction targets. In addition, the SSP includes a GHG reduction strategy framework that includes reductions and measures. These Measures are specific, locally based programs and actions that the City will carry out to achieve its climate action goals and strategies. The SSP contains 8 existing regional GHG reduction measures and 14 GHG community-based reduction measures, which includes measures to increase energy efficiency in existing and new residential and commercial properties; decrease energy demand through reducing urban heat island effect; reducing vehicle miles traveled; increasing use of electric vehicles; improving traffic flow; reducing solid waste generation; and increasing clean energy use.

3.10. GHG Emission Levels

3.10.1.1 Global and State

Per the World Resources Institute[25] (WRI) in 2014, total worldwide GHG emissions were estimated to be 44,204 $MtCO_2e$ and GHG emissions per capita worldwide was 6.13 tCO_2e. These emissions exclude GHG emissions associated with the land use, land-use change, and forestry sector, and bunker fuels. The WRI reports that in 2014, total GHG emissions in the U.S. were 6,371 $MtCO_2e$, with average GHG emissions per capita of 20.00 tCO_2e and total GHG emissions in California were 454.5 $MtCO_2e$ in 2014, with average GHG emissions per capita of 11.75 tCO_2e.

California has a larger percentage of its total GHG emissions coming from the transportation sector (56%) than the U.S. emissions (31%) and a smaller percentage of its total GHG emissions from the electricity generation sector, i.e. California have 13 percent, but the U.S. has 43 percent.

3.10.1.2 City of Santee

In 2019 the City presented an inventory conducted in 2013 as a part of the SSP[26] of GHG emissions for the community-wide Santee. The baseline emissions year was 2005. Annual GHG community-wide emissions by sectors are presented in **Table 4.**

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23 *General Plan 2000-2020.* City of Santee. Adopted by City Council August 27, 2003.

24 *Sustainable Santee Plan – The City's Roadmap to Greenhouse Gas Reductions.* City of Santee. December 2019.

25 CAIT Climate Data Explorer. Historical Emissions. World Resources Institute. http://cait2.wri.org/historical/. Accessed May 2019.

26 *Sustainable Santee Plan – The City's Roadmap to Greenhouse Gas Reductions.* City of Santee. December 2019.

Table 4 – 2013 Community-Wide Santee Greenhouse Gas Emissions Inventory [27]

Sector	GHG Emissions	
	Tonnes of CO_2e	Percentage of Total
On-Road Transportation	242,499	60.2%
Residential Energy	78,651	19.5%
Commercial Energy	48,025	11.9%
Solid Waste	11,151	2.8%
Water	6,578	1.6%
Off-Road Sources	14,699	3.7%
Wastewater	971	0.2%
TOTAL	**402,574**	**100%**

3.10.2 Potential Environmental Effects

Worldwide, global mean surface temperatures are likely to increase by 3 °F to 7 °F by the end of the 21st century[28]. However, a global temperature increase does not directly translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependent on multiple variables, such as topography. One region of the Earth may experience increased temperature, increased incidents of drought, and similar warming effects, whereas another region may experience a relative cooling. According to the International Panel on Climate Change's (IPCC's) Working Group II Report[29], climate change impacts to North America may include diminishing snowpack, increasing evaporation, exacerbated shoreline erosion, exacerbated inundation from sea level rising, increased risk and frequency of wildfire, increased risk of insect outbreaks, increased experiences of heat waves, and rearrangement of ecosystems, as species and ecosystem zones shift northward and to higher elevations.

3.10.3 California Implications

Even though climate change is a global problem and GHGs are global pollutants, the specific potential effects of climate change on California have been studied. The third assessment produced by the California Natural Resources Agency (CNRA)[30] explores local and statewide vulnerabilities to climate change, highlighting opportunities for taking concrete actions to reduce climate-change impacts. Projected changes for the remainder of this century in California include:

- **Temperatures** – By 2050, California is projected to warm by approximately 2.7 °F above 2000 averages, a threefold increase in the rate of warming over the last century and springtime warming — a critical influence on snowmelt — will be particularly pronounced.

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27 *ibid*

28 *Climate Change 2007: Impacts, Adaptation, and Vulnerability*. Website http://www.ipcc.ch/ipccreports/ar4-wg2.htm. Accessed March 2013.

29 ibid

30 *Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California.* California Natural Resources Agency. July 2012 / CEC-500-2012-007

- **Rainfall** – Even though model projections continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability, improved climate models shift towards drier conditions by the mid-to-late 21st century in Central, and most notably, Southern California.
- **Wildfire** - Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning, with human activities continuing to be the biggest factor in ignition risk. Models are showing that estimated that property damage from wildfire risk could be as much as 35 percent lower if smart growth policies were adopted and followed than if there is no change in growth policies and patterns.

The third assessment by CNRA not only defines projected vulnerabilities to climatic changes but analyzes potential impacts from adaptation measures used to minimize harm and take advantage of beneficial opportunities that may arise from climate change.

The report highlights important new insights and data, using probabilistic and detailed climate projections and refined topographic, demographic, and land use information. The findings include:

- The state's electricity system is more vulnerable than was previously understood.
- The Sacramento-San Joaquin Delta is sinking, putting levees at growing risk.
- Wind and waves, in addition to faster rising seas, will worsen coastal flooding.
- Animals and plants need connected "migration corridors" to allow them to move to habitats that are more suitable to avoid serious impacts.
- Native freshwater fish are particularly threatened by climate change.
- Minority and low-income communities face the greatest risks from climate change.

3.11. Baseline Conditions

3.11.1 Local Ambient Air Quality

Existing levels of ambient air concentrations and historical trends and projections in the project area are best documented by measurements made by the SDAPCD and CARB. The nearest monitoring station to the Project site is approximately 4.7 miles southeast of the Project site. The El Cajon-Lexington Elementary School station is in El Cajon on Redwood Avenue. The station monitors ozone, $PM_{2.5}$, PM_{10}, and NO_2. **Table 5** summarizes 2016 through 2018 published monitoring data from the CARB's Aerometric Data Analysis and Management System[31] (ADAM).

The monitoring data shows that the El Cajon station exceeded the State and federal 8-hour in all years except 2016, where the federal standard was not exceeded. No State 1-hour ozone; PM_{10}; $PM_{2.5}$; or NO_2 exceedances were detected.

[31] iADAM: Air Quality Data Statistics. California Air Resources Board. http://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed August 2020.

Table 5 – Ambient Air Quality Monitoring Summary[32]

Air Pollutant	Monitoring Year		
Ozone	**2016**	**2017**	**2018**
Max 1 Hour (ppm)	0.087	0.096	0.087
Days > CAAQS (0.09 ppm)	0	1	0
Max 8 Hour (ppm)	**0.074**	**0.081**	**0.079**
Days > NAAQS (0.075 ppm)	0	5	2
Days > CAAQS (0.070 ppm)	1	9	2
PM_{10}	**2016**	**2017**	**2018**
Max Daily California Measurement	44.1	49.4	44.7
Days > NAAQS (150 $\mu g/m^3$)	0	0	0
Days > CAAQS (50 $\mu g/m^3$)	0	0	0
$PM_{2.5}$	**2016**	**2017**	**2018**
Max Daily National Measurement	23.9	31.8	36.2
Days > NAAQS (35 $\mu g/m^3$)	0	0	1
NO_2	**2016**	**2017**	**2018**
Max Hourly (ppb)	48.0	45.0	45.0
Days > NAAQS (100 ppb)	0	0	0
Days > CAAQS (0.18 ppm)	0	0	0

Abbreviations:

> = exceed ***Bold*** *= exceedance* *N/A = not available*
ppm = parts per million *ppb = parts per billion* *$\mu g/m^3$ = micrograms per cubic meter*
CAAQS = California Ambient Air Quality Standard *NAAQS = National Ambient Air Quality Standard*

32 *ibid*

SECTION 4.0 – SIGNIFICANCE CRITERIA

4.1. Guidelines for the Determination of Air Quality Significance

4.1.1 CEQA Significance

The proposed Project would have a significant adverse effect on air quality if any of the following would occur because of a Project-related component. Would the Project:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State AAQS.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

4.1.2 SDAPCD Screening Level Threshold

In addition, as part of its air quality permitting process, the SDAPCD has established screening level thresholds (SLTs) in Rule 20.2 requiring the preparation of an Air Quality Impact Assessment (AQIA) for permitted stationary sources. The SDAPCD sets forth quantitative emission thresholds below which a stationary source would not have a significant impact on ambient air quality. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in **Table 6** are exceeded. The pounds per day standards apply to the proposed project.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality.

Table 6 – Screening Level Threshold for Criteria Pollutants[33]

Pollutant	Emissions (ppd)	
	Construction	Operations
Reactive Organic Gases (ROG)	137	137
Nitrogen Oxide (NO_X)	250	250
Carbon Monoxide (CO)	550	550
Respirable Particulate Matter (PM_{10})	100	100
Fine Particulate Matter ($PM_{2.5}$)	55	55

The thresholds listed in **Table 6** represent SLTs that can be used to evaluate whether project-related emissions could cause a significant impact on air quality. Emissions below the screening-level thresholds would not cause a

[33] Rule 20.2 - New Source Review, Non-Major Stationary Sources. San Diego Air Pollution Control District. Revision Adopted November 4, 1998.

significant impact. If emissions exceed these thresholds, modeling would be required to demonstrate that the proposed project's total air quality impacts result in ground-level concentrations that are below the CAAQS and NAAQS, including appropriate background levels. For nonattainment pollutants, if emissions exceed the thresholds shown in **Table 6**, the proposed project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality.

Although the County proposes a significance threshold for lead, emissions of this pollutant are not calculated by CalEEMod. Emissions of lead have significantly decreased due to the near elimination of it as an anti-knock gasoline additive and lead emissions from gasoline engines are no longer a principal pollutant of concern. There are no other known emission sources of lead associated with the proposed Project.

4.2. Guidelines for the Determination of Climate Change Significance

The proposed Project would have a significant adverse effect on climate change because of GHG emissions if any of the following would occur because of a Project-related component. Would the Project:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

4.2.1 California Air Pollution Control Officers Association Screening Thresholds

In lieu of specific quantitative GHG thresholds statewide, in 2008 the California Air Pollution Control Officers Association (CAPCOA) offered a recommendation of a unit-based screening threshold that was based on market capture of various land use densities and project types[34]. This White Paper proposed that projects that would meet or fall below the screening threshold of 900 tCO_2e per year of GHG could be expected to result a level that the climate change impacts would be considered less than significant.

4.2.2 Local Significance Thresholds

Neither the SDAPCD nor the City of Santee have adopted emission-based quantitative significance threshold for GHG. However, since the proper context for addressing GHG emissions is with an assessment of cumulative impacts, the City's SSP[35] established a CEQA Project Consistency Checklist (Checklist) that is intended to be used for future project specific GHG emissions analyses. Projects that meet the requirements of the Checklist would be deemed consistent with the SSP and would be found to have a less that significant contribution to cumulative GHG.

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34 *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act.* California Air Pollution Control Officers Association. January 2008. Available at http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf.

35 *ibid*

SECTION 5.0 – IMPACT ANALYSES

5.1. Methodology and Assumptions

Information and analysis have been compiled based on an understanding of the existing ambient air quality of the SDAB and review of existing technical data, aerial maps, and applicable laws, regulations, and guidelines. The California Emissions Estimator Model[36] (CalEEMod®) Version 2013.3.2 land use and air emissions model were utilized to estimate daily criteria emissions and annual GHG emissions from construction and operation of the project. Construction of the Project would result in temporary emissions of ROG, CO, NO_X, SO_X, PM_{10}, $PM_{2.5}$, and GHGs. Emissions from construction activities would result from fuel combustion and exhaust from construction equipment and vehicle traffic (i.e., worker commute and delivery truck trips), and grading and site work. Long-term operational emissions will come from mobile sources and area sources, such as landscaping and architectural coatings. For GHG emissions, CalEEMod also estimates indirect emissions from energy use, water supply, wastewater, and solid waste. Criteria pollutant emissions were estimated in pounds per day (ppd) and GHG emissions in tonnes per year. A detailed summary of the assumptions and model data used to estimate the Project's emissions are provided in Appendix A.

Other air quality impacts (i.e., local emissions of CO, odors, and construction- and operation-related TACs) were assessed in accordance with methodologies recommended by CARB and SDAPCD.

5.2. IMPACT ANALYSES

IMPACT AQ-1: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The RAQS establishes what could be thought of as an "emissions budget" for the SDAB. This budget considers existing conditions, planned growth based on General Plans for cities within the SANDAG region, and air quality control measures implemented by the SDAPCD.

The "emissions budget" accounts for current emissions associated with the proposed Project as well as previously approved projects consistent with current General Plan policies. Therefore, to determine whether the proposed Project is consistent with the RAQS requires a comparison of net emissions from the proposed development to the emissions associated with previously approved and accounted for plans (commonly known as the Consistency Criterion of the RAQS).

Since the Project's zoning will not be changed and the proposed site's currently planned use for residential it is included in the GP. The General plan was analyzed in the emissions budget; therefore, the Project is consistent with the EPA-approved ROG, NO_X, and CO budgets for future years and the Project would not conflict with or obstruct the implementation of the RAQS or applicable portions of the SIP.

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36 California Emissions Estimator Model (CalEEMod) Version 2013.3.2. California Air Pollution Control Officers Association

IMPACT AQ-2: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (AAQS)?

Construction

Construction of the Project would result in emissions of the criteria air pollutants ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$. Emissions from construction would result from fuel combustion and exhaust from construction equipment and vehicle traffic and fugitive dust from earth moving operations and roadways. Criteria pollutant emissions from off-road construction equipment use were estimated using the latest CalEEMod computer model.

Whereas, construction activity is planned in two phases, with the first phase consisting of the site preparation and grading necessary to produce the site building pads. The second phase will consist of building construction, paving, and architectural coating. CalEEMod defaults were used.

Table 7 presents ppd emissions for construction activities related to the Project. As **Table 7** shows, that the thresholds are not exceeded in either construction year. CalEEMod output is in Appendix A.

Table 7 – Construction Criteria Emissions

Year - Construction Phase	Criteria Emissions (ppd)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction in 2021	46.00	42.46	36.69	20.41	11.99
Construction in 2022	44.02	1.53	1.84	0.10	0.10
Taylor Street Maximum Daily	***46.0***	***42.5***	***36.7***	***20.4***	***12.0***
Significance Threshold	*137*	*250*	*550*	*100*	*55*
Exceed Thresholds?	*No*	*No*	*No*	*No*	*No*

Operational

CalEEMod was also used to estimate the predicted operational emissions of the Project. Operational emissions include emissions from mobile sources associated with the facility, natural gas usage, architectural coatings, consumer products, and landscaping equipment.

Emissions for each category are presented in **Table 8**. The thresholds of significance are also included in this table as well as information regarding whether annual operational emissions would exceed those thresholds. As shown in **Table 8,** operational emissions would be well below SDAPCD thresholds. Detailed emissions calculations are included in Appendix A.

Table 8 – Estimated Operational Criteria Emissions

Emission Category	Criteria Emissions (ppd)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Mobile	0.20	0.80	2.11	0.61	0.17
Energy	0.01	0.11	0.05	0.01	0.01
Area	0.82	0.25	1.26	0.03	0.03
Project Total	***1.0***	***1.2***	***3.4***	***0.7***	***0.2***
Significance Threshold	*137*	*250*	*550*	*100*	*55*
Exceed Thresholds?	*No*	*No*	*No*	*No*	*No*

Cumulative Impacts

In lieu of specific City guidelines, the County's Air Quality Guidelines[37] was used. The Guidelines state that even if direct air quality impacts from a proposed project are less than significant, the project may still have a cumulatively considerable impact on air quality if the emissions are in combination with other reasonably foreseeable future projects within proximity of the proposed action. Projects that would individually cause a significant direct air quality impact with respect to construction or operational PM_{10}, $PM_{2.5}$, NO_X, or VOC emissions would also be considered to have a cumulatively considerable net increase in emissions.

It has been shown that during construction and operational activities, no significance threshold was expected to be exceeded; therefore, the emissions of particulate matter and NO_X would not result in a significant cumulative health impact.

Additionally, the guidelines list special consideration of operational cumulatively considerable net increases due to the mobile nature of the emissions. The following guidelines for determining significance must be used for determining the cumulatively considerable net increases during the operational phase:

- A project that does not conform to the RAQS and/or has a significant direct impact on air quality with regard to operational emissions of PM_{10}, $PM_{2.5}$, NO_X, and/or VOCs would also have a significant cumulatively considerable net increase.
- Projects that cause road intersections to operate at or below a level of service E (analysis only required when the addition of peak-hour trips from the Proposed Project and the surrounding projects exceeds 2,000) and create a CO hotspot create a cumulatively considerable net increase of CO.

The Project is considered consistent with the current RAQS and area- and mobile-source emissions do not cause a significant impact during Project operations. Additionally, the Project does not create a CO hotspot.

IMPACT AQ-3: Would the Project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are defined as land uses where sensitive population groups are likely to be located (e.g.,

[37] Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality. County of San Diego. Department of Planning and Land Use, Department of Public Works. March 19, 2007.

children, the elderly, the acutely ill, and the chronically ill). These land uses include residences, schools, childcare centers, retirement homes, convalescent homes, medical care facilities, and recreational facilities. Sensitive receptors that may be adversely affected by the Project include the surrounding residential land uses.

Since the Project site is adjacent to sensitive receptors, special attention is considered warranted to mitigate the potential for impact to these residences. Even though the construction management team is required to meet the SDAPCD Rule 55, Fugitive Dust Control requirements, which includes prohibition of dust leaving property line for more than 3 aggregated minutes per hour, special consideration should be observed during the grading activity nearest these residences. Therefore, the following mitigation is proposed:

MM-AQ-1 – The construction management team shall ensure that extra watering of disturbed exposed earth near the adjacent properties shall occur with the intent of minimizing dust emissions into the atmosphere beyond the property line.

Diesel Particulate Matter

During construction activities, diesel equipment will be operating and DPM is known to the State as a TAC. However, the risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure, which is defined as 24 hours per day, 7 days per week, 365 days per year, for 70 years. The short-term nature of project construction would support that exposure to diesel exhaust emissions during construction would not be significant.

IMPACT AQ-4: Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The CEQA Guidelines indicate that a significant impact would occur if a project would create objectionable odors affecting a substantial number of people. While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SDAPCD. Because offensive odors rarely cause any physical harm and no requirements for their control are included in State or federal air quality regulations, the SDAPCD has no rules or standards related to odor emissions, other than its nuisance rule.

The proposed Project does not include elements that would generate objectionable odors, nor would they attract persons to an area where there would be a potential for exposure to objectionable odors. The impact would be less than significant.

IMPACT GHG-1: Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

The GHG emissions estimates for this analysis includes the following sources of annual direct and indirect emissions: (1) area sources (e.g., landscaping-related fuel combustion sources and natural gas fireplaces); (2) energy use associated with residential and non-residential buildings; (3) water and wastewater; (4) solid waste; (5) mobile sources (e.g., passenger vehicles and trucks); and (6) construction. The ongoing operational emissions consist of the first five categories, while the one-time emissions are associated with construction. The typical types of GHG emissions resulting from developments such as the Project are emissions of CO_2, CH_4, and N_2O.

One-time emissions are those construction emissions that are not reoccurring over the life of the Project. The major construction phase included in this analysis is grading and on-site earth balancing. Emissions are from off-road construction equipment and on-road vehicles like worker and vendor commuting and trucks for soil and material hauling.

Some emissions would occur every year after buildout. GHGs are emitted from buildings because of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; these emissions are considered direct emissions when associated with a building. GHGs are also emitted during the generation of the electricity from fossil fuels used by the project buildings, these emissions are indirect emissions. Indirect GHG emissions also result from the production of electricity used to convey, treat, and distribute water and wastewater. The amount of electricity required to convey, treat, and distribute water depends on the volume of water as well as the sources of the water. In addition, CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill using waste disposal rates by land use and overall composition.

The primary source of annual GHG emissions are associated with on-road mobile sources related to residents, workers, customers, and delivery vehicles visiting the land use types in the project. A summary of all GHG emissions from the proposed Project is presented in **Table 9.**

Table 9 – Proposed Project GHG Emissions

Category	CO_2e (t/year)
Direct – Mobile (Amortized Construction)	11.1
Direct – Mobile (Operational)	110.6
Direct – Area Source	11.3
Indirect – Purchased Electricity (Power)	39.2
Indirect – Purchased Natural Gas (Power)	23.0
Indirect – Purchased Electricity (Water)	7.2
Direct – Fugitive – Solid Waste	8.2
TOTAL	211

The estimated annual GHG emissions shown in **Table 9** are less than a CAPCOA recommended screening threshold of 900 tCO_2e per year and therefore, could potentially reach a level of significance. However, since the City has determined that the proper context for addressing GHG emissions is within an assessment of cumulative impacts, significance will be determined below in the discussion for **Impact 2**.

IMPACT GHG-2: Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

The City recognizes that GHG emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to the significant cumulative impact of global climate change and significance determinations should be assessed using cumulative impacts. The City has reasoned that project specific GHG emissions analyses should be based on consistency with the recently adopted SSP. The SSP supplies a Checklist as a method to demonstrate consistency with the SSP. A completed Checklist for the

Project is included as Appendix B of this Study and is summarized below:

STEP 1: The first step of the Checklist allows the City to determine the project's consistency with the land use assumptions used in the Plan.

The property is zoned Low Density Residential and does not require a General Plan Amendment; therefore, the Project is consistent for land uses.

STEP 2: The second step of the SSP consistency review is to review and evaluate a project's consistency with the applicable measures of the SSP. Each checklist item is associated with a specific GHG reduction measure(s) in the SSP.

- **Measure 1.2** – For existing Residential Unit Permit for Major Modifications that is considered a Project under CEQA must implement energy efficiency retrofits recommended from City Energy Audit.
  Not applicable because the project does not have any existing residential units.

- **Measure 2.1** – New residential construction meets or exceeds California Green Building Standards Tier 2 Voluntary Measures.
  It will be completed as an item in the project's conditions of approval and as a note on the grading plan.

- **Measure 3.2** – For existing commercial units of 10,000 sq. ft. or more seeking building permits for modifications representing 30% or more sq. ft, and considered a Project under CEQA must implement energy efficiency retrofits recommended by the City to meet California Green Building Standards Tier 1 Voluntary Measures and explain the retrofits implemented.
  Not applicable because the project does not have a commercial component.

- **Measure 4.1** – New commercial units meet or exceed California Green Building Standards Tier 2 Voluntary Measures.
  Not applicable because the project does not have a commercial component.

- **Measure 5.1** – Project utilizes tree planting for shade and energy efficiency such as tree planting in parking lots and streetscapes.
  Not applicable because the project does not have a commercial component.

- **Measure 5.2** – Project uses light reflecting surfaces such as enhanced cool roofs on commercial buildings.
  Not applicable because the project does not have a commercial component.

- **Measure 6.1** – Proposed project streets include sidewalks, crosswalks, and other infrastructure that promotes non-motorized transportation options.
  Not applicable because the project is such size as to render this measure unfeasible.

- **Measure 6.2** – Proposed project installs bike paths to improve bike transit.
  Not applicable because the project is such size as to render this measure unfeasible.
- **Measure 7.1** – Install electric vehicle chargers in all new residential and commercial developments.
  a. For new Single Family Residential, install complete 40 Amp electrical service and one e charger.
  It will be completed as an item in the project's conditions of approval and as a note on the grading plan.
- **Measure 8.1** – Implement traffic flow improvement program.
  Not applicable because the project is such size as to render this measure unfeasible.
- **Measure 9.1** – Reduce waste at landfills.
  Not applicable because the project is such size as to render this measure unfeasible.
- **Measure 10.1** – Increase distributed energy generation within City of Santee by implementing the following applicable photovoltaic solar systems: a. Single family residential to install at least 2kW per unit of PV solar systems, unless the installation is infeasible due to poor solar resources established in a solar feasibility study prepared by a qualified solar consultant submitted with an application.
  It will be completed as an item in the project's conditions of approval and as a note on the grading plan.

OB-1
AIR ANALYSES

APPENDIX A

Greenhouse Gas Calculations

Tyler Street Project - Detail

San Diego County, Annual

CalEEMod.2016.3.1

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	14	Dwelling Unit	4.55	25,200.00	40

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2019
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Woodstoves - Assuming 100% natural gas fireplaces

Vehicle Trips - Trip lengths taken from SANDAG

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberGas	7.7	14
tblFireplaces	NumberNoFireplace	1.4	0
tblFireplaces	NumberWood	4.9	0
tblProjectCharacteristics	OperationalYear	2018	2019
tblSequestration	NumberOfNewTrees	0	14
tblVehicleTrips	HO_TL	7.5	5.5
tblVehicleTrips	HS_TL	7.3	5.3
tblVehicleTrips	HW_TL	10.8	7.9
tblWoodstoves	NumberCatalytic	0.7	0
tblWoodstoves	NumberNoncatalytic	0.7	0

2.0 Emissions Summary

2.1 Overall Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
2017													298.7339	0.0732	0	300.5639
2018													25.1529	6.37E-03	0	25.312
Maximum													**298.7339**	**0.0732**	**0**	**300.5639**

2.2 Overall Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area													11.1969	3.80E-04	2.00E-04	11.2666
Energy													60.928	2.00E-03	7.20E-04	61.1928
Mobile													120.8257	7.18E-03	0	121.0052
Waste													3.3291	0.1967	0	8.2476
Water													6.2589	0.03	7.50E-04	7.2319
Total													**202.5385**	**0.2363**	**1.67E-03**	**208.9441**

2.3 Vegetation

Category	CO2e
	MT
New Trees	9.912
Total	**9.912**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2017	2/7/2017	5	5	
2	Grading	Grading	2/8/2017	2/17/2017	5	8	
3	Building Construction	Building Construction	2/18/2017	1/5/2018	5	230	
4	Paving	Paving	1/6/2018	1/31/2018	5	18	
5	Architectural Coating	Architectural Coating	2/1/2018	2/26/2018	5	18	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	247	0.4
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	1	8	158	0.38
Grading	Graders	1	8	187	0.41
Grading	Rubber Tired Dozers	1	8	247	0.4
Grading	Tractors/Loaders/Backhoes	3	8	97	0.37
Building Construction	Cranes	1	7	231	0.29
Building Construction	Forklifts	3	8	89	0.2
Building Construction	Generator Sets	1	8	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
Building Construction	Welders	1	8	46	0.45
Paving	Cement and Mortar Mixers	2	6	9	0.56
Paving	Pavers	1	8	130	0.42
Paving	Paving Equipment	2	6	132	0.36
Paving	Rollers	2	6	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8	97	0.37
Architectural Coating	Air Compressors	1	6	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Grading	6	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5	1	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Paving	8	20	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2017

Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust													0	0	0	0
Off-Road													8.8336	2.71E-03	0	8.9013
Total													**8.8336**	**2.71E-03**	**0**	**8.9013**

Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0	0	0	0
Worker													0.3574	1.00E-05	0	0.3577
Total													**0.3574**	**1.00E-05**	**0**	**0.3577**

3.3 Grading - 2017

Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust													0	0	0	0
Off-Road													11.0238	3.38E-03	0	11.1082
Total													**11.0238**	**3.38E-03**	**0**	**11.1082**

Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0	0	0	0
Worker													0.4765	2.00E-05	0	0.4769
Total													**0.4765**	**2.00E-05**	**0**	**0.4769**

3.4 Building Construction - 2017

Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road													270.5544	0.0667	0	272.2209
Total													**270.5544**	**0.0667**	**0**	**272.2209**

Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													3.0214	2.60E-04	0	3.0279
Worker													4.4669	1.70E-04	0	4.4711
Total													**7.4883**	**4.30E-04**	**0**	**7.499**

3.4 Building Construction - 2018

Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road													5.9442	1.46E-03	0	5.9806
Total													**5.9442**	**1.46E-03**	**0**	**5.9806**

Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0.0669	1.00E-05	0	0.0671
Worker													0.0965	0	0	0.0966
Total													**0.1634**	**1.00E-05**	**0**	**0.1636**

3.5 Paving - 2018

Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road													15.2887	4.63E-03	0	15.4045
Paving													0	0	0	0
Total													**15.2887**	**4.63E-03**	**0**	**15.4045**

Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0	0	0	0
Worker													1.3892	5.00E-05	0	1.3904
Total													**1.3892**	**5.00E-05**	**0**	**1.3904**

3.6 Architectural Coating - 2018

Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating													0	0	0	0
Off-Road													2.2979	2.20E-04	0	2.3034
Total													**2.2979**	**2.20E-04**	**0**	**2.3034**

Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0	0	0	0
Worker													0.0695	0	0	0.0695
Total													**0.0695**	**0**	**0**	**0.0695**

4.0 Operational Detail - Mobile

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	133.28	138.74	120.68	276,192	276,192
Total	133.28	138.74	120.68	276,192	276,192

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	7.90	5.30	5.50	41.60	18.80	39.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.581689	0.044135	0.186694	0.113515	0.018244	0.0056	0.015197	0.022573	0.001888	0.002088	0.006279	0.000742	0.001357

5.0 Energy Detail

5.2 Energy by Land Use - NaturalGas

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	398896													21.2866	4.10E-04	3.90E-04	21.4131
Total														**21.2866**	**4.10E-04**	**3.90E-04**	**21.4131**

5.3 Energy by Land Use - Electricity

Land Use	Electricity Use	Total CO2	CH4	N2O	CO2e
	kWh/yr	MT/yr			
Single Family Housing	121299	39.6414	1.60E-03	3.30E-04	39.7797
Total		**39.6414**	**1.60E-03**	**3.30E-04**	**39.7797**

6.0 Area Detail

6.2 Area by SubCategory

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Architectural Coating													0	0	0	0
Consumer Products													0	0	0	0
Hearth													11.0271	2.10E-04	2.00E-04	11.0926
Landscaping													0.1698	1.70E-04	0	0.174
Total													**11.1969**	**3.80E-04**	**2.00E-04**	**11.2666**

7.0 Water Detail

7.2 Water by Land Use

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Single Family Housing	0.912156 / 0.575055	6.2589	0.03	7.50E-04	7.2319
Total		**6.2589**	**0.03**	**7.50E-04**	**7.2319**

8.0 Waste Detail

8.2 Waste by Land Use

Land Use	Waste Disposed	Total CO2	CH4	N2O	CO2e
	tons	MT/yr			
Single Family Housing	16.4	3.3291	0.1967	0	8.2476
Total		**3.3291**	**0.1967**	**0**	**8.2476**

11.0 Vegetation

11.2 Net New Trees

Species Class	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	14	9.912	0	0	9.912
Total		**9.912**	**0**	**0**	**9.912**

OB-1
AIR ANALYSES

APPENDIX B

Tyler Street SSAP Checklist

1. Project Information

Contact Information	
Project No./Name:	TM 2017-01 - Tyler Street Project
Address:	Extension of Tyler Street south and south of Mesa Heights Road
Applicant Name:	Performance Drywall & Insulation
Contact Information:	Mark Harris
Consultant: Joe O'Bannon, OB-1 Air Analyses, 760-637-2348	4204 Jutland Dr. Suite A2
	San Diego, CA 92117
Project Description Characteristics	
1. What is the size of the Project (acres)?	8 gross acres
2. Identify all Applicable Proposed Land uses:	
a. Residential Single Family (Indicate number of single family units)	14 single-family residential (SFR) lots
b. Residential Multifamily (Indicate number of multifamily units)	
c. Commercial (total square footage)	
d. Industrial (total square footage)	
e. Other (describe)	
3. Provide a brief description of the project proposed:	14 prepared lots that will be sold to other parties for SFRs to be built by their owners

2. Determining Land Use Consistency

Checklist Item

As the first step in determining the consistency with the Sustainable Santee Action Plan for the discretionary development projects, this section allows the City to determine the project's consistency with the land use assumptions used in the Plan.

	No	Yes
1. Is the proposed project consistent with the existing General Plan and land use zoning designations? OR		X
2. If the proposed project is not consistent with the existing land use plan and zoning designations, does the project include a land use plan and/or zoning designation amendment that is identified in the Sustainable Santee Action Plan Land Use Buffer (see Appendix A, Table 11)?		
3. If the proposed project is not consistent with the existing land use plan, zoning designations, or Land Use Buffer, does the project include a land use plan and/or zoning designation ammendment that will result in an equivalent or less GHG-intensive project when compared to the existing designations?		

Notes:
For questions 1, if the answer is **Yes**, proceed to the Sustainable Santee Action Plan Consistency Checklist. If the answer is **No**, procced to question 2.
For question 2, if the answer is **Yes**, proceed to the Sustainable Santee Action Plan Consistency Checklist. If the answer is **No**, proceed to question 3.
For question 3, if the answer is **Yes** provide estimated project emissions under both existing and proposed designation (s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation. If the answer of question 3 is **No** then, in accordance with the City's Significance Determination Thresholds, the project's GHG impact may be significant. The project must nonetheless incorporate each of the applicable measures identified in the Checklist to mitigate cumulative GHG emissions impacts unless the decision maker finds that a measure is infeasible in accordance with CEQA Guidelines Section 15091.

Sustainable Santee Action Plan (A Project Consistency Checklist

Greenhouse Gas Reduction Measure	Measure Applicability			Description
	Yes	No	N/A	
Emissions Measures Category: Energy Efficiency				
Land Use Sector Residential				
Goal 1. Increase Energy Efficiency in Existing Residential Units				
Measure 1.2. For existing Residential Unit Permit for Major Modifications (more than 30% of dwelling unit size, including bathroom and kitchen) that is considered a Project under CEQA must implement energy efficiency retrofits recommended from City Energy Audit and explain the energy efficiency retrofits implemented.			X	The project does not have any existing residential units.
Goal 2. Increase Energy Efficiency in the New Residential Units				
Measure 2.1. New residential construction meet or exceed California Green Building Standards Tier 2 Voluntary Measures, such as obtaining green building ratings including LEED, Build it Green, or Energy Star Certified building certifications in scoring development and explain the measures implemented.	X			It will be completed as an item in the project's conditions of approval and as a note on the grading plan.
Land Use Sector Commercial				
Goal 3. Increase Energy Efficiency in Existing Commercial Units				
Measure 3.2. For existing commercial units of 10,000 sq. ft. or more seeking building permits for modifications representing 30% or more sq. ft, and considered a Project under CEQA must implement energy efficiency retrofits recommended by the City to meet California Green Building Standards Tier 1 Voluntary Measures and explain the retrofits implemented.			X	The project does not have a commercial component.
Goal 4. Increase Energy Efficiency in New Commercial Units				
Measure 4.1. New commercial units meet or exceed California Green Building Standards Tier 2 Voluntary Measures such as obtain green building ratings including: LEED, Build it Green, or Energy Star Certified buildings certifications in scoring development and explain the measures implemented.			X	The project does not have a commercial component.
Emissions Measures Category: Advanced Goals Measures				
Land Use Sector Commercial				
Goal 5. Decrease Energy Demand through Reducing Urban Heat Island Effect				
Measure 5.1. Project utilizes tree planting for shade and energy efficiency such as tree planting in parking lots and streetscapes.			X	The project does not have a commercial component.
Measure 5.2. Project uses light reflecting surfaces such as enhanced cool roofs on commercial buildings.			X	The project does not have a commercial component.
Emissions Measures Category: Transportation				
Land Use Sector Residential and Commercial				
Goal 6. Decrease GHG Emissions through a Reduction in VMT				
Measure 6.1. Proposed project streets include sidewalks, crosswalks, and other infrastructure that promotes non motorized transportation options.			X	Project is such size as to render this measure unfeasible
Measure 6.2. Proposed project installs bike paths to improve bike transit.			X	Project is such size as to render this measure unfeasible

Sustainable Santee Action Plan (A Project Consistency Checklist

Greenhouse Gas Reduction Measure	Measure Applicability			Description
	Yes	No	N/A	
Land Use Sector Residential and Commercial				
Goal 7: Increase Use of Electric Vehicles				
Measure 7.1. Install electric vehicle chargers in all new residential and commercial developments.				
a. For new Single Family Residential, install complete 40 Amp electrical service and one e charger.	X			It will be completed as an item in the project's conditions of approval and as a note on the grading plan.
b. For new Multifamily Residential, install e chargers for 13 percent of total parking.			X	The project does not have a multifamily component.
c. For new Office Space, Regional Shopping Centers, and Movie Theaters, install e chargers for 5 percent of total parking spaces.			X	The project does not include any of these uses.
d. For new Industrial and other Land Uses employing 200 or more employees, install e charges for 5 percent of total parking spaces.			X	The project does not have an industrial component.
Land Use Sector Residential and Commercial				
Goal 8. Improve Traffic Flow				
Measure 8.1. Implement traffic flow improvement program.				
a. Install smart traffic signals at intersections warranting a traffic signal, OR			X	Project is such size as to render this measure unfeasible
b. Install roundabout.			X	Project is such size as to render this measure unfeasible
Emissions Measures Category: Solid Waste				
Land Use Sector Residential and Commercial				
Goal 9: Decrease GHG Emissions through Reducing Solid Waste Generation				
Measure 9.1. Reduce waste at landfills.			X	Project is such size as to render this measure unfeasible
Emissions Measures Category: Clean Energy				
Land Use Sector Residential and Commercial				
Goal 10. Decrease GHG Emissions through Increased Clean Energy Use				
Measure 10.1. Increase distributed energy generation within City of Santee by implementing the following applicable photovoltaic solar systems:				
a. Single family residential to install at least 2kW per unit of PV solar systems, unless the installation is infeasible due to poor solar resources established in a solar feasibility study prepared by a qualified solar consultant submitted with an application	X			It will be completed as an item in the project's conditions of approval and as a note on the grading plan.
b. Multifamily residential to install at least 1kW per unit of PV solar systems, unless the installation is infeasible due to poor solar resources established in a solar feasibility study prepared by a qualified solar consultant submitted with an applicant's formal project submittal to City.			X	The project does not have a multifamily component.
c. On commercial buildings, install at least 2 kW per square foot of building area (e.g., 2,000 sq. ft. = 3 kW) unless the installation is infeasible due to poor solar resources.			X	The project does not have a commercial component.

APPENDIX B

BIOLOGICAL ASSESSMENT REPORT FOR THE TYLER STREET RESIDENTIAL TM CITY OF SANTEE

Project #
TM2017-1;
DR2017-1; AEIS2017-S

Prepared For:

Tyler Street TM
4204 Jutland Dr. Suite A2
San Diego, CA 92117

July 15, 2022

Updated: January 31, 2024

Additions shown in underline/Deletions shown in ~~strikeout~~

Prepared By:

Michael K. Jefferson
Senior Biologist
BLUE Consulting Group

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SUMMARY OF FINDINGS

The Property, located over approximately 27.35 acres is located at the terminus of Tyler St. in the City of Santee (City), County of San Diego. The site is located just south of Mesa Heights Road, approximately 2000 feet south of the 52 Freeway and approximately 2000 feet west of the 125 Freeway, on the La Mesa USGS 7.5-minute quadrangle (Figures 1-3).

The Property is within the City of Santee draft Multiple Species Conservation Plan (MSCP) Subarea Plan and Multiple Habitat Preservation Area (MHPA) and Mission Trails Sub-Unit. A portion of the Property supports designated Critical Habitat for the coastal California gnatcatcher as well as an existing habitat easement to the Padre Dam Water District over approximately 0.91 acres in the south eastern corner of the property. This easement is titled '*Diegan sage scrub easement*' but supports non-native grasslands and disturbed habitat (dirt access roads).

A total of seven vegetation communities are mapped on-site: Diegan coastal sage scrub, mixed chaparral, disturbed southern willow scrub, jurisdictional ephemeral drainage, disturbed habitat, native and non-native grasslands.

The proposed Project would potentially significantly impact three sensitive habitat types across 6.78 acres. These impacts to native grassland, annual non-native grasslands and southern mixed chaparral are considered significant and require mitigation.

Potentially significant biological impacts shall be reduced to below a level of significance with implementation of the recommended mitigation measures. For the potentially significant impacts to the 6.78 acres of sensitive habitat(s), including ~~double~~ mitigation for the impacts to the habitats within the existing Padre Dam Municipal Water District sage scrub easement, the avoided ~~a minimum of 7.7~~19.45 acres of sensitive habitat will be preserved, maintained and managed in perpetuity. This will be funded and implemented as outlined in the forthcoming Habitat Management Plan (HMP) and Property Assessment Report (PAR). No offsite compensatory mitigation or onsite habitat restoration is required.

Fuel Modification Zone (FMZ) 1 and 2 maintenance is required onsite within two sensitive habitat types; native grassland and annual non-native grasslands. Impacts within the Fuel Modification Zone 1 area are considered significant impacts and compensatory mitigation is required.

Fuel Modification Zone 2 maintenance is required onsite within three (3) sensitive habitat types; native grasslands, non-native grasslands and willow scrub. Maintenance to the willow scrub within the Fuel Modification Zone 2 area (remove dead material only) is considered impact neutral and compensatory mitigation is not required (only remove dead material).

The proposed Project will not significantly impact any sensitive plant/wildlife species. All areas potentially supporting sensitive wildlife species (those areas/habitats/plants that support the potentially occurring sensitive species) will not be impacted; e.g. the *Plantago erecta* observed onsite, outside of the impact footprint, that could support the Quino checkerspot butterfly and the coastal sage scrub which potentially supports the coastal California gnatcatcher. Those areas are proposed to be preserved and managed in perpetuity.

REGIONAL CONTEXT

This project is located within City of Santee draft Multi-Habitat Planning Area (MHPA), the preserve system of the City's draft Multiple Species Conservation Program (MSCP). The proposed project is located within the Mission Trails Sub-unit. The draft subarea plan identifies goals for this sub-unit which include protecting habitat for covered species, preserving the quality of existing habitat, protecting both vernal pool species and watersheds,

maintaining connect to Mission Trails Regional Park, maintain connection between hardline areas in the subunit, and maintaining wildlife corridors (City of Santee draft MSCP, ~~2006~~2018).

In San Diego County, several conservation planning efforts are currently in progress with the long-term goal of establishing a regional reserve system that will protect native habitat lands and their associated biota. The ultimate goals of these plans are the establishment of biological preserve areas in conformance with the State of California Natural Community Conservation Planning (NCCP) program, and to contribute to the preserve system already established by the Multiple Species Conservation Plan (draft MSCP) in San Diego County.

Under the Natural Community Conservation Planning Act, the CDFW is responsible for implementing conservation guidelines for NCCP programs. The San Diego County MSCP (City of San Diego 1998), as currently approved, covers approximately 900 square miles in southwestern San Diego County, including the cities of Del Mar, Poway, San Diego, Santee, El Cajon, La Mesa, Lemon Grove, National City, Chula Vista, Coronado, and Imperial Beach. The MSCP is intended to protect natural resources while still allowing local jurisdictions to maintain land use control and development flexibility. The MSCP does this by planning a regional preserve system, which protects the region's sensitive habitats and species and provides mitigation opportunities for local jurisdictional projects. Local jurisdictions implement the plan by developing subarea plans that describe their specific implementing mechanisms, preserve boundaries, and species and habitat protections while preserving the integrity of the MSCP.

The draft MSCP roughly designated a matrix of multi-habitat planning areas and biological core areas and habitat linkages to protect resources. Because the multi-habitat planning areas and biological core areas and habitat linkages are designated at a regional scale, these areas are fine-tuned by jurisdictions in their subarea plans. The combination of MSCP and subarea plans serve as a multiple-species Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (FESA) and an NCCP pursuant to the California Natural Community Conservation Planning Act of 1991 and California Endangered Species Act.

The MSCP evaluated 93 plant and wildlife species for coverage under the plan; of these, 85 species were provided regulatory coverage under the plan. For some species, this coverage is dependent on a number of factors, including multiple jurisdictional participation, adequate building of preserve system, adequate protection of certain populations, and other factors. Not all covered species occur in each jurisdiction, so the number of species covered by each subarea plan may be a subset of the MSCP list.

Multiple Habitat Conservation Program (MHCP)

The city is in the process of developing an NCCP/HCP Subarea Plan under the Multiple Species Conservation Program (MSCP) Subregional Plan; however, a Subarea Plan (SAP) has not yet been adopted by the city or permitted by the Service or the Department. ~~The City of Santee is in the process of revising their 2018 06 draft MHCP subarea plan.~~ The ~~2006~~ 2018 Draft Santee MSCP Subarea Plan seeks coverage for ~~48~~ 22 species (~~15~~ 8 plant and ~~33~~ 14 wildlife species) and relies on a combination of hardline protection areas and soft-line, criteria-based protection zones to protect species and habitat. Since the Draft Plan is still being finalized, portions may still change, including the covered species list.

The subarea is divided into five subunits: (1) San Diego River Subunit; (2) Rattlesnake Mountain Subunit; (3) Mission Trails Subunit; (4) Magnolia Summit Subunit; and (5) Fanita Ranch Subunit. While not finalized, the policies in the draft Subarea Plan are generally applied to projects within Santee.

~~The property is located within an MHPA area requiring 60% conservation in the City of Santee's draft MSCP Subarea Plan. Since~~Because the subarea plan has not yet been adopted, a major constraint to the development is that the City does not have take authority for coastal sage scrub, and impacts to this habitat would either require

processing a Section 10A permit with the USFWS, or obtaining a Biological Opinion during the Section 7 consultation between the USFWS and the U.S. Army Corps of Engineers (ACOE) during the processing of a Section 404 permit.

The project area is shown as a Hardline Project in a more recent MSCP draft Preserve Map V13 (dated October 25, 2022).

Sensitive Upland Vegetation Communities

Regulations within the draft subarea plan require that impacts to wetlands, vernal pools, and sensitive upland habitats shall be mitigated according to the Uniform Mitigation Standards unless the Property/Project is within a special overlay (Hardline, etc.). Because the project area is currently shown as a draft MSCP Hardline Project habitat mitigation is completed onsite with the development of less than 30% of the Property and Preserve 70% in perpetuity in a CE and managed by a HMP. ~~For example, mitigation for impacts to unvegetated waters, grasslands, chaparral and coastal sage scrub require either a 1:1 or 2:1 mitigation ratio depending on the habitat criteria and the type of impact. Non-native grassland mitigation ratios range from 0.5:1 to 1:1, unless the patch is isolated and under 1 acre. In that case, no mitigation is required.~~

Special-status Plant Species

Narrow endemic plant species, require maximum avoidance under the draft subarea plan. No more than a 5% gross loss of these populations can occur where impacts occur inside the preserve boundary. If avoidance is not possible, then transplantation of individuals or propagules (e.g., seeds, corms, bulbs, etc.) may be required by the agencies.

Migratory Bird Treaty Act and Nesting Raptors

Impacts to nesting birds are prohibited according to the Migratory Bird Treaty Act. Impacts to raptors and migratory birds during the nesting season would be mitigated by the limitation of clearing activities from February 1 through August 31 unless pre-construction surveys indicate that no nesting birds are located within 300 to 500 feet of the project impact area.

SURVEY METHODS

General biological surveys, an ACOE preliminary wetland delineation, as well as endemic, rare plant and animal protocol presence/absence and/or potential surveys were conducted to map the vegetation communities, wetlands/waters and to assess the presence or potential for presence of sensitive floral and faunal species. This report provides biological data and background information required for environmental analysis by the California Environmental Quality Act (CEQA). In addition, potential impacts/mitigation measures were analyzed using guidance and information ~~provided~~ potentially in the final draft City's MSCP subarea plan.

Prior to conducting the biological surveys, a thorough review of relevant maps, databases, and literature pertaining to biological resources was performed. Recent aerial imagery (Google Earth 2016), topographic maps (USGS 2010), soils maps (USDA, 2012), and other maps of the project site and immediate vicinity were acquired and reviewed to obtain updated information on the natural environmental setting. In addition, a query of sensitive species and habitat databases was conducted, including the California Natural Diversity Database (CNDDB; CDF~~G~~W ~~2012a~~), the California Native Plant Society Electronic Inventory (CNPSEI; CNPS ~~2012~~), and the Consortium of California Herbarium (Consortium 2012) applications, as well as a review of regional species lists produced by the USFWS (USFWS ~~2012a~~) and CDFW ~~(CDFW 2011, 2012a, CDFW 2012b, and 2012c)~~.

The pre-survey investigation also included a verification of whether or not the project site falls within areas designated as final or proposed USFWS Critical Habitat for federally threatened or endangered species (USFWS 2012b).The complete list of sensitive species (CNDDB) and habitats that have been previously recorded within the vicinity of the project site was compiled, and all recorded locations of species and other resources were mapped and overlaid onto aerial imagery using Geographic Information Systems (GIS) software. The CNDDB list of sensitive species included all database results for areas within the local USGS 7.5-minute topographic quadrangle.

Below is a summary of the survey types, date, times, temperature conditions, sky conditions, and wind speeds during the completed surveys for the Project.

SURVEY DETAILS

Date	Survey Type	Time	Conditions Temp (ºF), Wind (mph) begin- ~~and~~ end, Sky (cover)	Biologists
3-14-13	CAGN 1	0830-0930	52-68,1-2, clear	EL*
3-21-13	CAGN 2	0830-1000	61-65,0-2, 30% haze - clear	EL
3-28-13	CAGN 3	0815-0945	55-69,0-3, 25% haze - 25% haze	EL
4-2-13	QCB 1	1000-1200	61-65,0-2, clear	EL
4-8-13	General/Rare Bio, Wetland Delineation	0745-1430	57-75, 0-5, clear	MJ*
4-10-13	QCB 2	1245-1445	76-77,4-8, clear	EL
4-18-13	QCB 3	0900-1030	68-75,2-8, clear	EL
5-2-16	Update Initial Surveys	1030-1200	73-77, 2-5, clear	MJ
4-29-23	CAGN 1	0807-1200	70-74,2-8, 20% haze - clear	GH*
5-16-23	CAGN 2	0707-1200	60-78,2-5, 70% haze – 10% haze	GH
5-30-23	BUOW Assessment	1000-1115	61-61,0-3, 80% cover	MJ
5-31-23	CAGN 3	0607-1039	58-65,2-5, 100% haze	GH
6-8-23	Hermes Copper 1	1305-1435	70-72,0-3, 5% haze	MJ
6-15-23	Hermes Copper 2	1300-1430	71-72, 3-5, clear	MJ
6-22-23	Hermes Copper 3	1305-1435	70-70,0-3, clear	MJ
6-29-23	Hermes Copper 4	1300-1430	73-73,0-0, clear	MJ
7-6-23	Hermes Copper 5	1305-1435	73-74,0-1, clear	MJ
7-13-23	Hermes Copper 6	1305-1435	89-91,0-1, clear	MJ

*EL = Erik LaCoste - MJ = Mike Jefferson - GH = Garrett Huffman

~~Erik LaCoste (TE-027736-5), who is permitted by the U.S. Fish and Wildlife Service (USFWS) to conduct surveys for the coastal California gnatcatcher, conducted the 2013 monitoring surveys on the property. Mr. LaCoste conducted three protocol surveys, according to the USFWS gnatcatcher survey protocol.~~

~~Erik LaCoste (TE-027736-5), who is permitted by the U.S. Fish and Wildlife Service (USFWS) to conduct surveys for the Quino Checkerspot butterfly, conducted the 2013 monitoring surveys on the property. Mr. LaCoste conducted 6 protocol surveys, according to the USFWS QCB survey protocol (Table 2). All areas supporting *Plantago erecta* on site, as well as within approximately 200 feet were carefully searched for the presence or absence of QCB and/or QCB larvae.~~

BLUE senior biologist Michael Jefferson, a qualified Principal biologist and ACOE certified wetland delineator, completed the onsite general, rare, and endemic surveys as well as the protocol surveys for Hermes Copper (6), a protocol habitat assessment for the western burrowing owl (*Athene cunicularia hypogeal*) and the USACE protocol wetland delineation. On May 2nd, 2016 Mike completed a site survey to confirm the status of the site had not been significantly altered since the 2013 surveys. There were no changes to the structure of the habitat. The protocol Hermes Copper (*Lycaena hermes*) and burrowing owl surveys were completed in 2023.

Vegetation communities were assessed and mapped on a color aerial with topography flown in March 2013. Animal species observed directly or detected from calls, tracks, scat, nests, or other sign were noted. All plant species observed on-site were also noted, and plants that could not be identified in the field were identified later using taxonomic keys.

~~Prior to conducting the biological surveys, a thorough review of relevant maps, databases, and literature pertaining to biological resources was performed. Recent aerial imagery (Google Earth 2016), topographic maps (USGS 2010), soils maps (USDA, 2012), and other maps of the project site and immediate vicinity were acquired and reviewed to obtain updated information on the natural environmental setting. In addition, a query of sensitive species and habitat databases was conducted, including the California Natural Diversity Database (CNDDB; CDFG 2012a), the California Native Plant Society Electronic Inventory (CNPSEI; CNPS 2012), and the Consortium of California Herbarium (Consortium 2012) applications, as well as a review of regional species lists produced by the USFWS (USFWS 2012a) and CDFW (CDFW 2011, 2012a, CDFW 2012b, and 2012c).~~

~~The pre-survey investigation also included a verification of whether or not the project site falls within areas designated as final or proposed USFWS Critical Habitat for federally threatened or endangered species (USFWS 2012b).The complete list of sensitive species (CNDDB) and habitats that have been previously recorded within the vicinity of the project site was compiled, and all recorded locations of species and other resources were mapped and overlaid onto aerial imagery using Geographic Information Systems (GIS) software. The CNDDB list of sensitive species included all database results for areas within the local USGS 7.5-minute topographic quadrangle.~~

As part of the habitat survey, a wetland jurisdictional delineation was completed. Jurisdictional features were identified. The region received no significant rainfall within the last week before the surveys were conducted. Rainfall patterns were not atypical for that time frame of the surveys.

Delineated boundaries of all features identified within the study area were recorded using a 1” =100’ aerial photograph.

Wetland Delineation

BLUE’s methods for assessing local, state, and federal wetlands follow the guidelines set forth by the USACE in the *Arid West Manual* (USACE 2008b). The routine onsite determination method can be used to gather field data at potential wetland areas for most projects. Visual observations of vegetation types and hydrology are used to locate areas for evaluation. Then, at each evaluation area, several parameters are considered to determine whether the sample point is within a wetland.

Hermes Copper

The Hermes Copper (*Lycaena hermes*) is an extremely rare narrow endemic butterfly species. No regional protocols for Hermes copper currently exist. The larval host plant is spiny redberry (*Rhamnus crocea*) which occurs in coastal sage scrub and/or southern mixed chaparral. No regional protocols for Hermes copper currently exist, though the U.S. Fish and Wildlife Service (USFWS) may prepare protocols.

BLUEs' methods for completing protocol Hermes Copper surveys follow the guidelines set forth by the County of San Diego which prepared the Guidelines for Hermes copper to provide guidance for surveying for the butterfly, mapping habitat, assessing impacts, and mitigating for projects within the County's jurisdiction. They were revised in 2023 at the request of the USFWS based on information in the species status assessment and listing rule, and their review of 2022 survey reports utilizing the original protocol.

For purposes of surveying for Hermes copper habitat on project sites in the County's jurisdiction the vegetation is considered potential habitat for Hermes copper if it contains mature spiny redberry shrubs. All areas within 100 feet of spiny redberry shrub patches were surveyed. The surveyor lightly touched/brushed the spiny redberry shrubs and adjacent vegetation using butterfly nets or other gear to ensure Hermes copper are not overlooked, as they can be cryptic when still, and often do not leave a perch without a disturbance or physical vibration. If flight season surveys show that Hermes copper is not present in such habitat, the habitat will be considered potential habitat for Hermes copper.

Flight season surveys for Hermes Copper were conducted by qualified biologist Michael Jefferson. Per protocol, the dates of the flight season vary and can begin between mid-May and early-June, depending on elevation and rainfall, and can last until mid-July. The peak flight time has been reported as around June 10 for males and June 20 for females (Faulkner and Klein 2008); Marschalek and Klein (2010) reported peak abundance of adults ranging from May 25 to June 22 over four years. The flight season at lower elevations begins a few days earlier than the flight season at higher elevations. The elevation range for Hermes copper is from about 200 feet in the western part of the County to about 4,000 feet at Guatay in the eastern portion of the County.

Six weekly surveys, no more than one per week, from mid-May to mid-July are required to be conducted. Any observation of Hermes copper should be considered an existing population or colony rather than a migrant.

Surveys should be conducted when temperatures are between 70- and 95-degrees Fahrenheit, which is the range of temperature during which Hermes coppers generally fly. Surveys should not be conducted during adverse weather conditions, such as fog, drizzle, rain, or cloud cover greater than 25 percent, or during sustained winds greater than 15 miles (24 kilometers) per hour measured 4-6 feet (1.2-1.8 meters) above ground level. Surveys should be conducted at an average walking rate of 10-15 acres per hour.

Protocol surveys (6) for Hermes Copper were completed as a result of the Property supporting the butterfly's larval host plant, spiny redberry and their primary nectar source, California buckwheat (*Eriogonum fasciculatum*). The mature spiny redberry individuals observed onsite are located within the southern mixed chaparral and buckwheat within the coastal sage scrub. All appropriate habitat was surveyed per County protocol.

Burrowing Owl

A Burrowing Owl (*Athene cunicularia*; BUOW) habitat assessment was conducted in the survey area on May 30, 2023. The survey initiated at 10:00AM and ended at 11:15 AM. Weather conditions during the survey included clear skies, temperatures ranged from 61° to 61° Fahrenheit, and calm winds. The pedestrian-based habitat assessment was performed in accordance with The California Burrowing Owl Consortium *Burrowing Owl Survey Protocol and Mitigation Guidelines* (April 1993) and the MSHCP burrowing owl survey requirements to locate suitable owl habitat and potential nesting substrates. The habitat assessment followed the Burrowing Owl Survey Instructions for the Western Riverside County (County of Riverside 2006).

The habitat assessment (Phase 1) was performed by systematically searching for habitat that could potentially be utilized by burrowing owls (e.g., small mammal burrows, mounds, rubbish piles, ditches, earthen berms, unpaved fields, and fallow/ruderal fields). Pedestrian survey transects were spaced approximately 30 feet apart to allow for 100% visual coverage of the BSA. Suitable habitat was identified by the presence of low vegetation cover, presence of potential burrows, perch sites, and/or BUOW sign such as scat, tracks, pellets, or feathers (CDFG 2012). Fully developed parcels were deemed unsuitable and excluded from further assessment. All potential burrows were determined by burrow size, the presence of burrowing owls, pellets, prey remains, whitewash, or decorations.

The locations of all potential owl burrows and recent sign were recorded and mapped as GPS point locations. Surveys were conducted during weather that would not affect the ability to detect burrowing owls or their sign. The owl survey was conducted when weather conditions were conducive to observing active burrowing owls. The survey was not performed during rain or within five days of precipitation, high winds (> 20 mph), dense fog, or temperatures over 90 °F. Surveys were conducted within one hour before sunrise to two hours after sunrise to provide the highest detection probabilities.

California Gnatcatcher

Erik LaCoste (TE 027736-5) and Garret Huffman (TE 20186a-3.1), who are ~~, who is~~ permitted by the U.S. Fish and Wildlife Service (USFWS) to conduct surveys for the coastal California gnatcatcher (CAGN), conducted the 2013 and 2023 ~~monitoring~~protocol surveys on the property. Both Mr. LaCoste (2013) and Garret Huffman (2023) each conducted three protocol surveys, according to the USFWS gnatcatcher survey protocol.

Quino Checkerspot butterfly

Erik LaCoste (TE 027736-5),~~,~~ who ~~is~~ is permitted by the U.S. Fish and Wildlife Service (USFWS) to conduct surveys for the Quino Checkerspot butterfly, conducted the 2013 monitoring surveys on the property. Mr. LaCoste conducted 6 protocol surveys, according to the USFWS QCB survey protocol (Table 2). All areas supporting *Plantago erecta* on site, as well as within approximately 200 feet were carefully searched for the presence or absence of QCB and/or QCB larvae.

Due to a lack of observation(s) and subsequent low potential to occur onsite, no update/additional protocol QCB surveys are required.

REGULATORY BACKGROUND

The following sections summarize the regulations imposed on each type of jurisdictional feature potentially present onsite.

U.S. Army Corps of Engineers Regulated Activities

USACE-regulated activities under Section 404 of the Clean Water Act (CWA) involve a discharge of dredged or fill material into WoUS. A discharge of fill material includes, but is not limited to, grading, placing riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into WoUS. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing some drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

Waters of the U.S.

WoUS, as defined in the Code of Federal Regulations (CFR) title 33, section 328.3, include all waters or tributaries to waters, such as lakes, rivers, intermittent and perennial streams, mudflats, sand flats, natural ponds, wetlands, wet meadows, and other aquatic habitats.

Frequently, a WoUS (with at least intermittently flowing water or tidal influences) is demarcated by the ordinary high-water mark (OHWM), defined in CFR 328.3(e) as: *that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

Where an OHWM is present, waters may be defined as WoUS when connectivity is determined to be present.

Wetlands

According to the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Federal Interagency Committee for Wetland Assessment 1989), three criteria must be satisfied to classify an area as a jurisdictional wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology) (Environmental Laboratory 1987).

USACE will continue to assert jurisdiction over:

1. traditional navigable waters (TNWs) and their adjacent wetlands;
2. non navigable tributaries of TNWs that are relatively permanent (e.g., tributaries that typically flow year-round or have a continuous flow at least seasonally) and wetlands that directly abut such tributaries (e.g., not separated by uplands, berm, dike, or similar feature) (note: relatively permanent waters [RPWs] do not include ephemeral tributaries, which flow only in response to precipitation, and intermittent streams, which do not typically flow year-round or have continuous flow at least seasonally [e.g., typically three months]); and
3. non-RPWs if determined (in a fact-specific analysis) to have a significant nexus with a TNW, including non-navigable tributaries that do not typically flow year-round or have continuous flow at least seasonally, wetlands adjacent to such tributaries, and wetlands adjacent to but not directly abutting a relatively permanent non navigable tributary. Absent a significant nexus, jurisdiction is lacking.

Three criteria normally must be fulfilled in order to classify an area as a jurisdictional USACE wetland: (1) a predominance of hydrophytic vegetation, (2) the presence of hydric soils, and (3) the presence of wetland hydrology. Details of the application of these techniques are described below.

Hydrophytic Vegetation. The hydrophytic vegetation criterion is satisfied at a location if greater than 50% of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (USACE 1987). An *OBL indicator status* refers to plants that have a 99% probability of occurring in wetlands under natural conditions. A *FACW indicator status* refers to plants that usually occur in wetlands (67 to 99% probability) but are occasionally found elsewhere. A *FAC indicator status* refers to plants that are equally likely to occur in wetlands or elsewhere (estimated probability34 to 66% for each). The wetland indicator status used for this report follows the

National List of Plant Species that Occur in Wetlands: California (Region 0) (U.S. Fish and Wildlife Service 1988).

Hydric Soils. The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper 18inches of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors were evaluated using the *Munsell Soil Color Charts* (Kollmorgen Corporation 1975).

Wetland Hydrology. The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE 1987, 2008a, 2008b).

Assessment of Potential Non-Wetland Waters of the U.S.

Methods for the assessment of non-wetland WoUS was based on indicators for OHWM, following established criteria outlined in the *U.S. Army Corps of Engineers Wetlands Assessment Manual* (Environmental Laboratory 1987), *Regional Supplement to the Corps of Engineers Wetland Assessment Manual: Arid West Region* (USACE 2008a), and *A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States* (USACE 2008b).

All jurisdictional features within the study area were determined by the presence of OHWM indicators. This field guide presents a method for delineating the lateral extent of the WoUS in the Arid West using stream geomorphology and vegetation response to the dominant stream discharge. BLUE biologists used this guidance in the field to determine the OHWM for all potentially jurisdictional non-wetland waters.

The field guide describes physical evidence that should be used to ascertain the lateral limits of jurisdiction; generally, more than one physical indicator or other means for determining the OHWM is used.

The following physical indicators of OHWM were used in the field:

- Natural line impressed on the bank
- Shelving
- Destruction of terrestrial vegetation
- Presence of litter and debris
- Wracking
- Vegetation matted down, bent, or absent
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Bed and banks
- Water staining
- Change in plant community

Evaluation of SWRCB/RWQCB jurisdiction followed guidance from Section 401 of the CWA and follows the same jurisdictional areas as USACE, unless an isolated water is determined to be present. Isolated water features are not considered jurisdictional under USACE, but are still delineated using the OHWM or wetted area. Isolated water bodies are considered SWRCB/RWQCB jurisdictional under the Porter-Cologne Act.

Preliminary Jurisdictional Determination

Under RGL 08-02, dated June 26, 2008, USACE established an alternative to the approved JD process: the "preliminary JD." A preliminary JD is a non-binding written indication that there maybe WoUS, including wetlands, on a project site and identifies the approximate location of these features. Preliminary JDs are used when a landowner, permit applicant, or other affected party elects to voluntarily waive or set aside questions regarding CWA jurisdiction over a particular site, usually in the interest of allowing the landowner to move ahead expeditiously to obtain 404 authorization where the party determines that it is in his or her best interest to do so. A preliminary JD is not an official determination regarding the jurisdictional status of potentially jurisdictional features and has no bearing on approved JDs.

A preliminary JD cannot be used to confirm the absence of jurisdictional waters or wetlands, is advisory in nature, and cannot be appealed. It is considered "preliminary" because a recipient can later request an approved JD if one is necessary or appropriate.

Finally, although a preliminary JD may be chosen by the applicant, the district engineer reserves the right to use an approved JD where warranted. A preliminary JD is documented using the preliminary JD form, provided as Attachment 1 to RGP 08-02. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD treats all waters and wetlands that would be affected in any way except by the permitted activity as if they are jurisdictional. This report presents a preliminary jurisdictional determination.

2011 Draft Clean Water Act Guidance

On April 27, 2011, USACE and EPA issued draft guidance for determining jurisdiction under the CWA. The guidance supersedes the previous guidance from 2003 regarding *SWANCC* (68 Federal Register 1991–1995) and the 2007 *Rapanos* guidance.

This document reiterated the guidance issued under the *Rapanos* decision, asserting that the following waters are protected by the CWA:

- Traditional navigable waters
- Interstate waters
- Wetlands adjacent to either traditional navigable waters or interstate waters
- Non-navigable tributaries to traditional navigable waters that are relatively permanent (meaning they contain water at least seasonally)
- Wetlands that directly about relatively permanent waters

The guidance further clarifies the criteria for defining TNWs consistent with previous guidance. In addition, a significant nexus evaluation is required for the "other waters" category of the regulations (see item 3 in Section 2.1.1, above). The guidance divides these waters into two categories (i.e., those that are physically proximate to other jurisdictional waters and those that are not) and discusses how each category should be evaluated.

State Water Resources Control Board Regulated Activities/Regional Water Quality Control Board

In California, the SWRCB and nine Regional Water Quality Control Boards (RWQCB) regulate activities within state and federal waters under Section 401 of the CWA and the state Porter-Cologne Act. The SWRCB is responsible for setting statewide policy, coordinating and supporting the RWQCB efforts, and reviewing petitions that contest RWQCB actions. Each semi-autonomous RWQCB sets water quality standards, issues 401 certifications and waste discharge requirements, and take enforcement action for projects occurring within their boundary. However, when a project crosses multiple RWQCB jurisdictional boundaries, the SWRCB becomes the regulating agency for both of these acts and issues project permits.

Section 401 of the Clean Water Act

Section 401 of the CWA requires that any applicant for a federal permit for activities that involve a discharge to waters of the United States shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act.

Therefore, in California, before USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification or waiver from the RWQCB or SWRCB, as applicable. Under Section 401 of the CWA, the SWRCB/RWQCB regulates at the state level all activities that are regulated at the federal level by USACE. Therefore, SWRCB/RWQCB jurisdiction usually matches the jurisdictional boundaries for WoUS (mapped at the OHWM).

However, if waters are determined not to be WoUS, they may still be subject to SWRCB/RWQCB jurisdiction based on the Porter-Cologne Act.

Porter-Cologne Act

The RWQCB regulates activities that would involve "discharging waste, or proposing to discharge waste, within any region that could affect waters of the state" (California Water Code 13260[a]), pursuant to provisions of the state Porter-Cologne Act. Waters of the State (WoS) are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050 [e]). Such waters may include waters not subject to regulation under Section 404 (i.e., isolated features).

California Department of Fish and Game Regulated Activities

Under recently revised California Fish and Game Code, Sections 1600–1616, CDFW has the authority to regulate work that will substantially divert or obstruct the natural flow—or substantially change or use any material from the bed, channel, or bank—of any river, stream, or lake. CDFW also has the authority to regulate work that will deposit or dispose of debris, wastewater, or other material containing crumbled, flaked, or ground pavement that may pass into any river, stream, or lake. This regulation takes the form of a requirement for a Lake or Streambed Alteration Agreement and is applicable to all work involving state or local government discretionary approvals.

Section 1602 of the California Fish and Game Code

The California Fish and Game Code mandates that it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity.

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks and/or (2) existing fish or wildlife resources. Furthermore, CDFW jurisdiction is often extended to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that function hydrologically as part of the riparian system. Historical court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear but re-emerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdictional.

EXISTING CONDITIONS

A. Surrounding Land Use

The proposed project area is located in the City of Santee, in eastern San Diego County, California (Figures 1-3). The site located east of Mission Trails Regional Park, which is a designated ~~open space~~CE area, and is bound to the north by Mesa Height Road. Housing developments border the northern (Mesa Height Road development) and eastern (Clifford Height Road development), Property Lines (PL) and undeveloped land occurs to the south and west. Overall, the property to the north within and immediately surrounding the proposed project development area are heavily developed and the area adjacent to the southern PL is undeveloped.

B. Topography and Soils

The Property is dominated by a ridgeline running east-west with south facing slopes in the southern portion of the property, north facing slopes in the center of the property and a gradually sloping/flat area in the northern portion. The northern, flat and disturbed portion of the property appears to have been previously utilized as a grazing or agricultural area. There is an ephemeral drainage channel supporting riparian habitat running along the eastern and northern property line.

Soil types belonging to three series are reported as occurring on-site including the Diablo, Redding and the terrace escarpment series (Bowman 1973). The Diablo series consist of well-drained, moderately deep to deep clays derived from soft, calcareous sandstone and shale. These soils occur on uplands and have slopes of 2 to 50 percent. Soil type Diablo clay, with 15 to 30 percent slopes is reported as occurring on-site.

Soils in the Redding series consist of well-drained, undulating to steep gravelly loams that have a gravelly clay subsoil and a hardpan. These soils formed in old mixed cobbly and gravelly alluvium. Two soil types from the Redding series are reported as occurring on-site including: Redding gravelly loam, 2 to 9 percent slopes and Redding cobbly loam, dissected, 15 to 50 percent.

Also occurring on-site are terrace escarpment. Terrace escarpments consists of steep to very steep escarpments and escarpment-like landscapes. The terrace escarpments occur on the nearly even fronts of terraces or alluvial fans.

C. Botany

During the biological surveys, a total of seven vegetation communities were mapped on-site: Diegan coastal sage scrub, southern mixed chaparral, southern willow scrub, jurisdictional unvegetated ephemeral drainage,

disturbed habitat, native and non-native grasslands. Table 1 summarizes the acreage of each land cover type and Figure 4 depicts their location.

Numerous species and habitat surveys were completed onsite. Each time an onsite survey was conducted, the vegetation map was updated and refined so the habitat/vegetation maps and acreages are not all the same. This report, not the previously completed species specific survey reports, states the most recent and accurate vegetation mapping.

TABLE 1
PLANT COMMUNITIES

Plant Community	Tier	Acres
Diegan Coastal Sage Scrub	II	6.36
Native Grasslands	I	1.24
Southern Mixed Chaparral	III	8.84
Willow Scrub, Disturbed (CDFW jurisdiction)	I	0.24
Ephemeral Unvegetated Channel (CDFW jurisdiction)	I	309 linear feet/0.02
Non-Native Grasslands	III	8.7
Disturbed habitat	IV	1.97
TOTAL		27.35

Diegan Coastal Sage Scrub

Diegan coastal sage scrub is characterized by low, woody subshrubs that grow to approximately 1 meter in height (Holland 1986). Common dominant species include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*) and white sage (*Salvia apiana*).

Onsite, the majority of Diegan coastal sage scrub is dominated by California sagebrush, black sage, laurel sumac, San Diego sunflower (*Viguiera laciniata*) and California buckwheat. A single California endangered plant species was observed onsite, within the coastal sage scrub, California Jewelflower. Other plant species associated with coastal sage scrub vegetation on-site included narrow-leaved bedstraw (*Galium angustifolium*), deerweed, toyon (Heteromeles arbutifolia), spiny redberry (*Rhamnus crocea*), white flowering currant (*Ribes indecorum*). The understory of this vegetation community was not well-developed; some observed herbaceous plants include golden yarrow (Eriophyllum confertiflorum), miners lettuce (*Claytonia perfoliata*) and other herbaceous perennials.

Native Grassland

Native grasslands, also referred to as Valley needlegrass grassland, typically supports extensive stands of purple needlegrass (*Stipa pulchra*) as the indicator species for its presence. A limited association of herbaceous perennials and annuals are often potentially found growing among the clumps of needlegrass – including several rare species.

Onsite, the native valley needlegrass habitat is located in varying size patches within the non-native grasslands throughout the northern portion of the site. This community is dominated by purple needlegrass and foothill needlegrass and contains some wild oats and brome grasses as well as native grassland forbs.

Willow Scrub (disturbed)

Willow Scrub (WS) is a riparian community dominated by broad-leafed, winter-deciduous trees such as willows (Salix spp.), and often scattered with Fremont cottonwoods (*Populus fremontii*) an*d sycamores (Platanus racemosa*). This plant community is typically found along major drainages but also occurs in smaller drainages. The density of the willows typically prevents a dense understory of smaller plants from growing. The representative species typically grow in loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. This community requires repeated flooding to prevent succession to a community dominated by sycamores and cottonwoods.

Onsite, the 0.24 acres of disturbed Willow Scrub (WS) habitat is located within the northern limits of the property (channel/habitat is located on the Property Line; half onsite and half offsite) and is regarded as jurisdictional waters/wetlands. The ephemeral storm event flows are fed onsite from a pipe extending from the residential development to the east. The disturbed willow scrub habitat supports the typical willow species but is supporting a high percentage of Broom Baccharis (*Baccharis sarothroides*). Due to a lack of appropriate hydrology resulting from the surrounding development, the wetland habitat is not thriving and is in decline. ~~The~~ There is no willow thicket or overstory/understory structure and as a result, the area is not of high enough quality or large enough area to support potential sensitive/rare species of birds (e.g., Vireo). No additional ~~species specific~~species-specific protocol surveys were ~~conducted~~ recommended or completed within the willow scrub.

Ephemeral Channel

The observed ephemeral water course, which conveys flows from the offsite development to the east are out-letted into the Property at the property line out of a concrete box. The ephemeral flows continue to the west, weaving on and off of the Property, in the intermittent channel until the channel dissipates after a total length of approximately 309 linear feet, with an average width of 2.5 feet; totaling 0.02 acres.

Where the channel leaves the Property, it appears to be contained within an excavated cut, which was then filled with concrete and asphalt debris. Southwest of the northern terminus of Tyler Street is the terminus of the flood control brow ditch system put in place for the adjacent residential development and the Tyler Street cul-de-sac.

Southern Mixed Chaparral

According to Holland (1986), southern mixed chaparral consists of broad-leaved sclerophyll shrubs, 2-4 meters tall, forming dense, often impenetrable vegetation dominated by scrub oak, chamise (*Adenostoma fasciculatum*) and any one of several taxa of manzanita (*Arctostaphylos* sp.), and lilac (*Ceanothus* sp.). This vegetation community occurs on the coastal foothills of San Diego County and Northern Baja California, usually below 3,000 feet above MSL. Usually there is little or no understory vegetation and often there is considerable accumulation of leaf litter. Occasionally southern mixed chaparral will have patches of bare soil. Other plants observed on-site included white flowering currant (*Ribes indecorum*), redberry (*Rhamnus crocea*) and poison oak (*Toxicodendrum diversiloba*).

Southern mixed chaparral accounts for approximately 8.84 acres of the proposed north facing slopes of the Property (north of and below the ridge line).

Non-native Grassland

Non-native grassland is described by Holland (1986) as having dense to sparse cover of non-native annual grasses that grow to approximately 1.5 ft. in height. Non-native grassland on the project site is dominated by slender wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail (*Bromus madritensis*), with the occasional native grassland forb, native foothill needlegrass (*Nassella lepida*), and purple needlegrass (*Nassella pulchra*).

Onsite, the non-native grassland comprises approximately 8.7 acres of the Property and is located on the low angle slopes in the area that appears to have been historically disked and utilized for agriculture and/or grazing, etc. Numerous paths and grading scars run through this portion of the Property.

Disturbed Habitat/Historic Agriculture

Disturbed lands, totaling 1.97 acres, consists of historically cleared native/natural habitats, is the dominant habitat type in the Project footprint and onsite, generally. The plant community generally consists of mustard (ssp.), non-native grasses, Russian thistle (Salsola tragus) and prickly lettuce (*Lactuca serriola*). Due to the general impacts to the soils structure and tilling, there is no herbaceous layer present. This area supports a dirt road traversing the slope, up to the ridge line, and indications of historic grading, dumping and off-road driving access.

D. Zoology

Overall, the property provides a moderate to high overall value habitat for wildlife species. A complete list of wildlife species observed onsite is included as Appendix B.

1. Birds

Native and non-native vegetation communities provide habitat for numerous species of resident and migratory birds. A number of common avian species breed within sage scrub and chaparral habitats, and forage among the leaf litter in the vegetative understory. Rocky outcrops, particularly on undisturbed slopes or peaks can provide significant perching or roosting sites for raptors; and grasslands and agricultural lands located adjacent to woodland areas provide significant foraging habitat for resident, wintering and migrant raptors. Avian diversity and abundance is substantial within riparian and oak woodland habitats. These habitats are comprised of several horizontal niches including canopy, shrub, herb, and ground, which provide a network of valuable roosting, foraging and breeding areas for birds. Quality avian habitat within the Cities is concentrated where the vegetation is less disturbed and provides habitat connectivity; however, the various creeks and tributaries within the City also provide some measure of habitat connectivity, and potential avian breeding and foraging areas.

Bird species observed on-site are typical for the existing habitat types and surrounding development The mature disturbed willow scrub, and on-site native habitats offer areas for cover, foraging, and potential nesting for avian species.

During the 2013 ~~Protocol~~ CAGN protocol surveys, the same pair (2) of gnatcatchers was observed on the ridgeline and on the south facing slope during all three surveys (Figure 5). In addition to the gnatcatcher pair, a cactus wren

(*Campylorhynchus brunneicapillus*) pair was observed on the south facing slope (on all three surveys) and Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) were observed on the first and second surveys on the ridgeline area.

During the 2023 CAGN protocol surveys, gnatcatchers were observed six times in the southern-most portion of the property (south side of ridgeline).

Several other bird species were within the project area during biological surveys. Most species were observed in association with Diegan coastal sage scrub habitat or were seen flying overhead. These species included Bewick's wren (*Thyromanes bewickii*), California towhee (*Pipilo crissalis*), California quail (*Callipepla californica*), wrentit (*Chamaea fasciata*), Cooper's hawk (*Accipiter cooperii*), and red-tailed hawk (*Buteo jamaicensis*).

The disturbed wetland willow scrub habitat does not support quality habitat and is an isolated pocket of willows persisting as a result of ephemeral water flowing from the stormwater pipe in the east. Due to the low quality of the disturbed willow scrub habitat (sparse dying trees, no understory structure, no connectivity to appropriate habitat) in the disturbed channel it is determined that there is no potential for least Bell's vireo (*Vireo bellii pusillus*, federally and state endangered) to occur. No impacts to the willow/ephemeral drainage habitat are proposed (area to be conserved and maintained in perpetuity). As a result, no impacts to vireo are proposed. No additional surveys are recommended.

2. Mammals

Without trapping, the presence of mammal species must be discerned through habitat suitability, species range and biological records. Many mammals are nocturnal and secretive, and indirect signs for a number of species, particularly rodents, can be similar. Small mammal species typically occur in sage scrub, chaparral, grasslands and agricultural/disturbed areas, and several of these species will intermittently use riparian and woodland habitats for foraging and cover. Various species of bats will also forage in grasslands and woodland habitats. Larger mammals often require greater blocks of connected habitat for hunting and travel within their range. Quality habitat for small mammal species is generally located throughout the study area, but as with reptiles, small remaining patch size can undercut the ability of some species populations to survive in ~~open space~~CE.

Mammal species that were detected or potentially occuring on-site included California ground squirrel (*Spermophilus beecheyi*) and Audubon's cottontail (*Sylvilagus audubonii*). Observations of nests, tracks and scat, provided indicators of the presence of additional mammal species including woodrat (*Neotoma sp.*), coyote (*Canis latrans*), and southern mule deer *(Odocoileus hemionus fuliginata*).

3. Reptiles

Numerous species of lizards and snakes use rock crevices for cover within sage scrub and open chaparral habitat, and feed on small insects and insect larvae among the leaf litter. Other species are found in grasslands and agricultural/disturbed land, or in riparian areas and hunt small rodents. Quality reptilian habitat, primarily consisting of sage scrub, rocky outcrops, chaparral and oak woodland, is located onsite.

Four reptile species were observed, including Belding's orangethroat whiptail (*Cnemidophorus hyperythrus beldingi*), western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), and San Diego horned lizard (*Phrynosoma coronatum blainvillei*).

4. Amphibians

Amphibians typically occur in riparian habitats with peripheral upland vegetation. Riparian ecosystems often provide temporary ponding water used as breeding habitat by various amphibious species, as well as abundant vegetation for cover and foraging. Amphibians will also create burrows in adjacent upland habitats, such as sage scrub and non-native grasslands, where they will aestivate (or spend time in a dormant state, similar to hibernation). Amphibian species known or with a potential to occur in the San Diego region include the garden slender salamander (*Batrachoseps major*), arboreal salamander (*Aneides lugubris*), western toad (*Bufo boreas*), California chorus frog (*Pseudacris cadaverina*), Pacific chorus frog (*Pseudacris regilla*), and the bullfrog (*Rana catesbeiana*), a non-native species.

No amphibians were observed the time of the surveys, no standing or running water was present. Therefore, depending on the storm water flows, appropriate habitat may occur onsite.

5. Invertebrates

Limited cohesive information is available to provide a thorough description of the many invertebrate fauna found within the City and region; however, the range of butterfly species and vernal pool branchiopods has been fairly well documented within the City. Butterfly species occur in a wide range of habitats; including sage scrub and chaparral, open areas devoid of substantial shrub cover such as non-native grasslands and agricultural/disturbed land, as well as more densely vegetated areas such as riparian habitat and oak woodlands. These habitats provide various host-specific plants suitable for larval development, adult nectar resources; as well as topographical features, such as hilltops or open ground that aid in courtship and mating. In contrast, vernal pool branchiopods are strongly restricted to vernal pool habitat, and consequently, many of these species are considered to be sensitive.

No vernal pools were observed onsite and a result, no sensitive or rare species of vernal pool specific invertebrates are expected to occur onsite.

No QCB was observed. Several butterfly species were detected on-site, including: Sara orangetip (*Anthocaris sara*), Cabbage white (*Pieris rapae*), Anise swallowtail (*Papilio zelicaon*), Pale swallowtail (*Papilio eurymedon*), and funereal duskywing (*Erynnis funeralis*).

E. Sensitive Biological Resources

1. Sensitivity Criteria

The subject property is located within the City of Santee draft Sub-Area Plan (SAP), draft Multiple Species Conservation Program (dMSCP) and draft Multiple Habitat Planning Area (MHPA). In addition, the property is identified as a Hardline Project in a more recent draft Preserve Map V13 (City, dated October 25, 2022). The sensitive resources on-site are required to be protected, preserved, and where damaged, restored according to the CEQA and draft MSCP Regulations. The proposed project must be designed to meet or exceed those regulations.

State and federal agencies regulate sensitive species and require an assessment of their presence or potential presence to be conducted on-site prior to the approval of any proposed development on a property. For purposes of this report, observed species will be considered sensitive if they are: (1) listed or proposed for listing by state or federal agencies as threatened or endangered; (2) on List 1B (considered endangered throughout its range) or List 2 (considered endangered in California but more common elsewhere) of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994); (3) within the Multiple Species Conservation Program (MSCP) list of species evaluated for coverage or list of narrow endemic plant species; or (4) considered fully protected, sensitive, rare, endangered, or threatened by the State of California and Natural Diversity Data Base (NDDB), or other local conservation organizations or specialists. California fully protected is a designation adopted by the State of California prior to the creation of the State Endangered Species Act and is intended as protection from harm or harassment.

Noteworthy plant species are considered to be those which are on List 3 (more information about the plant's distribution and rarity needed) and List 4 (plants of limited distribution) of the CNPS Inventory. Sensitive habitat types are those identified by the NDDB, Holland (1986) and/or those considered sensitive by other resource agencies.

Determination of the potential occurrence for listed, sensitive, or noteworthy species are based upon known ranges and habitat preferences for the species (Zeiner et al.; Skinner and Pavlik; Reiser); species occurrence records from the NDDB (State of California); and species occurrence records from other sites in the vicinity of the project site.

2. Sensitive Plant Communities and Habitats

During the biological surveys, a total of seven vegetation communities were mapped on-site; of which 6 are sensitive (Disturbed Habitat not considered sensitive): Diegan coastal sage scrub, southern mixed chaparral, southern willow scrub, jurisdictional unvegetated ephemeral drainage, native and non-native grasslands.

3. Narrow Endemic and Sensitive Plant Species

Thirty -one sensitive plants were assessed for the potential to occur onsite and are discussed in Appendix C. ~~No~~ A single endangered, sensitive or narrow endemic species ~~were~~ was observed onsite; Jewelflower (*Caulanthus californicus; CDFW Endangered*). The literature search indicated the potential occurrence of numerous sensitive plant species in the vicinity of the project site including: San Diego Ambrosia (*Ambrosia pumila*), San Diego goldenstar (*Bloomeria clevelandii*) and San Diego viguiera (*Bahiopsis laciniata*).

San Diego Ambrosia Federal status: Endangered State status: None Narrow Endemic

San Diego ambrosia (*Ambrosia pumila*), a member of the Asteraceae, or sunflower family, is a perennial herb that expands by rhizomes and grows in height to approximately two feet. The stems are green to straw colored, with short, dense hairs. The leaves of this plant are softly gray-white and hairy. The flowers of San Diego ambrosia grow in staminate and pistillate heads that bloom between May and September. This species occurs in chaparral, coastal scrub, valley and foothill grassland, and vernal pools. It is also known to occur in disturbed sites. Many occurrences of this plant have been extirpated in San Diego, where it is threatened by continued development (CNPS 2001).

San Diego Ambrosia was not detected during biological surveys. Although appropriate habitat for this species occurs on-site, this species would have been detected if present. Therefore, San Diego Ambrosia is not expected to occur on-site.

San Diego goldenstar (*Muilla clevelandii*), a CNPS list 1B species and San Diego sunflower (*Viguiera laciniata*), a CNPS List 4 plant species were observed on-site (CNPS 2001). Plant species afforded the list 1B category are rare throughout their range. All species within this category are judged to be vulnerable under present circumstances or to have a high potential for becoming so (CNPS 2001). All of the plants constituting List 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) of the CDFG Code, and are eligible for state listing (CNPS 2001). Plant species afforded the list 4 category are of limited distribution (CNPS 2001). San Diego goldenstar and San Diego sunflower are not considered endangered or threatened by state or federal resources agencies.

a. Observed

Three sensitive plant species were observed onsite. The first is California Jewel flower (*Caulanthus californicus*), a California endangered plant species, was observed in the CSS on the south side of the ridgeline. In addition, two~~A single~~ plants listed as sensitive by the MSCP (rare, sensitive, narrow endemic, etc.) ~~was~~ were observed onsite. Within the onsite chaparral, San Diego Viguiera (*Bahiopsis laciniata*) was observed and within the CSS, barrel cactus (*Ferocactus viridescens*; CRPR 2B.1) was observed.~~.~~

In addition, dwarf plantain (*Plantago erecta*) was discovered. This plant is the host plant for the endangered Quino checkerspot butterfly (*Euphydryas editha quino*). Due to the presence of the host plant on-site, the potential for the site to support the butterfly was evaluated (USFWS protocol surveys) with negative results.

b. Not Observed

Several other sensitive species are known to occur in the vicinity of the project site. However, because they were not observed onsite during the surveys, these species are not considered as potentially occurring onsite based on the historical and ongoing uses, and surrounding development. For a complete list as to the potential occurrence of all Sensitive Plants Observed or with the Potential to Occur, see Appendix C.

4. Sensitive Wildlife

Animal species (wildlife) are considered sensitive if they have been listed as such by federal, state resource agencies, or local jurisdiction. The California Department of Fish and Game (CDFG) publishes comprehensive lists for sensitive plants and animals through the California Natural Diversity Database (CNDDB; CDFG 2016). The CDFG also publishes the CNDDB RareFind, a computerized inventory of information on the location and condition of California's rare, threatened, endangered, and sensitive plants, animals, and natural communities. Other sensitive species include State Protected Species and State Species of Special Concern.

The literature search indicated the potential occurrence of two sensitive wildlife species in the vicinity of the project site including the federally and state endangered least Bell's vireo (*Vireo bellii pusillus*), and federally threatened coastal California gnatcatcher (*Polioptila californica californica*).

Due to the presence of appropriate habitat and patches of *Plantago erecta*, USFWS protocol surveys for the Quino Checkerspot Butterfly (QCB; *Euphydryas editha quino*) were completed on the approximately 27.35-acre property.

Due to the presence of appropriate habitat, Diegan coastal sage scrub on-site, two rounds of focused USFWS protocol surveys (in 2013 and 2023) for the gnatcatcher were conducted. Both were positive for CAGN. ~~Due~~ As stated, due to the disturbed/isolated nature of the disturbed ~~southern~~ willow scrub on-site, the federally and state endangered least Bell's vireo was not observed onsite during the general species surveys, and is not expected to occur on-site.

Several sensitive wildlife species, afforded the California Species of Special Concern were observed on-site. These species included: coastal California Gnatcatcher (CAGN), San Diego cactus wren, and southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*). A complete list and explanation as to the potential occurrence of all Sensitive Wildlife Observed or with the Potential to Occur is described in Appendix D.

a. Observed

California Gnatcatcher Federal Status: Threatened State Status: Species of Special Concern

The coastal California gnatcatcher (*Polioptila californica californica*) is a small gray songbird that resides in coastal sage scrub plant communities. It is a recognized subspecies of the California gnatcatcher (*Polioptila californica*) which has a greater geographical coastal distribution. The coastal California gnatcatcher is endemic to coastal southern California and northwestern Baja California, Mexico. The present distribution of the subspecies includes Los Angeles, Orange, Riverside, and San Diego counties. The southern limit of the coastal California gnatcatcher coincides with the distributional limit of coastal sage scrub.

The gnatcatcher occupies coastal sage scrub plant communities dominated by California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), various species of sage (*Salvia* spp.), California encelia (*Encelia californica*), and various species of cactus as well as intermixed elements of chaparral communities such as laurel sumac (*Malosma laurina*) and common chamise (*Adenostoma fasciculatum*). Within the overall range of suitable habitat, patches dominated by California sagebrush and California buckwheat are preferred over communities with a greater percent composition of sage, chamise or other sage scrub elements. Gnatcatcher population declines have been attributed to coastal sage scrub habitat destruction, fragmentation and modification. Degradation of approximately 90% of suitable habitat has occurred as a result of urban and agricultural development prior to the early 1980's (Westman 1981, 1987; Barbour and Major 1977).

Onsite, the same pair (2) of gnatcatchers was observed on the ridgeline and on the south facing slope during all three surveys (Figure 5). In addition, during the QCB surveys, on the 4/10/13 survey, the California gnatcatcher nest with 4 eggs was observed on the ridgeline in a California sagebrush adjacent to the dirt trail. In 2023, a total of 6 CAGN were observed within the CSS along and below the ridgeline.

San Diego Cactus Wren Federal Status: None State Status: Species of Special Concern

The San Diego cactus wren is an uncommon and localized resident of the County. This bird is recognized by its broad white eye stripe and densely spotted breast. The tail is barred and white tipped, usually not cocked upward. The primary habitat for the cactus wren is the coastal lowlands of the region. Additionally, they are restricted to

thickets of *Opuntia* cactus in Diegan coastal sage scrub. Once a widespread and common resident of San Diego the cactus wren today has been threatened by urbanization of the coastal mesas and hillsides formerly vegetated with sage scrub and cactus thickets.

A cactus wren (*Campylorhynchus brunneicapillus*) pair was observed on the south facing slope (on all three of the first round of CAGN surveys).

Cooper's Hawk Federal Status: None State Status: Species of Special Concern
The Cooper's hawk (*Accipiter cooperii*), a member of the Accipiter family is approximately 16.5 inches in length and has a wing span of 31 inches (Sibley 2000). This medium sized hawk can be described as having a streaked rufous breast, a relatively large head, and a long tail. This bird species can be found in oak woodlands and in riparian habitats. The diet of this species consists of small mammals, birds, lizards, snakes, amphibians, and large insects near riparian vegetation and near patchy, wooded areas (Ehrlich er al. 1988). However, beginning in the 1980's, the Cooper's hawk adapted to nesting in eucalyptus trees and other ornamental tree species in urban areas (San Diego Natural History Museum 2002).

The Cooper's Hawk was observed over the ridgeline during biological surveys of the project site performed by BLUE.

Southern California Rufous-Crowned Sparrow Federal Status: None State Status: Special Concern Species
The Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) can be described as heavy and stocky (13-15 cm), brown songbird with a fairly long tail (Sibley 2000). Other distinguishing characteristics include a plain gray breast, a distinct pale malar, and a rufous crown which gives it its name (Sibley 2000). This species can be found in coastal sage brush and grassy openings on rocky hillsides, often in pairs (Unitt 1984). The rufous crowned sparrow diet consists of insects, seeds, and buds (Ehrlich et al. 1988). The decline of this species can be attributed to the loss of suitable habitat as a result of urban development.

During the 2013 CAGN protocol surveys, Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) ~~were~~ was observed on the first and second surveys on the ridgeline area.

b. Not Observed

Numerous sensitive/rare/endemic species are listed as potentially occurring in the area due to potential high quality ~~wqetland~~wetland habitat and vernal pool habitat in the area. No wetland habitat suitable for the sensitive ~~specioes~~species is present onsite, and no vernal pools or the species that are typically found within and adjacent to vernal pools (identifying species) were observed. Due to the lack of appropriate wetland and vernal pool habitat, these species are not expected to occur. The completed USFWS protocol surveys were negative for the onsite presence of QCB, burrowing owl and Least bell's vireo.

Least Bell's Vireo (FE, SE, Covered Species)
Least Bell's vireo (*Vireo bellii pusillus*) is a subspecies of the North American song bird Bell's vireo (*Vireo bellii*). Least Bell's vireo is a migratory species that spends its winters in Mexico and returns to southern California as a summer resident. Least Bell's vireo can be found in the region during breeding season which is from March to

August. The decline of this species is predominately due to brood parasitism by brown-headed cowbirds (Molothrus ater) (Kus, 2002). They breed locally in willow riparian thickets with good over and understory vegetation.

The observed disturbed willow habitat, the vegetation within the ephemeral drainage area, does not support a willow thicket and does not have overstory or understory, as required by Vireo. Riparian vegetation suitable for Least Bell's vireo occupation is not observed onsite/in the area and as a result, Vireo have a low potential to occur.

Burrowing Owl (*Athene cunicularia*; SSC, Covered Species)
Burrowing owls are crepuscular small ground-dwelling owls with a round head and no ear tufts. Typical habitat for this species includes open, dry grasslands, agricultural fields, sparse shrub lands, as well as developed areas with sufficient food sources. Common burrowing mammals that are associated with burrowing owls are ground squirrels, prairie dogs and badgers. This species was not observed during habitat assessment surveys; however suitable grassland habitat was noted to be present onsite and within the Project footprint. Thus, the potential for this species to be within the Proposed Project survey area is moderate.

San Diego Horned Lizard Federal Status: None State Status: Species of Special Concern
The San Diego horned lizard (*Phrynosoma coronatum blainvillei*) can be described as having projecting scales on the dorsal surfaces of the body and is characterized by two dagger like horns at the back of its head. This species can grow to be between 2 ½ to 4 inches in length and can be yellowish, brown, reddish or gray (Stebbins 1985). The San Diego horned lizard occurs in a variety of habitats including, scrubland, grassland, coniferous forests, and broadleaf woodland. The decline of this species can be attributed to the rapid development of the coast.

Appropriate habitat for this species is present onsite and this species has a moderate to high potential to occur onsite.

Belding's Orange-throated Whiptail Federal Status: None State Status: Species of Special Concern
The Belding's orange-throated whiptail can be identified by its five light stripes at mid-body and a mid-dorsal stripe usually forked at both ends. The body of this long-tailed lizard is yellowish white below, often with gray or bluish slate on belly, more or less washed. Adults with bright reddish orange in adults; throat and chest especially so in breeding males (Stebbins 1985). This species is found within coastal (Diegan) sage scrub and mixed chaparral habitats where they intermix with open sandy areas.

Appropriate habitat for this species is present onsite and this species has a moderate to high potential to occur onsite.

Hermes Copper (*Lycaena hermes*) Federal Status: Threatened State Status: None
Hermes copper butterfly (Hermes) adults are active May through July, which is when females deposit single eggs exclusively on their host plant, *Rhamnus crocea* shrubs (spiny redberry), in coastal sage scrub and chaparral vegetation. Hermes eggs remain in a period of suspended development (diapause) during the late summer, fall, and winter, typically on the host plant. The butterfly's primary nectar source is the shrub California buckwheat. The USFWS now considers there to be 98 (95 in the U.S.) known historical or existing Hermes copper butterfly

occurrences in the U.S. and northwestern Baja California, Mexico. Twenty-six occurrences are determined or presumed to be present still, 56 are presumed to no longer be present, and 16 are permanently gone.

The property is outside of the Critical Habitat area and located within the portion of Hermes copper butterfly's range exempt from take prohibitions under section 9(a)(1)(B) of the Endangered Species Act (Figure 3, [Attachment B] County of San Diego Guidelines for Hermes Copper (*Lycaena hermes*). Appropriate habitat for this species is present onsite and this species has a moderate to high potential to occur onsite.

Quino Checkerspot Butterfly Federal Status: Endangered State Status: None
The Quino checkerspot butterfly (*Euphydryas editha quino*) is known to occur in sunny openings within chaparral and coastal sage shrublands in portions of Riverside and San Diego counties, California, and northwestern Baja California, Mexico (Federal Register 1997). This species has been threatened by habitat loss and degradation as a result of grazing, urban development, fire management, excessive collection and general human disturbance (Federal Register 1997).

The checkerspot's primary larval hostplant, dot-seed plantain (*Plantago erecta*), is generally small, growing to between approximately 3 and 30 centimeters in height (Hickman 1993). It is easily displaced by non-native species that invade following disturbance from disking, grading or grazing (Federal Register 1997). Other known larval host plants include Chinese houses (*Collinsia concolor*), snapdragon (*Antirrhinum coulterianum*) and Indian paint brush (*Castilleja exserta*).

Appropriate habitat for this species is present onsite but is not expected to occur as a result of the property being significantly outside of the QCB sightings area in the last 30 years and the lack of observations during the completed focused surveys.

5. Wildlife Movement Corridors

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by resource and conservation agencies.

The Property does not support a portion of a recognized or formal Corridor. The Property is one parcel removed (to the north) from the Mission Trail Preserve. The property supports high quality habitat and a ridgeline which is typical of corridors utilized by the local wildlife.

PROJECT IMPACTS

Of the 27.35 acres onsite a total of approximately 30% of the Property, totaling 8.41 acres, are proposed to be impacted by the Project Of this total, 6.78 acres of impacts are to sensitive habitat types and is considered significant. A total of approximately 19.45 acres (70%), are avoided and preserved onsite. The project meets the 30/70 development to preservation area ratio. Of the 27.35 acres onsite, a total of approximately 29% of the

Property, totaling 8.41 acres are proposed to be impacted by the Project. A total of 19.45 acres (71%) of habitat are avoided and to be preserved by the Project.

All mitigation is proposed to be completed ~~offsite with the purchase of mitigation credits~~onsite with the preservation, management and monitoring of the habitat within the created Conservation Easement (CE). A city/agency approved Habitat Management Plan for the CE is required prior to issuance of the grading permit.

Potentially significant direct impacts which require compensatory mitigation are considered those impacts to sensitive species/habitat(s) within the grading footprint and uplands Fuel Modification Zone (FMZ) 1 and 2 (upland only). FMZ 2 maintenance impacts within the CDFW jurisdictional habitat consists of removing dead material. As a result, the proposed FMZ 2 maintenance/impacts to the onsite willow scrub (impact neutral) is not considered a potentially significant impact and compensatory mitigation is not required. The unavoidable FMZ 1 and FMZ 2 maintenance impacts to the non-native grasslands within the existing approximately ~~0.91 acre~~0.91-acre Padre Dam 'sage scrub easement' are considered significant and both the loss of the habitat and 'sage scrub easement' area acreage is ~~proposed to be~~ mitigated for, see mitigation section.
~~No potentially significant biological impacts to the observed sensitive plant/wildlife species, coastal sage scrub, CDFW jurisdictional ephemeral channel and wetlands are proposed. All avoided habitat is to be placed within a created Open Space easement.~~

TABLE 5
Proposed Project - Significant Impacts

Plant Community	Tier	Acres	Grading/ FMZ 1 Impacts	Sage Easement Impacts	FMZ 2 Impacts	Impacts Total
Diegan Coastal Sage Scrub	II	6.36	0.0	0.0	0.0	0.0
Native Grasslands	I	1.24	0.59	0.01	0.01	0.61**
Southern Mixed Chaparral	III	8.84	0.14	0.0	0.0	0.14**
CDFW Willow Scrub (dist.)	I	0.24	0.0	0.0	0.24***	0.24***
CDFW Ephemeral Unvegetated Channel*	I	309 linear feet/0.02	0.0	0.0	0.0	0.0
Non-Native Grasslands	III	8.7	5.27	0.28	0.19	5.74**
Disturbed habitat	IV	1.97	1.63	0.02	0.03	1.68
TOTAL		27.35	7.63	0.31	0.47	8.41

** Area not included in habitat total, calculated as underlying habitat*
*** Significant Impact*
**** FMZ 2 – only dead material is to be removed. Not considered a CDFW significant impact.*

No potentially significant biological impacts to the observed sensitive plant/wildlife species, coastal sage scrub, CDFW jurisdictional ephemeral channel and wetlands are proposed. All avoided habitat (19.45 acres) is to be placed within a created CE easement to be maintained and managed in perpetuity.

TABLE 5a
Proposed Project – Avoided/Preserved Habitat

Plant Community	Tier	Acres	Impacts	Preserve	% Preserved
Diegan Coastal Sage Scrub	II	6.36	0.0	6.36	100%
Native Grasslands	I	1.24	0.61*	0.63	51%
Southern Mixed Chaparral	III	8.84	0.14*	8.70	98%
CDFW Willow Scrub (dist.)	I	0.24	0.24**	0.24	100%
CDFW Ephemeral Unvegetated Channel*	I	309 linear feet/0.02	0.0	309 linear feet/0.02	100%
Non-Native Grasslands	III	8.7	5.74*	2.96	34%
Disturbed habitat	IV	1.97	1.68	0.29	14%
TOTAL		27.35	8.41	19.45	

** Significant Impact*
*** FMZ 2 impacts not considered significant – Willow Habitat in FMZ 2 to be included in Preserve*

The biological impacts of the project were assessed according to guidelines set forth in the draft City MSCP Subarea Plan and CEQA. Mitigation is required for impacts that are considered significant under the Conservation Element of the Santee General Plan, draft Subarea Plan and CEQA guidelines.

A. City of Santee Significance Thresholds

Impacts to biological resources are assessed by City staff through the CEQA review process, and through review of the project's consistency with the City's draft MSCP Subarea Plan. Sensitive biological resources are defined by the draft MSCP as: *Lands that contain Natural Vegetation and/or Wetlands; and/or habitat occupied by Covered Species, other Listed Non-Covered Species, and/or Narrow Endemic Species.*

B. Plant Communities

Of the Property's 27.35 acres, approximately 8.41 acres are proposed to be impacted by the proposed Project. Impacts include those areas within the grading, landscaping and FMZ footprint. A total of 19.45 acres (approximately ~~70~~71%-) are to be avoided and preserved within the proposed ~~OS~~CE. Of this Preserve total, 0.34 acres are disturbed and not counted towards the draft MSCP habitat impact/preserve percentage calculation.

Of the seven habitat types observed onsite, 4 habitats are proposed to be impacted; with 3 of those habitat types regarded as sensitive. These impacted habitats include: Native Grasslands (sensitive), Southern Mixed Chaparral (sensitive), Non-Native Grasslands (sensitive), and disturbed habitat. All impacts to the 6.49 acres of sensitive habitat are considered significant and require mitigation.

C. Wildlife

Due to the low but extant quality of habitat within the proposed Footprint, some impacts to general wildlife associated with the property may occur through implementation of the proposed project. Birds have a high mobility and will most likely be displaced off the site during grading. Small mammals, amphibians, and reptiles

with low mobility may be inadvertently impacted during the clearing and/or grading of the site. Impacts on general wildlife are considered less than significant.

Typical potential indirect impacts to habitat and species associated with project implementation which includes a potential increase in night lighting, traffic, and litter and pollutants into adjacent wildlife habitat are not expected due to the previously existing active development onsite. Therefore, these potential indirect impacts are not expected to reduce the wildlife populations of the area below self-sustaining levels and are thus considered less than significant.

D. Multiple Species Conservation Program

1. Multiple Species Conservation Program

The draft Multiple Species Conservation Program (MSCP) is designed to identify lands that shall conserve habitat for federal and state endangered, threatened, or sensitive species. The draft MSCP is a plan and a process for the local issuance of permits under the federal and state Endangered Species Acts for impacts to threatened and endangered species. Also included in the MSCP are implementation strategies, preserve design, and management guidelines. The City prepared a draft subarea preserve plan to guide implementation of the MSCP Plan within its corporate boundaries.

2. Sensitivity Criteria

The assessment of the sensitivity of plant communities and species follows the guidelines presented in the draft MSCP. Preserve Lands are those that have been included within the City's draft MSCP Subarea Plan for habitat conservation. These lands have been determined to provide the necessary habitat quality, quantity, and connectivity to sustain the unique biodiversity within the ~~City~~city and the San Diego region.

~~Under the draft MSCP, upland plant communities have been divided into three tiers of sensitivity (Table 5-3; MSCP DRAFT, 2003). Sensitive Biological Resources are defined as lands that contain Natural Vegetation and/or Wetlands; and/or habitat occupied by Covered Species, other Listed Non-Covered Species, and/or Narrow Endemic Species. Impacts to Tier I, II, and III habitats will be mitigated pursuant to Habitat Loss Incidental Take (HLIT) mitigation standards contained in Table 5-3. Narrow Endemic Species, species that are highly restricted by their habitat affinities, or other ecological factors, and are listed in Table 5-4 of the draft Subarea Plan. Impacts to Narrow Endemic Species will be mitigated in kind at ratios of 1:1 to 3:1, depending on the sensitivity of the species.~~

All species listed by state or federal agencies as rare, threatened, or endangered or proposed for listing are considered to be sensitive biological resources. The habitat that supports a listed species or a narrow endemic species is also a sensitive biological resource.

Assessments for the potential occurrence of sensitive species are based upon known ranges, habitat preferences for the species, species occurrence records from the NDDB, and species occurrence records from other sites in the vicinity of the project site.

The site is physically suited to support the proposed development and as designed, with the mitigation measures implemented, the project will not significantly disturb or impact any environmentally sensitive lands or species.

Sensitive Plant Communities

The proposed Project will impact three (3) sensitive habitat types, requiring compensatory mitigation (proposed off-site), ~~totaling approximately~~totaling approximately 6.78 acres.

This is broken down as follows:

- 0.61 acres of Native Grasslands,
- 0.14 acres of Southern Mixed Chaparral and
- 5.74 acres of Annual Non-Native Grasslands

Mitigation is required to reduce these potentially significant impacts to a level below significance.

Sensitive Plants

The proposed Project will impact no sensitive plant species. All areas potentially supporting sensitive plant species (those areas/habitats/plants that support the potentially occurring sensitive species) will not be impacted. Those areas are proposed to be preserved and managed in perpetuity within the CE.

Sensitive Wildlife

The proposed Project will not significantly impact any sensitive wildlife species. ~~All a~~Areas potentially supporting sensitive wildlife species (those areas/habitats/plants that support the potentially occurring sensitive species) will not be impacted; e.g. the Plantago erecta observed onsite, outside of the impact footprint, that could support the Quino checkerspot butterfly, the disturbed willow scrub (low potential for Vireo), the CSS and spiny redberry (*Rhamnus crocea*), the primary nectar source and host plants for the Hermes copper butterfly and the coastal sage scrub which ~~potentially~~ supports the coastal California gnatcatcher. Those areas are proposed to be preserved and managed in perpetuity. Because no potentially occurring sensitive species appropriate habitat ~~is~~ were observed within the Project footprint, no additional surveys are required.

E. Jurisdictional and City Wetlands

CDFW jurisdictional wetlands and waters were observed onsite. Due to the ephemeral nature of the storm flows through the onsite channel, the USACE has no jurisdiction. The proposed development proposes FMZ 2 within the willow scrub area. This requires the removal of dead material – not living material. As a result, this not does not significantly impact the observed CDFW jurisdictional ephemeral drainage channel (unvegetated) or wetlands (willow scrub). All disturbed CDFW jurisdictional Willow Scrub habitat will be avoided and preserved. No substantial diversion or obstruction to the natural flow, or substantial change to the bed, channel, or bank, or if there is any use of material from the bed, channel, or bank, or if there is deposition of debris, waste, or other material where it may pass into a river, stream, or lake, is proposed. No substantial adverse effect on existing fish and wildlife resources is proposed. No additional CDFW permitting is required. No mitigation is required.

For the required FMZ 2 maintenance required within the disturbed willow scrub, the California Department of Fish and Wildlife (CDFW) is required to be notified. Based on this notification and other information, the Department determines whether a Lake and Streambed Alteration (LSA) Agreement with the applicant is required prior to conducting the proposed ongoing activities.

F. Potential Indirect Impacts

Biological resources located adjacent to the proposed development (north, south and east of the property) could be indirectly impacted by both construction and post-construction activities associated with the proposed Project.

Potential indirect impacts may include an increase in urban pollutants entering sensitive water bodies and edge effects. These edge effects include a potential increase in noise, human intrusion, and introduction of domestic animals, night lighting, habitat disturbance and pollutants (fugitive dust).

As described below, potential indirect impacts resulting from the proposed Project are not proposed/expected to occur. Preventative measures will be required and implemented to ensure that indirect impacts do not occur. The Property is currently surrounded by residential development on all side and is actively utilized by the community at large through the numerous trails running through the Property.

As described below, potential indirect impacts into the preserved area (CE) which supports the sensitive habitats and wildlife will be protected from unauthorized access/use. Once the development of the Project has been completed, the preserved habitat within the CE will not allow for the continued public access and use. This will be accomplished in the following ways:

- Precluding access form the rear yards of the proposed homes into the adjacent CE (no gates, etc.),
- Gating of the proposed utility easement access road through the extension of Tyler Street,
- Signage on metal posts spaced 100' apart along the intersection of the CE detailing the No Access and sensitive habitat status within the CE
- elimination of any public access to the preserve portion of the site from the proposed Project

~~T~~In addition to unauthorized use, the approval and development of the 14 residential lots will require the implementation of all identified preventative measures, during construction and under final residential use, that will separate the areas to be impacted from the preserved areas.

~~As described below~~~~including the preservation and management of the created Open Space which supports all the sensitive habitats and species. As a result, these intrusions~~~~potential indirect impacts~~ ~~into the natural~~ ~~preserved~~ ~~area~~ ~~(open space)~~ ~~which supports the sensitive habitats and wildlife will be greatly reduced because the Habitat Management Plan and associated Property Assessment (PAR) will be required and funded to implement access control measures~~~~avoided~~~~.~~

1. Water Quality

The proposed project site is located proximate to an ephemeral drainage and will continue to partially drain into the existing ephemeral drainage where it enters the property from a concrete box. Water quality has the potential to be adversely affected by potential surface runoff and sedimentation during the construction and operation of the project; however, Best Management Practices (BMPs) shall be implemented that shall reduce potential impacts to below significance. Therefore, the project is not expected to decrease water quality or affect vegetation, aquatic animals, or terrestrial wildlife that depends upon the water resources.

2. Habitat Disturbance

Development of residential, commercial, office, and/or restaurant uses typically lead to an increase in human presence on and around project sites. However, this is a project which is predominantly within the pre-existing developed envelope. Therefore, while there may be an increase in total human activity in the area, the area has already absorbed the biological loss to function and value and it is unlikely (if possible) that the project could lead

to further fragmentation of habitat and the degradation of sensitive habitat if people or pets wandered outside the developed area. Additionally, illegal dumping of green waste, trash, and other refuse, which currently negatively impacts the adjacent habitat, would be eliminated.

3. Edge Effects

Edge effects occur when blocks of habitat are fragmented by development. Potential edge effects include: potential increase in noise, human intrusion, introduction of domestic animals, night lighting and dumping.

These edges make it easier for non-native plant species to invade native habitats. Edge effects can also make it easier for both native and non-native predators to access prey that may have otherwise have been protected within large, contiguous blocks of habitat. In addition, the disruption of predator-prey, parasite-host, and plant-pollinator relations can occur.

The proposed project shall not lead to significant edge effects. The project's proposed landscape plan does not include any invasive plant species. Steep slopes that rim development areas are within the FMZ 1 and 2 and shall be landscaped in Fire Marshal approved native and naturalized plant material and serve as a buffer to native habitat surrounding the project site. In addition, as previously stated, the approval and development of the 14 residential lots will require the implementation of all identified preventative measures and funded to implement access control measures in perpetuity. Therefore, the Project implementation will improve on the existing habitats exposure to the current edge effects, primarily the impact of human use (walking trails with pets and dumping).

4. Night-time Lighting

Development of the project site shall introduce night-time lighting in the form of street and parking lights, car headlights, and residential lights. Night-time lighting on native habitats can provide nocturnal predators with an unnatural advantage over their prey. This could cause an increased loss in native wildlife that could be a significant impact unless mitigated. Nighttime lighting shall be consistent with the City's lighting requirements and shall not cause significant impacts on wildlife habitat. ~~A~~ As a result, no photometric study is required ~~be prepared~~.

5. Fugitive Dust

Fugitive dust produced by construction could disperse onto vegetation. Effects on vegetation due to airborne dust could occur adjacent to construction. A continual cover of dust may reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. This, in turn, could affect animals' dependent on these plants (e.g., seed eating rodents or insects or browsing herbivores).

Fugitive dust impacts shall not be considered significant because the project shall be required to implement mandatory dust control requirements, per the City approved grading plan(s) and grading ordinances, that ensure dust control is implemented and significant impacts shall not occur.

G. Wildlife Movement Corridors

The property does not maintain an identified wildlife corridor. The proposed project will not significantly impact a wildlife movement corridor. No mitigation will be required.

CUMULATIVE IMPACTS

A total of approximately 19.45 acres (approximately 71%) of the property will be avoided and preserved, including all sensitive species locations, wetlands and coastal sage scrub. The proposed project shall impact a total of 8.41 acres (29%).

No listed/sensitive species were observed or are expected to occur within the proposed development footprint; none are proposed to be impacted. Due to the fact that the proposed project will conform with the draft SAP/MSCP ~~draft~~ and its' implementing ordinances, the project will not result in a significant cumulative impact for those biological resources adequately covered by the ~~draft~~ SAP/MSCP.

Biological impacts shall be mitigation to a level below significance onsite. No cumulative impact mitigation, for habitat or species, is recommended at this time.

MITIGATION MEASURES

Mitigation is required for impacts that are considered significant under CEQA and the City draft MSCP and Sub-Area Plan. Mitigation measures typically employed include resource avoidance, on-site habitat preservation and/or replacement, payment of funds into a habitat conservation program, and/or the off-site acquisition and preservation of habitat. Mitigation is required for impacts that are considered significant, including impacts to listed species, sensitive plant communities and habitats, and wetlands that are not adequately protected by the draft MSCP.

~~The draft Santee MSCP and MHPA overlay requires that 60% of the project site must be conserved.~~ Regulations within the draft subarea plan require that impacts to jurisdictional wetlands, chaparral, native and non-native grasslands are mitigated according to the Uniform Mitigation Standards.

Special-status Plant Species

No sensitive and/or narrow endemic plant species are proposed to be impacted and mitigation is not recommended at this time.

Jurisdictional Aquatic Resources (CDFW wetlands)

The jurisdictional blue line stream channel and the associated wetland habitat, as depicted on Figure 4, is under the jurisdiction of the City and CDFW.

No potentially significant impacts (only FMZ 2 maintenance) to the CDFW jurisdictional wetlands are proposed. No compensatory wetland mitigation is required.

Sensitive Habitats

As required by CEQA and the City/draft MSCP, mitigation is required to reduce these potentially significant impacts to a level below significance.

The proposed Project will significantly impact three sensitive habitat types over ~~approximately~~ 6.78 acres (Table 6).

This is broken down as follows~~, including the required mitigation ratio~~:

- 0.59 acres of Native Grasslands ~~(mitigation ratio 2:1)~~
- 0.14 acres of Southern Mixed Chaparral ~~(mitigation ratio 1:1)~~
- 5.27 acres of Annual Non-Native Grasslands ~~(mitigation ratio 1:1)~~
- 0.01 acres of Existing ~~Open Space~~CE Fuel Modification Zone 1 maintenance impacts to Native Grasslands ~~(mitigation ratio is doubled, 2:1).~~
- 0.28 acres of Existing ~~Open Space~~CE Fuel Modification Zone 1 maintenance impacts to Annual Non-Native Grasslands ~~(mitigation ratio is doubled, 2:1).~~

TABLE 6
Proposed Project – Impact and Mitigation
Preserved Habitat

Plant Community	Tier	Acres	Impacts	Preserve	% Preserved
Diegan Coastal Sage Scrub	II	6.36	0.0	6.36	100%
Native Grasslands	I	1.24	0.61*	0.63	51%
Southern Mixed Chaparral	III	8.84	0.14*	8.70	98%
CDFW Willow Scrub (dist.)	I	0.24	0.24**	0.24	100%
CDFW Ephemeral Unvegetated Channel*	I	309 linear feet/0.02	0.0	309 linear feet/0.02	100%
Non-Native Grasslands	III	8.7	5.74*	2.96	34%
Disturbed habitat	IV	1.97	1.68	0.29	14%
TOTAL		27.35	8.41	19.45	71%

** Significant Impact*
*** FMZ 2 impacts not considered significant – Willow Habitat in FMZ 2 to be included in Preserve*

A total of 71% of the property will be preserved – 29% developed. This supersedes the draft MSCP requirement to preserve 70% of the property.

As required by the Santee draft MSCP for this property, no more than 30% of the property can be developed and mitigation for those impacts requires the Project to preserve, manage and maintain in perpetuity the avoided 70% (minimum).

~~**TABLE 6**~~
~~**Proposed Project Impacts and**~~
~~**Habitat Mitigation Requirements**~~

~~Plant Community~~	~~Tier~~	~~Onsite Acres~~	~~Total Impacts~~	~~Mitigation Ratio~~	~~Mitigation Acreage~~
~~Diegan Coastal Sage Scrub~~	~~II~~	~~6.36~~	~~0.0~~	~~N/A~~	~~N/A~~
~~Native Grasslands~~	~~I~~	~~1.24~~	~~0.61~~	~~2:1~~	~~1.22~~
~~Southern Mixed Chaparral~~	~~III~~	~~8.84~~	~~0.14~~	~~1:1~~	~~0.14~~
~~CDFW Willow Scrub (dist.)~~	~~I~~	~~0.24~~	~~0.0~~	~~N/A~~	~~N/A~~
~~CDFW Ephemeral Unvegetated Channel*~~	~~I~~	~~309 linear feet/0.02~~	~~0.0~~	~~N/A~~	~~N/A~~
~~Non-Native Grasslands~~	~~III~~	~~8.7~~	~~5.74~~	~~1:1~~	~~5.74~~

~~Sage Easement impacts; Native Grasslands~~	~~I~~		~~0.01~~	~~4:1 (double)~~	~~0.04~~
~~Sage Easement impacts; Non-Native Grasslands~~	~~III~~		~~0.28~~	~~2:1 (double)~~	~~0.56~~
~~Disturbed habitat~~	~~IV~~	~~1.97~~	~~1.68~~	~~N/A~~	~~N/A~~
~~TOTAL~~		~~27.35~~	~~8.41~~		~~7.7~~

~~** Area not included in habitat total, calculated as underlying habitat*~~

~~The draft MSCP and MHPA requires that a minimum of 60% of the onsite sensitive habitat(s) be preserved onsite. A total of 71% of the sensitive habitat will be preserved.~~

Of the 27.35 acres onsite, a total of approximately 29% of the Property, totaling 8.41 acres, are proposed to be impacted by the Project. A total of 19.45 acres (71%) of habitat are avoided and to be preserved by the Project. FMZ 2 impacts (neutral impact) are proposed within the onsite willow scrub (to be placed within ~~OS~~ CE lot "C"). No significant impacts to the riparian habitat are proposed and no compensatory mitigation for Willow Scrub impacts are required ~~at this time~~.

~~For the potentially significant impacts to the 6.49 acres of sensitive habitat(s), a minimum of 7.7 acres of sensitive habitat mitigation is required.~~

~~Two separate Open Space~~CE lots B and C totaling 19.45 acres ~~, Lot B (18.56 acres) and Lot C (0.30 acres),~~ have been ~~created~~ prepared for the ~~preserved~~ avoided onsite habitat.

As a result of exceeding the draft SAP/MSCP mitigation requirements, no additional offsite habitat mitigation or onsite habitat restoration is required or proposed.

~~The Project will avoid and preserve approximately 71% of the sensitive habitat onsite, including 100% of the most sensitive habitat and topographic features.~~ As ~~a result~~designed ~~and proposed mitigation~~, the Project meets and exceeds the goals of the ~~City~~city draft SAP/MSCP ~~mitigation requirements~~.

Indirect Impacts Avoidance

- As potentially appropriate bird/raptor nesting sites have been observed onsite, preventative measures to preclude direct and/or indirect impacts violating the Migratory Bird Treaty Act (MBTA) shall be implemented. Potential nesting sites are defined as large trees, burrows and/or man-made towers/poles etc. Preventative mitigation (pre-construction surveys) is required, see below.
- In order to prevent potential significant/indirect impacts to breeding birds/raptors, if grading is proposed during the bird/raptor breeding season (February 1 to Augst 31) then, a pre-construction survey for active

nests onsite and within 500-feet of the footprint shall be performed no more than three days prior to the initiation of construction. If an active nest is identified onsite, then grading shall be postponed until the nest is no longer active.

- In addition, dedication of the CE and fencing along the limit of the CE will be required both during construction (temporary) and permanent fencing.
- Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, a qualified, City approved biological monitor shall be retained by the project proponent and shall be onsite during clearing, grubbing, and/or grading activities. The biological monitor shall attend all preconstruction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas and protective fencing. In addition, the biological monitor shall be on site during construction to ensure that vehicles stay within the limits of the permitted Project footprint. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City's draft MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project.
- Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, all workers shall be educated by a City approved biologist to recognize and avoid those areas which have been marked as sensitive biological resources.
- Prior to initiating any construction related activities, including clearing, grubbing, grading and construction, biological fencing (i.e., ESA type fencing) shall be installed. Prominently colored, well - installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to and/or within the Preserve.
- Immediately following construction activities, the biological monitor shall prepare and submit to the satisfaction of the City, a monitoring report documenting the project's compliance with all minimization/avoidance measures.

CERTIFICATION/QUALIFICATION

The following individual completed the field surveys and preparation of this report:

Michael Jefferson; University of California at San Diego, B.A., Biological Anthropology and Sociobiology~~, 1996~~
ACOE Protocol Wetland Assessment Specialist
CHRIS Registered Archaeologist
Qualified County of San Diego Biologist
Qualified County of Riverside Biologist and CEQA Specialist

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Attachment A

PLANT SPECIES OBSERVED

Scientific Name	Common Name	Habitat	Origin
Achnatherum coronatum (Thurber) Barkworth	Giant needlegrass	CSS	N
Adenostoma fasciculatum Hook. & Arn.	Chamise	CSS, SMC	N
Amsinckia menziesii (Lehm.) Nelson & J.F. Macbr.	Rancher's fireweed	D, CSS	N
Anagallis arvensis L.	Scarlet pimpernel	D, SMC	I
Artemisia californica Less.	California sagebrush	CSS	N
Avena fatua L.	Wild oat	D, CSS	I
Baccharis pilularis DC.	Coyote bush	SMC	N
Bloomeria crocea (Torrey) Cov.	Common goldenstar	NNG, D, CSS	N
Brassica nigra (L.) Koch.	Black mustard	NNG, D, CSS	I
Brassica rapa L.	Field mustard	NNG, D, CSS	I
Bromus madritensis L. ssp. *rubens* (L.) Husnot	Foxtail chess	NG, NNG, CSS	I
Calochortus splendens Benth.	Lilac mariposa	CSS	N
Calystegia macrostegia ssp. *tenuifolia* (Abrams) Brum	Chaparral morning-glory	CSS	N
Ceanothus crassifolius Torrey	Hoaryleaf ceanothus	SMC	N
Ceanothus oliganthus Nutt.	Ceanothus	SMC	N
Ceanothus tomentosus C. Parry	Coast blue lilac	SMC	N
Centaurea melitensis L.	Tocolote, star-thistle	D, CSS	I
Cercocarpus betuloides Torrey & A. Gray Birch-Leaf	Mountain-mahogany	SMC	N
Chamaesyce albomarginata (Torrey & A. Gray) Small	Rattlesnake weed	D	N
Cirsium occidentale (Nutt.) Jepson var. californicum	California thistle	D	N
Cneoridium dumosum (Nutt.) Baillon	Bushrue	SMC	N
Cordylanthus rigidus (Benth.)	Thread-leaved bird's-beak	CSS	N
Cryptantha intermedia (A. Gray) E. Greene	Nievita	CSS	N
Cuscuta californica Hook. & Arn.	Dodder	CSS	N
Delphinium parryi A. Gray	Blue larkspur	CSS	N
Encelia californica Nutt.	Common encelia	CSS	N
Encelia farinosa Torrey & A. Gray	Brittlebush, incienso	D	N
Epilobium canum (E. Greene) Raven ssp. *canum*	California-fuchsia, zauschneria	SMC	N
Eriodictyon crassifolium Benth.	Felt-leaved yerba santa	SMC	N
Eriodictyon trichocalyx A.A. Heller var. *lanatum* (Brand) Jepson	Hairy yerba santa	SMC	N
Eriogonum fasciculatum Benth. var. *fasciculatum*	California buckwheat	CSS, SMC	N
Eriophyllum confertiflorum (DC.) A. Gray var. *confertiflorum*	Golden-yarrow	D, CSS	N
Erodium cicutarium (L.) L. Her.	White-stemmed filaree	D, CSS	I
Euphorbia misera Benth.	Cliff spurge	CSS, SMC	N
Filago californica Nutt.	California herba impia, fluffweed	D, CSS	N
Foeniculum vulgare Mill.	Fennel	CSS	I

PLANT SPECIES OBSERVED

Scientific Name	Common Name	Habitat	Origin
Galium angustifolium Nutt. *angustifolium*	Narrow-leaf bedstraw	D, CSS	N
Gutierrezia californica (DC.) Torrey & A. Gray	California matchweed	CSS, SMC	N
Gutierrezia sarothrae (Pursh) Britt. & Rusby	Broom snakeweed, matchweed	CSS	N
Harpagonella palmeri A. Gray	Palmer's grappling hook	CSS	N
Hazardia squarrosa (Hook. & Arn.) E. Greene	Sawtoothed goldenbush	CSS	N
Helianthemum scoparium Nutt.	Peak rush-rose	CSS	N
Helianthus gracilentus A. Gray	Slender sunflower	CSS	N
Hemizonia fasciculata (DC.) Torrey & A. Gray	Golden tarplant	CSS	N
Heteromeles arbutifolia (Lindley) Roemer	Toyon, Christmas berry	SMC	N
Hypochaeris glabra L.	Smooth cat's-ear	CSS	I
Isocoma menziesii (Hook. & Arn.) G. Nesom	Coast goldenbush	D, CSS	N
Keckiella antirrhinoides (Benth.) Straw. var. *antirrhinoides*	Yellow bush penstemon	SMC	N
Keckiella cordifolia (Benth.) Straw	Climbing penstemon	CSS	N
Keckiella ternata (Torrey) Straw	Summerbush penstemon	CSS	N
Lamarckia aurea (L.) Moench.	Goldentop	D, CSS	I
Lathyrus vestitus Nutt. var. *alefeldii* (White) Isely.	Wild sweet pea	CSS	N
Lotus scoparius (Nutt. in Torrey & A. Gray) Ottley var. *scoparius*	California broom	CSS	N
Malacothamnus fasciculatus (Torrey & A. Gray) E. Greene	Chaparral mallow	CSS	N
Malosma laurina (Nutt.) Abrams	Laurel sumac	CSS, SMC	N
Marah macrocarpus (E. Greene) E. Greene	Wild cucumber	RW, CSS	N
Melica imperfecta Trin.	California melic	CSS	N
Melilotus indica (L.) All.	Sourclover	RW, D, CSS	I
Mimulus aurantiacus Curtis	Bush monkeyflower	CSS	N
Mimulus brevipes Benth.	Hillside monkeyflower	CSS	N
Mimulus cardinalis Benth.	Scarlet monkeyflower	CSS	N
Mirabilis californica A. Gray	Wishbone bush	CSS	N
Nassella pulchra (A. Hitchc.) Barkworth	Purple needlegrass	NG	N
Nicotiana glauca Grah.	Tree tobacco	RW, D	I
Oxalis albicans Kunth ssp. *californica* (Abrams) Eiten.	California wood-sorrel	CSS	N
Paeonia californica Torrey & A. Gray	Peony	SMC	N
Pellaea andromedifolia (Kaulf.) Fee	Coffee fern	CSS	N
Pellaea mucronata (D. Eaton) D. Eaton	Bird's-foot fern	CSS	N
Pennisetum setaceum Forsskal	Fountain grass	NNG, NG, D	I
Phacelia cicutaria E. Greene var. *hispida* (A. Gray) J. Howell	Caterpillar phacelia	CSS	N
Phacelia ramosissima Lehm. var. *latifolia* (Torrey) Cronq.	Shrubby phacelia	CSS	N
Pickeringia Montana Nutt. var. *tomentosa* (Abrams) J.M. Jonston	Chaparral-pea	CSS, SMC	N

PLANT SPECIES OBSERVED

Scientific Name	Common Name	Habitat	Origin
Plantago erecta	Dwarf plantain	NNG, NG, CSS	N
Populus fremontii Wats. ssp. *fremontii*	Fremont cottonwood, alamo	RS	N
Prunus ilicifolia (Nutt.) Walp. ssp. *ilicifolia*	Holly-leaved cherry, Islay	SMC	N
Pterostegia drymarioides Fischer & C. Meyer	California thread-stem	SMC	N
Quercus berberidifolia Liebm.	Scrub oak	SMC	N
Rhamnus crocea Nutt.	Spiny redberry	SMC	N
Rhus integrifolia (Nutt.) Brewer & Watson	Lemonadeberry	CSS, SMC	N
Rhus ovata Wats.	Sugar bush	CSS, SMC	N
Ribes indecorum Eastw.	White flowering currant	SMC	N
Salix lasiolepis Benth.	Arroyo willow	CSS	N
Salsola tragus L.	Russian thistle, tumbleweed	NNG, D	I
Salvia apiana Jepson	White sage	CSS	N
Salvia columbariae Benth.	Chia	NNG, D, CSS	N
Salvia mellifera E. Greene	Black sage	CSS, SMC	N
Selaginella bigelovii L. Underw.	Bigelow clubmoss	CSS, SMC	N
Selaginella cinerascens Maxon	Ashy spike-moss	CSS	N
Solanum parishii A.A. Heller	Parish's nightshade	CSS	N
Solanum xanti A. Gray	Purple nightshade	CSS	N
Sonchus oleraceus L.	Common sow thistle	NNG, D, CSS	I
Stephanomeria exigua Nutt. ssp. exigua	Slender stephanomeria	NNG, D, CSS	N
Toxicodendron diversilobum (Torrey & A. Gray) E. Greene	Western poison oak	SMC	N
Trifolium hirtum All.	Rose clover	WS, D	I
Uropapus lindleyi (DC.) Nutt.	Silver puffs	SMC	N
Viguiera laciniata	San Diego sunflower	SMC	N
Washingtonia robusta Wendl.	Washington palm	CSS	I
Xylococcus bicolor Nutt.	Mission manzanita	SMC	N
Yucca schidigera K.E. Ortgies	Mohave yucca	SMC	N
Yucca whipplei Torrey	Our Lord's candle	CSS, SMC	N

HABITATS

CSS = Coastal sage scrub
D = Disturbed
SMC = Southern Mixed Chaparral
WS = Willow Scrub
NNG = Non-Native Grassland
NG = Native Grassland

OTHER TERMS

N = Native to locality
I = Introduced species from outside locality

Attachment B

WILDLIFE SPECIES OBSERVED/DETECTED

Common Name	Scientific Name	Occupied Habitat	Evidence Of Occurrence
Invertebrates (Nomenclature from Mattoni 1990 and Opler and Wright 1999)			
Sara orangetip	*Anthocaris sara*	CSS	O
Cabbage white	*Pieris rapae*	NNG, CSS	O
Common or checkered white	*Pieris protodice*	NNG,CSS	O
Painted lady	*Vanessa cardui*	NNG, CSS	O
Reptiles (Nomenclature from Collins 1997)			
Coastal whiptail	*Cnemidophorus tigris multiscutatus*	CSS	O
Western fence lizard	*Sceloporus occidentalis*	RS	O
Side-blotched lizard	*Uta stansburiana*	NNG, CSS	O
Birds (Nomenclature from American Ornithologists' Union)			
Coopers Hawk	*Accipiter cooperii*	F	O
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	F	O
White-throated swift	*Aeronautes saxatalis*	F	O
Western scrub-jay	*Aphelocoma californica*	CSS	O,V
Costa's hummingbird	*Archilochus costae*	CSS	V
Red-tailed hawk	*Buteo jamaicensis*	F	O
California quail	*Callipepla califomica californica*	CSS	O,V
Anna's hummingbird	*Calypte anna*	CSS	O
San Diego cactus wren	*Campylorhynchus brunneicapillus*	CSS	O
Lesser goldfinch	*Carduelis psaltria hesperophilus*	CSS	V
House finch	*Carpodacus mexicanusfrontalis*	CSS	V
Wrentit	*Chamaeafasciata henshawi*	CSS	V
Common raven	*Corvus corax clarionensis*	CSS	O,V
Cliff swallow	*Hirundo pyrrhonota tachina*	CSS	V
Northern mockingbird	*Mimus polyglottos polyglottos*	CSS	O,V
Lazuli bunting	*Passerina amoena*	CSS	O,V

WILDLIFE SPECIES OBSERVED/DETECTED
(continued)

Common Name	Scientific Name	Occupied Habitat	Evidence Of Occurence
Coastal California gnatcatcher	*Polioptila californica californica*	CSS	O,V
Black-headed grosbeak	*Pheucticus melanocephalus maculatus*	SMC	O
Western tanager	*Piranga ludoviciana*	SMC	O
Spotted towhee	*Pipilo maculatus*	CSS	O
California towhee	*Pipilo crissalis*	CSS	V
Bushtit	*Psaltriparus minimus minimus*	CSS	O,V
Bewick's wren	*Thyromanes bewickii*	CSS	O,V
California thrasher	*Toxostoma redivivum redivivum*	CSS	V
Mourning dove	*Zenaida macroura marginella*	CSS	O,V
Mammals (Nomenclature from Jones et al. 1982)			
Woodrat	Neotoma sp.	SMC	O
Coyotee	Canis latrans	NNG	S
California ground squirrel	Spermophilus beecheyi	SMC, NNG	O
Cottontail rabbit	Sylvilagus audubonii	NNG, SMC, CSS	O

Habitats

CSS = Coastal Sage Scrub
RS = Riparian Scrub
NG = Native Grasslands
SMC = Southern Mixed Chaparral
NNG = Non-Native Grasslands

Evidence of Occurrence
F = Flying overhead
V = Vocalization
O = Observed
S = Scat

Attachment C

TABLE 2
SENSITIVE PLANT SPECIES
OBSERVED (†) OR WITH THE POTENTIAL FOR OCCURRENCE

Species	State/Federal Status	City of Santee Status	CNPS List/Code	Typical Habitat/Comments
Acanthomintha ilicifolia San Diego thornmint	CE/FT	NE, MSCP	1B/2-3-2	Chaparral, coastal sage scrub, valley and foothill grassland/ clay soils. No appropriate soils. Low potential to occur.
Ambrosia pumila San Diego ambrosia	–/–	NE, MSCP	1B/3-2-2	Creekbeds, seasonally dry drainages, floodplains. Would have been observed if present. No suitable habitat. Low potential to occur.
Arctostaphylos glandulosa ssp. *crassifolia* Del Mar manzanita	–/FE	MSCP	1B/3-3-2	Southern maritime chaparral. Would have been observed if present. No suitable habitat. Not observed on-site.
Artemisia palmeri San Diego sagewort	–/–	–	2/2-2-1	Coastal sage scrub, chaparral, riparian. Would have been observed if present. No suitable habitat. Low potential to occur.
Baccharis vanessae Encinitas coyote bush	CE/FT	NE, MSCP	1B/2-3-3	Chaparral. Would have been observed if present. No suitable habitat. Not observed on-site. Low potential to occur.
Brodiaea filifolia Thread-leaved brodiaea	CE/FT	MSCP	1B/3-3-3	Valley and foothill grassland, vernal pools. No appropriate soils. Low potential to occur.
Brodiaea orcuttii Orcutt's brodiaea	–/–	MSCP	1B/1-3-2	Closed-cone coniferous forest, meadows, cismontane wood-land, valley and foothill grass-land, vernal pools. . No appropriate soils. Low potential to occur.
Chorizanthe polygonoides var. *longispina* Long-spined spineflower	–/–	–	1B/2-2-2	Open chaparral, coastal sage scrub, montane meadows, valley and foothill grasslands; vernal pools/clay. No appropriate soils. Low potential to occur.

TABLE 2
SENSITIVE PLANT SPECIES
OBSERVED (†) OR WITH THE POTENTIAL FOR OCCURRENCE
(continued)

Species	State/Federal Status	City of Santee Status	CNPS List/Code	Typical Habitat/Comments
Dichondra occidentalis Western dichondra	–/–	–	4/1-2-1	Chaparral, cismontane wood-land, coastal sage scrub, valley and foothill grassland/generally post-burn. . No appropriate soils. Low potential to occur.
Ferocactus viridescens Coast barrel cactus	–/–	MSCP	2/1-3-1	Chaparral, coastal sage scrub, valley and foothill grassland. No appropriate soils. Not observed on-site.
Harpagonella palmeri var. *palmeri* Palmer's grappling hook	–/–	–	2/1-2-1	Chaparral, coastal sage scrub, valley and foothill grassland. . No appropriate soils. Low potential to occur.
Juncus acutus ssp. leopoldii Spiny rush†	–/–	–	4/1-2-1	Coastal dunes (mesic) meadows (alkaline), coastal salt marsh. Not observed on-site. Moderate potential to occur.
Lessingia filaginifolia var. *filaginifolia* (=*Corethrogyne filaginifolia* var. *incana*) San Diego sand aster	–/–	–	1B/2-2-2	Coastal sage scrub, chaparral. No appropriate soils. Low potential to occur.
Muilla clevelandii San Diego goldenstar	–/–	MSCP	1B/2-2-2	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools. No appropriate soils. Low potential to occur.
Quercus dumosa Nuttall's scrub oak	–/–	–	1B/2-3-2	Coastal chaparral. No appropriate soils. Low potential to occur.
Tetracoccus dioicus Parry's tetracoccus	–/–	MSCP	1B/3-2-2	Chaparral, coastal sage scrub. . No appropriate soils. Low potential to occur.

NOTE: See Table 4 for explanation of sensitivity codes.

Attachment D

SENSITIVE WILDLIFE SPECIES KNOWN (OR POTENTIALLY OCCURRING)

Species	Status	Habitat	Occurrence/Comments*
Invertebrates			
Quino checkerspot butterfly *Euphydryas editha quino*	FE, MSCP	Open, dry areas in foothills, mesas, lake margins. Larval host plant *Plantago erecta.*	Suitable habitat present; Not observed, low potential to occur on-site.
Harbison's dun skipper *Euphyes vestris harbisoni*	MSCP	Riparian habitats. Larval host plant *Carex spissa*.	No suitable habitat present; no potential to occur on-site.
Amphibians (Nomenclature from Collins 1997)			
Western spadefoot *Spea hammondii*	CSC, MSCP	Vernal pools, floodplains, and alkali flats within areas of open vegetation.	No suitable habitat present due to high level of use; no potential to occur on-site.
Reptiles (Nomenclature from Collins 1997)			
Southwestern pond turtle *Clemmys marmorata pallida*	CSC, FSS, MSCP	Ponds, small lakes, marshes, slow-moving, sometimes brackish water.	No suitable habitat present; not observed or recorded historically onsite (CNDDB).
San Diego horned lizard *Phrynosoma coronatum blainvillii*	CSC, MSCP, *	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants for forage.	Suitable habitat present; High potential to occur on-site.
Belding's orangethroat whiptail *Cnemidophorus hyperythrus beldingi*	CSC, MSCP	Chaparral, coastal sage scrub with coarse sandy soils and scattered brush.	Suitable habitat present; High potential to occur on-site.
Silvery legless lizard *Anniella pulchra pulchra*	CSC	Herbaceous layers with loose soil in coastal scrub, chaparral, and open riparian habitats. Prefers dunes and sandy washes near moist soil.	Suitable habitat present; not observed or recorded historically onsite, low potential to occur on-site.
Coast patch-nosed snake *Salvadora hexalepis virgultea*	CSC	Grasslands, chaparral, sagebrush, desert scrub. Found in sandy and rocky areas.	Suitable habitat present; not observed or recorded historically onsite, low potential to occur on-site.

SENSITIVE WILDLIFE SPECIES KNOWN (OR POTENTIALLY OCCURRING)
(continued)

Species	Status	Habitat	Occurrence/Comments*
Red diamond rattlesnake *Crotalus exsul (= C. ruber ruber)*	CSC	Desert scrub and riparian habitats, coastal sage scrub, open chaparral, grassland, and agricultural fields.	Suitable habitat present; not observed or recorded historically onsite, low potential to occur on-site.
Birds (Nomenclature from American Ornithologists' Union)			
Great blue heron (rookery site) *Ardea herodias*	*	Bays, lagoons, ponds, lakes. Non-breeding year-round visitor, some localized breeding.	No suitable habitat present for rookery
Great egret (rookery site) *Ardea alba*	*	Lagoons, bays, estuaries. Ponds and lakes in the coastal lowland. Winter visitor, uncommon in summer.	No suitable habitat present for rookery
White-tailed kite (nesting) *Elanus leucurus*	CFP, *	Nest in riparian woodland, oaks, sycamores. Forage in open, grassy areas. Year-round resident.	Low potential to nest on-site.
Northern harrier (nesting) *Circus cyaneus*	CSC, MSCP	Coastal lowland, marshes, grassland, agricultural fields. Migrant and winter resident, rare summer resident.	Low potential to nest on-site.
Sharp-shinned hawk (nesting) *Accipiter striatus*	CSC	Open deciduous woodlands, forests, edges, parks, residential areas. Migrant and winter visitor.	Low potential to nest on-site.
Cooper's hawk (nesting) *Accipiter cooperii*	CSC, MSCP,HMP	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas. Migrant and winter visitor.	Observed flying overhead; Low potential to nest on-site.
Ferruginous hawk (wintering) *Buteo regalis*	CSC	Require large foraging areas. Grasslands, agricultural fields. Uncommon winter resident.	No suitable habitat present; Low potential to nest on-site.

SENSITIVE WILDLIFE SPECIES KNOWN (OR POTENTIALLY OCCURRING)
(continued)

Species	Status	Habitat	Occurrence/Comments*
Golden eagle (nesting and wintering) *Aquila chrysaetos*	CSC, CFP, BEPA, MSCP	Require vast foraging areas in grassland, broken chaparral, or sage scrub. Nest in cliffs and boulders. Uncommon resident.	No suitable habitat present; Low potential to nest on-site.
Merlin *Falco columbarius*	CSC	Rare winter visitor. Grasslands, agricultural fields, occasionally mud flats.	No suitable habitat present; Low potential to nest on-site.
Prairie falcon (nesting) *Falco mexicanus*	CSC	Grassland, agricultural fields, desert scrub. Uncommon winter resident. Rare breeding resident. Breeds on cliffs.	No suitable habitat present; Low potential to nest on-site.
Western yellow-billed cuckoo (breeding) *Coccyzus americanus occidentalis*	SE	Large riparian woodlands. Summer resident. Very localized breeding.	Only a few recent sightings in county; not expected to occur. No suitable habitat present.
Western burrowing owl (burrow sites) *Speotyto cunicularia hypugaea*	CSC, MSCP,HMP	Grassland, agricultural land, coastal dunes. Require rodent burrows. Declining resident.	Due to active use, no suitable habitat present; Low potential to nest on-site.
Southwestern willow flycatcher *Empidonax traillii extimus*	SE, FE, FSS, MSCP	Nesting restricted to willow thickets. Also occupies other woodlands. Rare spring and fall migrant, rare summer resident. Extremely localized breeding.	No suitable habitat present; Low potential to nest on-site.
California horned lark *Eremophila alpestris actia*	CSC	Sandy shores, mesas, disturbed areas, grasslands, agricultural lands, sparse creosote bush scrub.	No suitable habitat present; Low potential to occur on-site.
Coastal cactus wren *Campylorhynchus brunneicapillus couesi*	CSC, MSCP, *	Maritime succulent scrub, coastal sage scrub with *Opuntia* thickets. Rare localized resident.	Observed onsite

SENSITIVE WILDLIFE SPECIES KNOWN (OR POTENTIALLY OCCURRING)
(continued)

Species	Status	Habitat	Occurrence/Comments*
Coastal California gnatcatcher *Polioptila californica californica*	FT, CSC, MSCP	Coastal sage scrub, maritime succulent scrub. Resident.	Observed onsite
Loggerhead shrike *Lanius ludovicianus*	CSC	Open foraging areas near scattered bushes and low trees.	No suitable nesting habitat present.
Least Bell's vireo (nesting) *Vireo bellii pusillus*	SE, FE, MSCP	Willow riparian woodlands. Summer resident.	Not observed onsite, no nesting habitat present.
Yellow warbler (nesting) *Dendroica petechia brewsteri*	CSC	Breeding restricted to riparian woodland. Spring and fall migrant, localized summer resident, rare winter visitor.	Not observed onsite, no nesting habitat present.
Yellow-breasted chat (nesting) *Icteria virens*	CSC, MSCP	Dense riparian woodland. Localized summer resident.	No suitable nesting habitat present.
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	CSC, MSCP	Coastal sage scrub, grassland. Resident.	Observed onsite
Bell's sage sparrow *Amphispiza belli belli*	CSC, MSCP	Chaparral, coastal sage scrub. Localized resident.	Suitable habitat present; not observed or recorded historically onsite, low potential to occur on-site
Tricolored blackbird *Agelaius tricolor*	CSC, MSCP	Freshwater marshes, agricultural areas, lakeshores, parks. Localized resident.	No suitable habitat present.
Blue grosbeak (nesting) *Guiraca caerulea*	*	Riparian woodland edges, mule fat thickets. Summer resident, spring and fall migrant, winter visitor.	No suitable habitat present.

SENSITIVE WILDLIFE SPECIES KNOWN (OR POTENTIALLY OCCURRING)
(continued)

Species	Status	Habitat	Occurrence/Comments*
Mammals (Nomenclature from Jones et al. 1982)			
Pale big-eared bat *Corynorhinus townsendii pallescens*	CSC	Caves, mines, buildings. Found in a variety of habitats, arid and mesic.	Individual or colonial. Extremely sensitive to disturbance; marginal roosting habitat present; not expected to occur.
Townsend's western big-eared bat *Corynorhinus townsendii townsendii*	CSC, MSCP	Caves, mines, buildings. Found in a variety of habitats, arid and mesic.	Individual or colonial. Extremely sensitive to disturbance; marginal roosting habitat present; not expected to occur.
Western mastiff bat *Eumops perotis californicus*	CSC, MSCP	Woodlands, rocky habitat, arid and semiarid lowlands, cliffs, crevices, buildings, tree hollows.	Marginal roosting habitat present; low potential to occur on-site.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	CSC, MSCP	Open areas of scrub, grasslands, agricultural fields.	Moderate potential to occur. Not observed.
Pacific little pocket mouse *Perognathus longimembris pacificus*	FE, CSC, MSCP	Open coastal sage scrub; fine, alluvial sands near ocean.	No suitable soils; not expected to occur.
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	CSC, MSCP	San Diego County west of mountains in sparse, disturbed coastal sage scrub or grasslands with sandy soils.	No suitable habitat present.
San Diego desert woodrat *Neotoma lepida intermedia*	CSC	Coastal sage scrub and chaparral.	Suitable habitat present; not observed or recorded historically onsite, low potential to occur on-site

SENSITIVE WILDLIFE SPECIES KNOWN (OR POTENTIALLY OCCURRING)
(continued)

Status Codes

Listed/Proposed

FE = Listed as endangered by the federal government
FT = Listed as threatened by the federal government
SE = Listed as endangered by the state of California

Other

BEPA = Bald and Golden Eagle Protection Act
CFP = California fully protected species
CSC = California Department of Fish and Game species of special concern
FC = Federal candidate for listing (taxa for which the U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support proposals to list as endangered or threatened; development and publication of proposed rules for these taxa are anticipated)
FSS = Federal (Bureau of Land Management and U.S. Forest Service) sensitive species
MSCP = Multiple Speciea Conservation Program target species list
* = Taxa listed with an asterisk fall into one or more of the following categories:

- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
- Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

Attachment E

SENSITIVITY CODES

FEDERAL CANDIDATES AND LISTED PLANTS

FE = Federally listed, endangered
FT = Federally listed, threatened
FPE = Federally proposed endangered
FPT = Federally proposed threatened

STATE LISTED PLANTS

CE = State listed, endangered
CR = State listed, rare
CT = State listed, threatened

CITY OF SANTEE

MSCP = City of Santee Multiple Species Conservation Program
NE = Narrow endemic species in MSCP

CALIFORNIA NATIVE PLANT SOCIETY

LISTS

1A = Species presumed extinct.

1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.

2 = Species rare, threatened, or endangered in California but which are more common elsewhere. These species are eligible for state listing.

3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.

4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

R-E-D CODES

R (Rarity)

1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time.

2 = Occurrence confined to several populations or to one extended population.

3 = Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

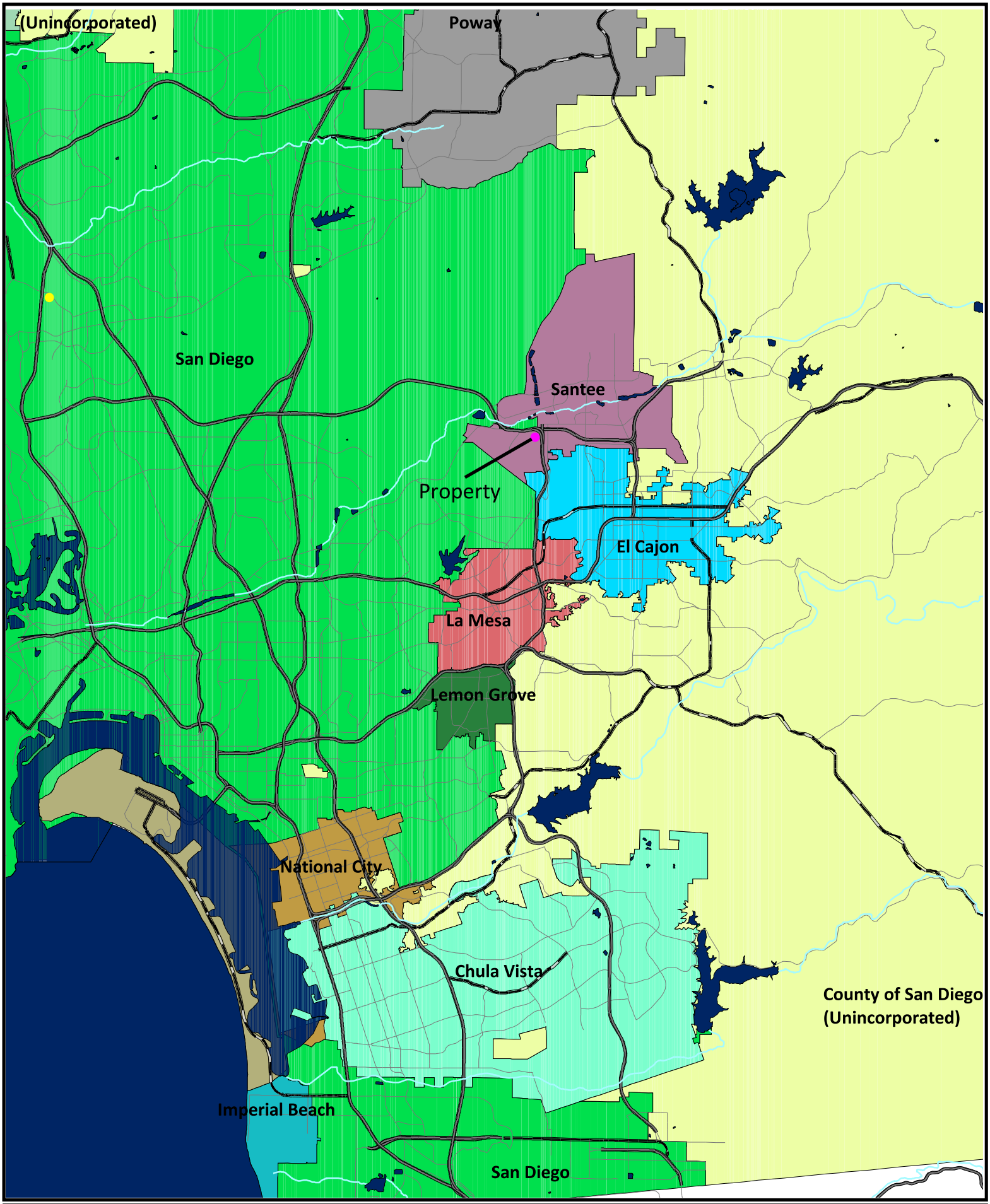
E (Endangerment)

1 = Not endangered
2 = Endangered in a portion of its range
3 = Endangered throughout its range

D (Distribution)

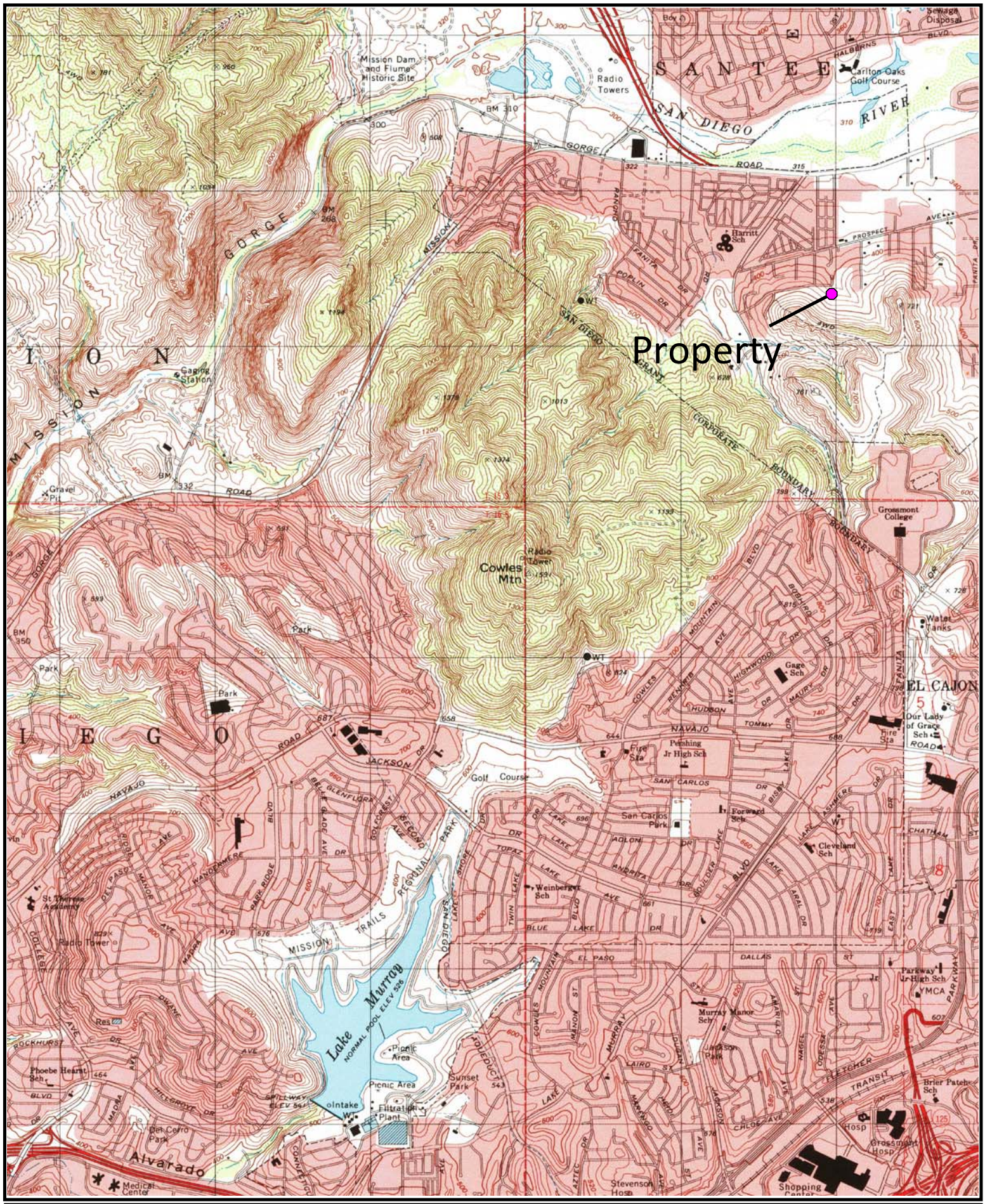
1 = More or less widespread outside California
2 = Rare outside California
3 = Endemic to California

Attachment F



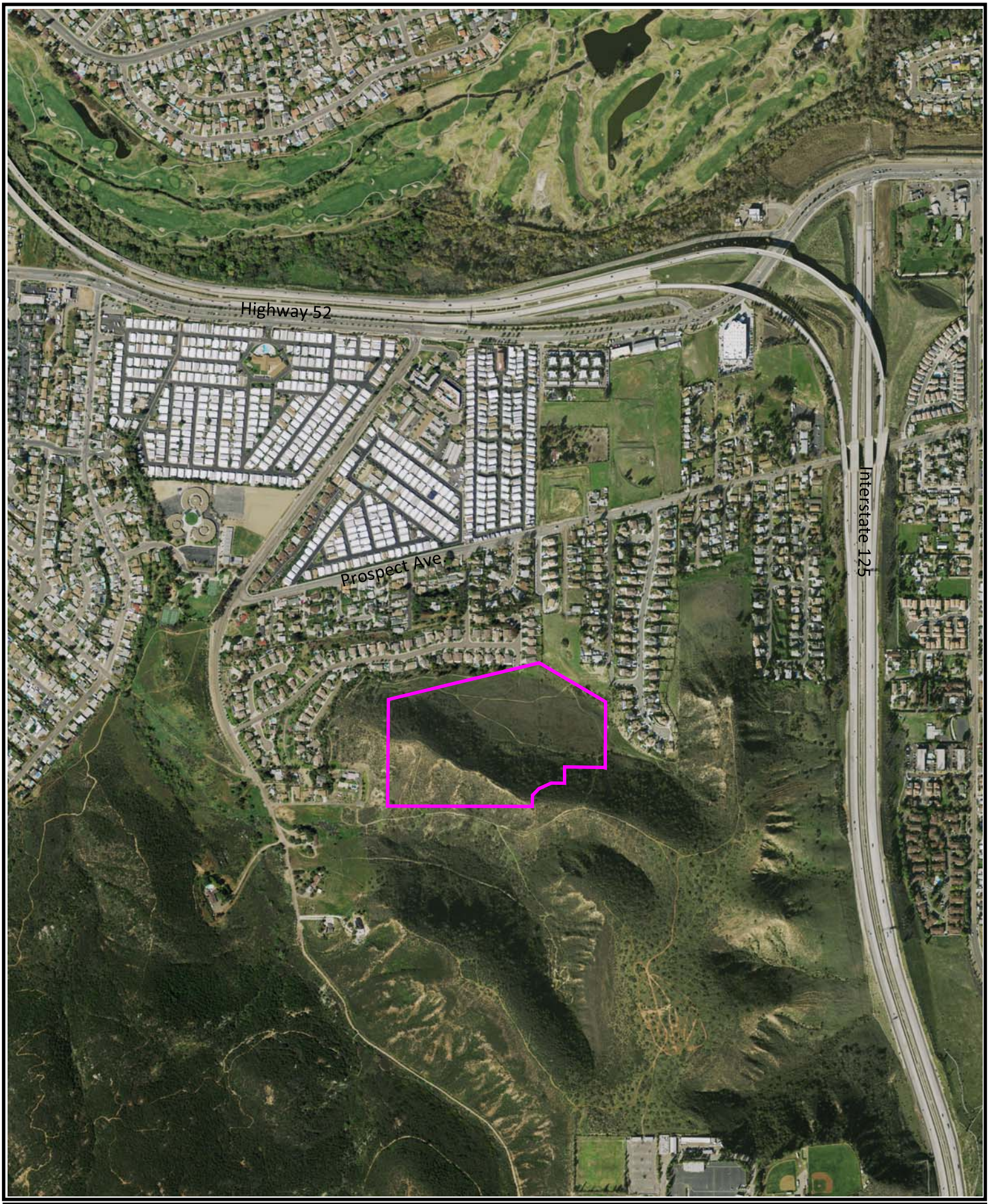
Property

FIGURE 1
Regional Project Location



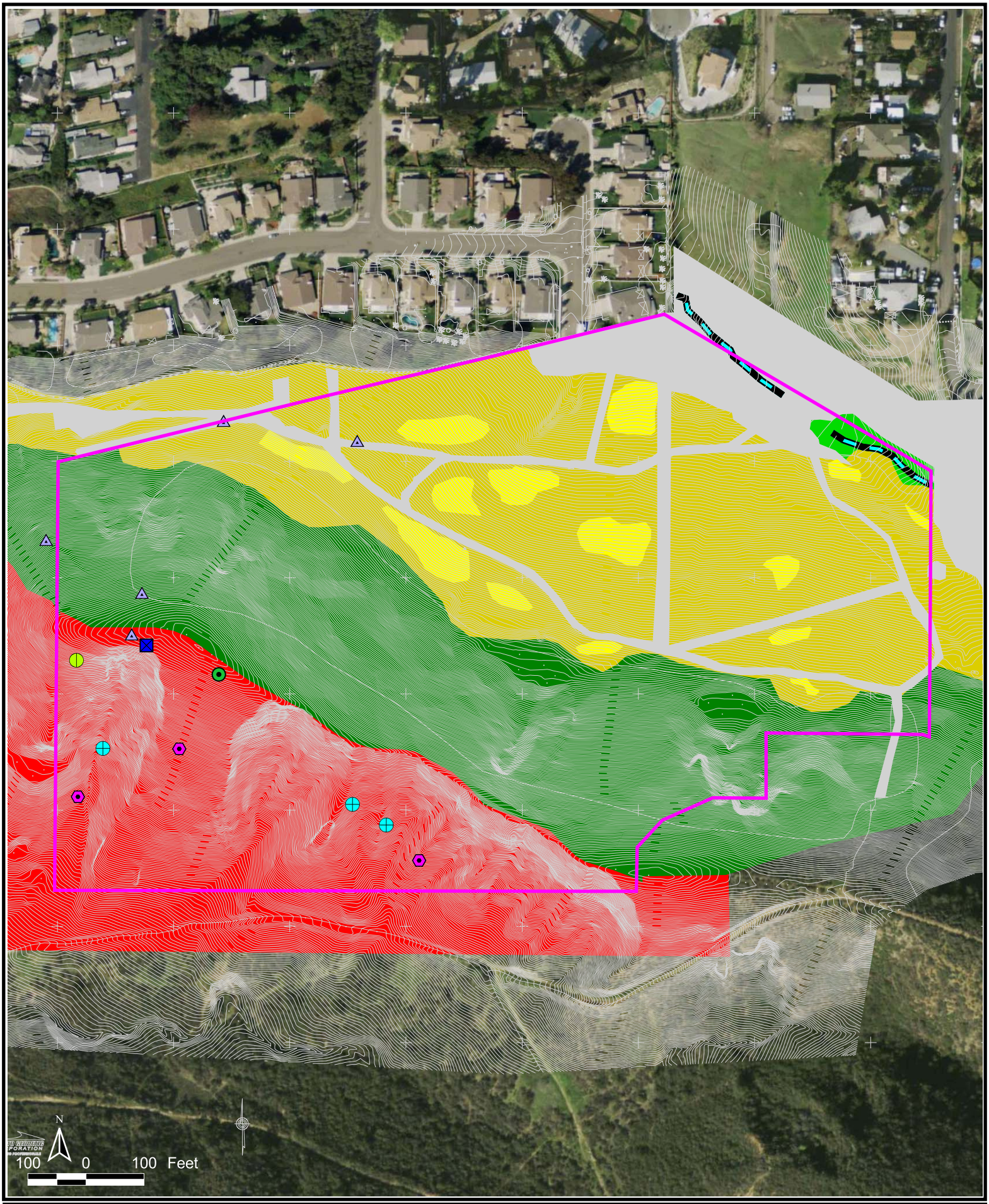
Property (approximately)

FIGURE 2
Project Location



Property

FIGURE 3
Property Aerial



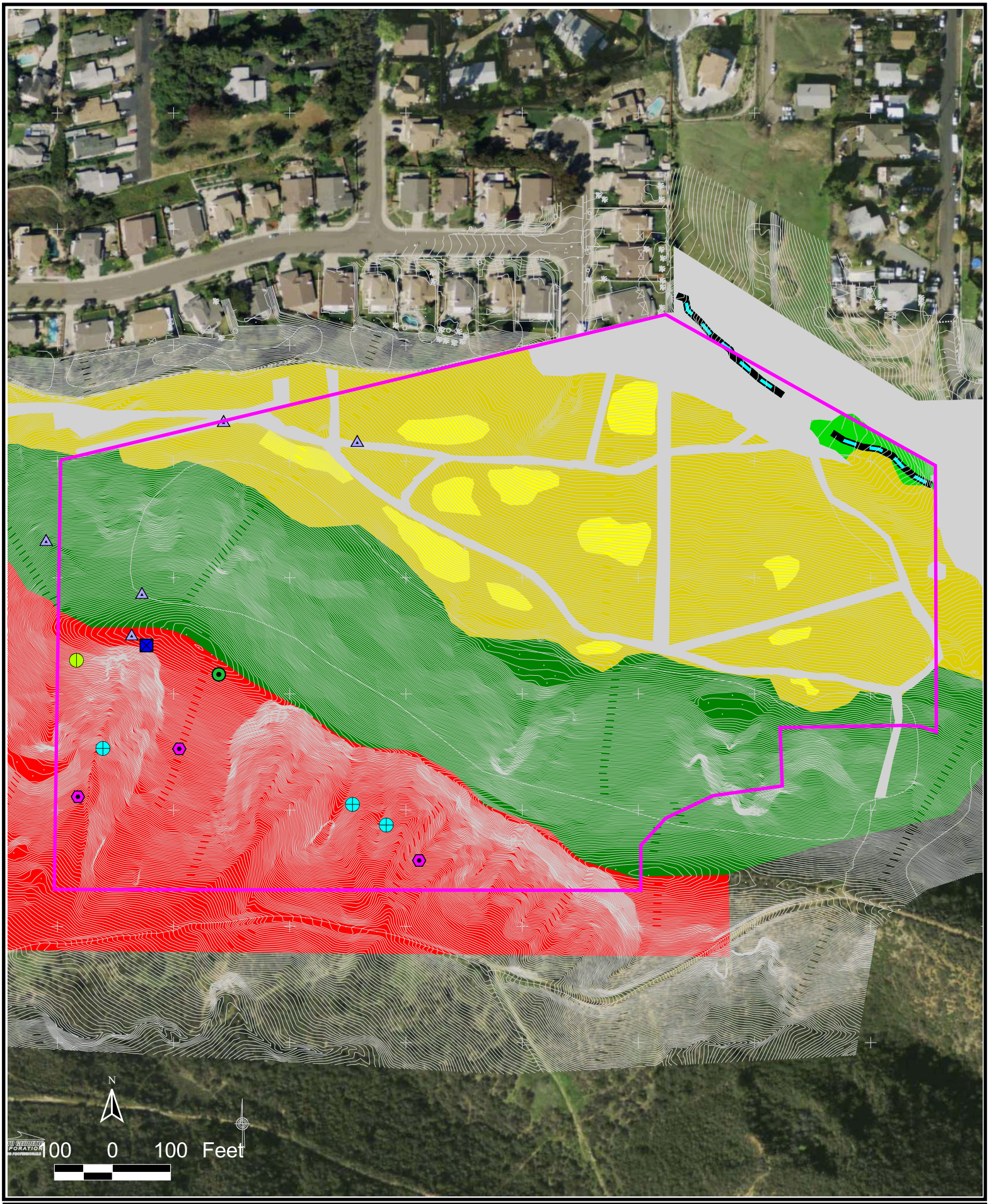
Property

Coastal Sage Scrub
Chaparral
Riparian scrub

Native grassland
Non-native grassland
Disturbed habitat

Ephemeral drainage channel

FIGURE 4
Habitat Map

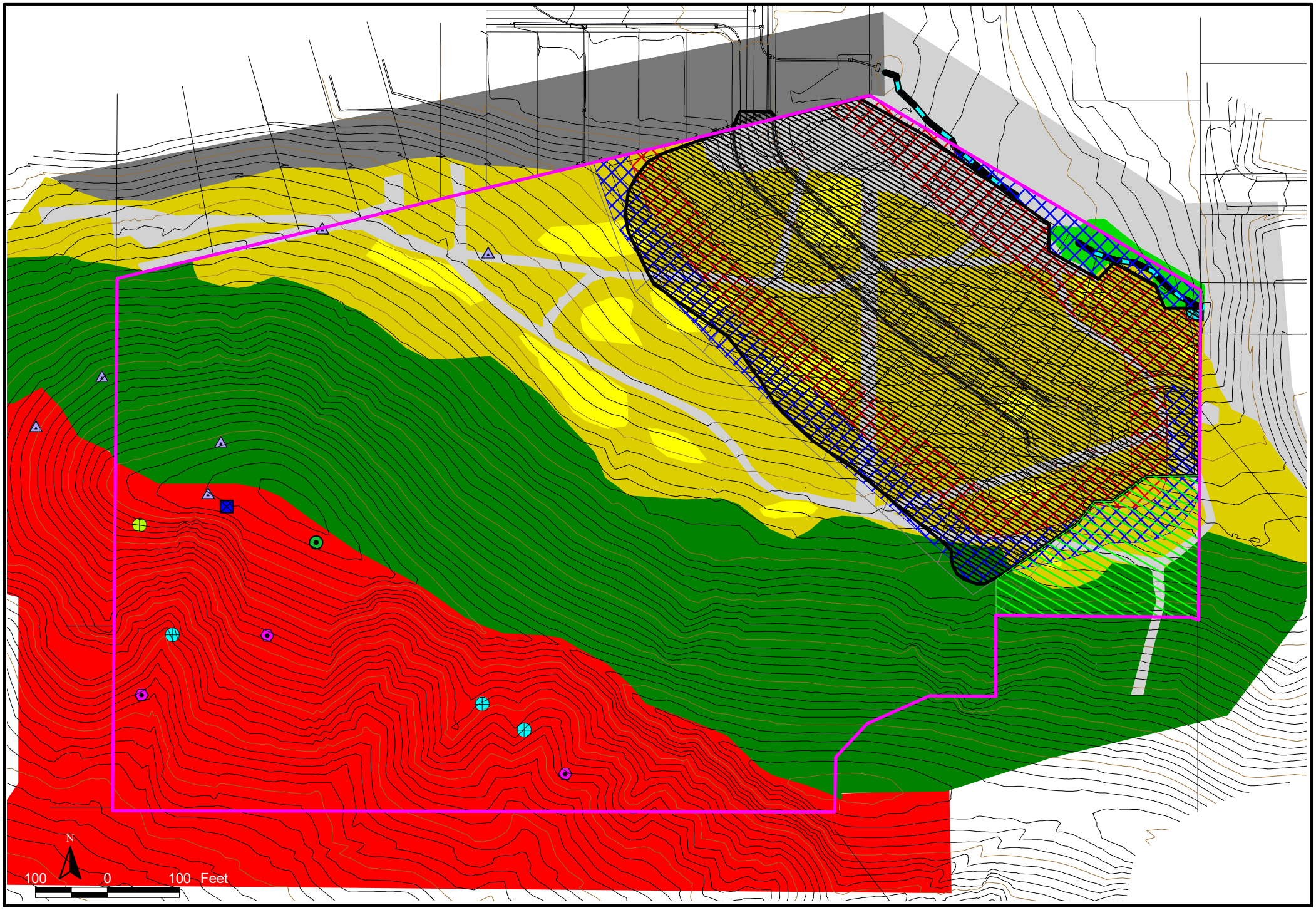


Property

Rufous crowned sparrow
Cactus Wren
Gnatcatcher

Plantago erecta
Palmers grappling hook
Jewel flower

FIGURE 5
Sensitive Species Map



B L U E

Property

Open Space (existing)

Grading Footprint

FMZ 1

FMZ 2

Ephemeral Drainage

Coastal Sage Scrub

Southern Mixed Chaparral

Willow Scrub

Native grassland

Non-native grassland

Disturbed habitat

Rufous crowned sparrow

Cactus Wren

Gnatcatcher

Plantago erecta

Palmers grappling hook

Jewel flower

FIGURE 6
Proposed Project Impacts

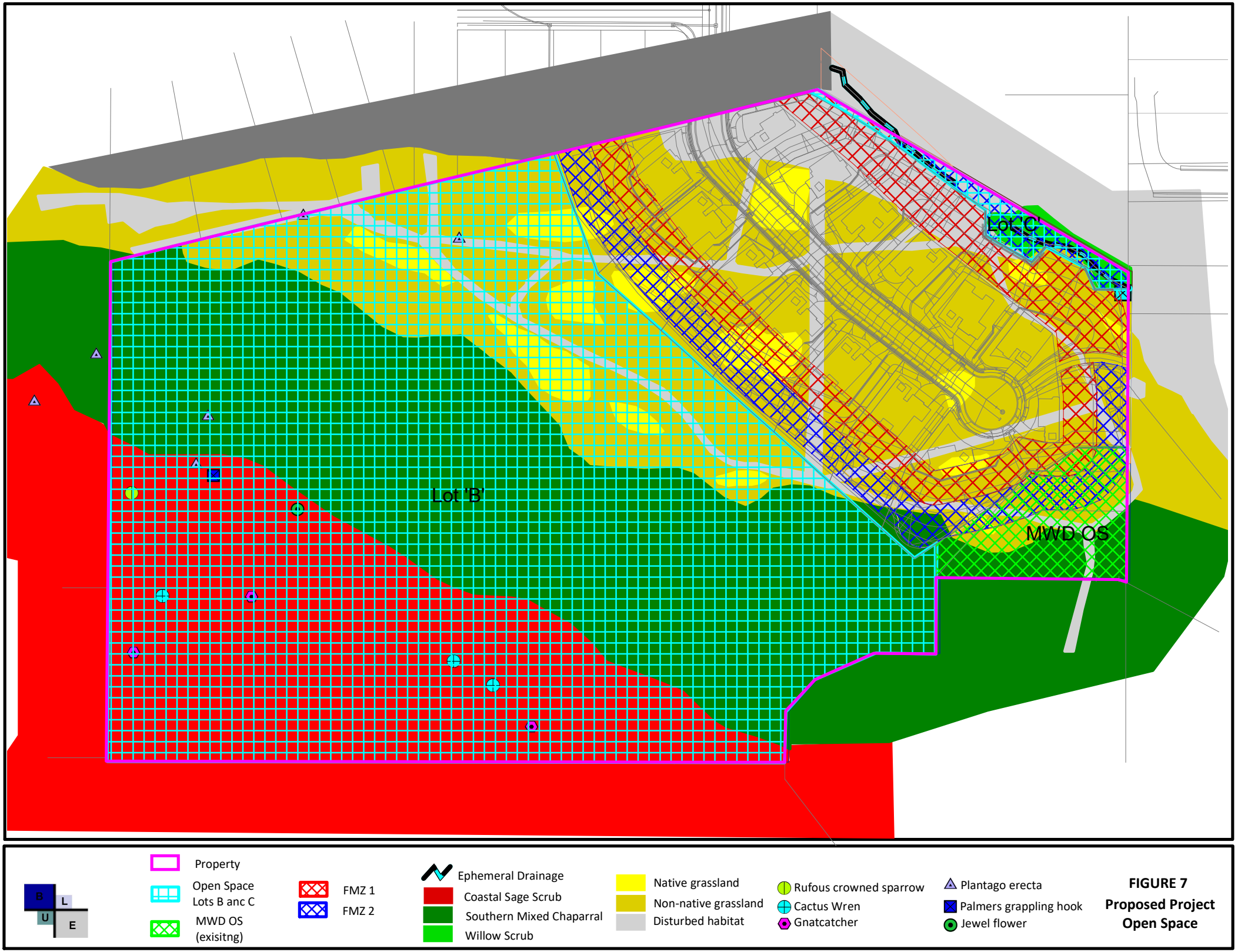


FIGURE 7
Proposed Project Open Space

Attachment G

Photograph 1 Looking East from the western property line; Across the Grasslands (Native and Non-Native)

Photograph 2 Looking North, adjacent to Eastern PL; Grasslands (non-Native) and Southern Riparian Scrub Habitat

Attachment H

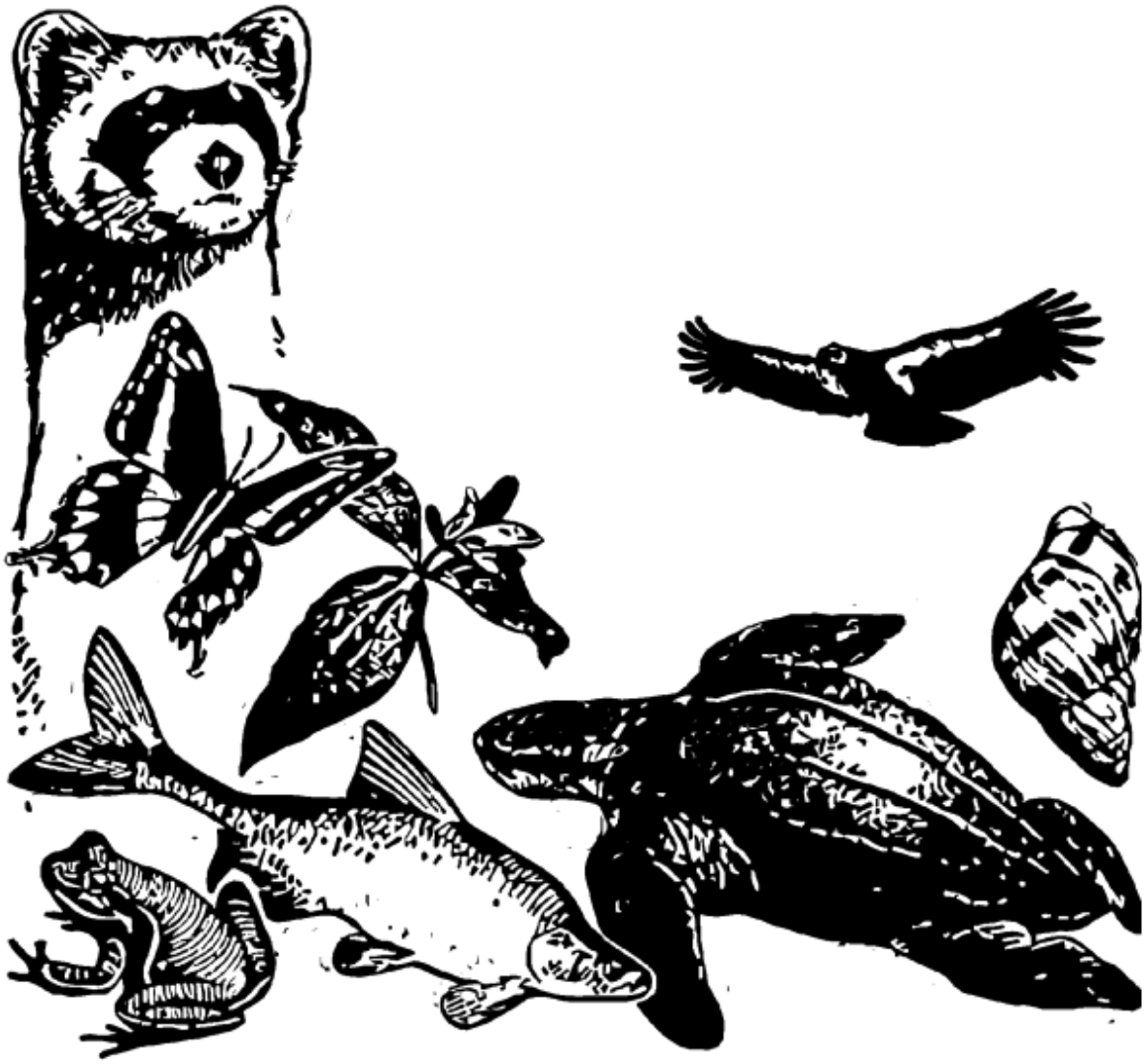
U.S. Fish & Wildlife Service

Tyler St

IPaC Trust Resources Report

Generated July 27, 2016 12:12 PM MDT, IPaC v3.0.8

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

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Migratory Birds 6
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Wetlands 11

U.S. Fish & Wildlife Service

IPaC Trust Resources Report

NAME

Tyler St

LOCATION

San Diego County, California

DESCRIPTION

Residential TM

IPAC LINK

https://ecos.fws.gov/ipac/project/TEG4J-ADXFB-A33B4-VYOIO-M4OXXQ

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Birds

California Least Tern Sterna antillarum browni — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B03X

Coastal California Gnatcatcher Polioptila californica californica — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08X

Least Bell's Vireo Vireo bellii pusillus — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B067

Light-footed Clapper Rail Rallus longirostris levipes — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B04B

Southwestern Willow Flycatcher Empidonax traillii extimus — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B094

Crustaceans

Riverside Fairy Shrimp Streptocephalus woottoni — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K03F

San Diego Fairy Shrimp Branchinecta sandiegonensis — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K049

Flowering Plants

California Orcutt Grass Orcuttia californica — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q1ZO

Del Mar Manzanita Arctostaphylos glandulosa ssp. crassifolia — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q036

San Diego Ambrosia Ambrosia pumila — Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q01H

San Diego Button-celery Eryngium aristulatum var. parishii — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q1W9

San Diego Mesa-mint Pogogyne abramsii — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q20P

San Diego Thornmint Acanthomintha ilicifolia — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q00E

Spreading Navarretia Navarretia fossalis — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2E7

Thread-leaved Brodiaea Brodiaea filifolia — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q09H

Willowy Monardella Monardella viminea — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q18M

Insects

Quino Checkerspot Butterfly Euphydryas editha quino (=E. e. wrighti) — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=I00P

Critical Habitats

This location overlaps all or part of the critical habitat for the following species:

Coastal California Gnatcatcher Polioptila californica californica

Final designated critical habitat
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08X#crithab

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

Allen's Hummingbird Selasphorus sasin — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0LI

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Bell's Sparrow Amphispiza belli — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HE

Bell's Vireo Vireo bellii — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JX

Black Oystercatcher Haematopus bachmani — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0KJ

Black-chinned Sparrow Spizella atrogularis — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IR

Brewer's Sparrow Spizella breweri — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HA

Burrowing Owl Athene cunicularia — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC

Cactus Wren Campylorhynchus brunneicapillus — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FZ

Costa's Hummingbird Calypte costae — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JE

Fox Sparrow Passerella iliaca — Bird of conservation concern
Season: Wintering

Green-tailed Towhee Pipilo chlorurus — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IO

Gull-billed Tern Gelochelidon nilotica — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JV

Lawrence's Goldfinch Carduelis lawrencei — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J8

Least Bittern Ixobrychus exilis
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B092

Lesser Yellowlegs Tringa flavipes — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MD

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ

Long-billed Curlew Numenius americanus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S

Marbled Godwit Limosa fedoa — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JL

Mountain Plover Charadrius montanus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B078

Nuttall's Woodpecker Picoides nuttallii — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HT

Oak Titmouse Baeolophus inornatus — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MJ

Olive-sided Flycatcher Contopus cooperi — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU

Red-crowned Parrot Amazona viridigenalis — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0GO

Rufous-crowned Sparrow Aimophila ruficeps — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MX

Sage Thrasher Oreoscoptes montanus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0ID

Short-billed Dowitcher Limnodromus griseus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JK

Short-eared Owl Asio flammeus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD

Snowy Plover Charadrius alexandrinus — Bird of conservation concern
Season: Breeding

Western Grebe aechmophorus occidentalis — Bird of conservation concern

Season: Wintering

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA

Yellow Warbler dendroica petechia ssp. brewsteri — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EN

Red Knot Calidris canutus ssp. roselaari — Bird of conservation concern

Season: Wintering

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0G6

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands in this location

Attachment I

APPENDIX C

BLUE CONSULTING GROUP
BIOLOGY ▪ LAND USE & ▪ ENTITLEMENTS

April 16, 2013

Susie Tharratt
U.S. Fish and Wildlife Office
6010 Hidden Valley Road
Suite 101
Carlsbad, CA 92009

Subject: Results (Positive) of focused coastal California gnatcatcher surveys on an approximately 27.4 acre site in San Diego County, California

Ms. Tharratt,

Due to the presence of appropriate habitat, including an area of Critical California gnatcatcher habitat, protocol surveys for the coastal California gnatcatcher (*Polioptila californica californica*) were completed on the approximately 27.4 acre property(s) located at the terminus of Tyler St. in the City of Santee, County of San Diego. The site is located just south of Mesa Heights Road, approximately 2000 feet south of the 52 Freeway and approximately 2000 feet west of the 125 Freeway, on the La Mesa USGS 7.5 minute quadrangle. BLUE Consulting Group hired biologist Erik LaCoste (TE 027736-5) to complete the protocol surveys. The purpose of the protocol surveys was to determine the status of coastal California gnatcatchers (CAGN) on the Property. This report describes the methods, results, and conclusions of the completed protocol surveys.

Site Location and Description

The property is approximately 27.4 acres and is located in the City of Santee, San Diego County. Primary access to the property is at the terminus of Tyler Street which dead-ends at the subject properties northern property line (Figures 1-3).

The site is dominated by a ridgeline running east-west with south facing slopes in the southern portion of the property, north facing slopes in the center of the property and a gradually sloping/flat area in the northern portion. The northern, flat and disturbed portion of the property appears to have been previously utilized as an agricultural area. There is an ephemeral drainage channel supporting riparian habitat running along the eastern and northern property line.

P.O. BOX 501115 SAN DIEGO, CA 92150 ☎ 858.391.8145 MIKE@BLUECONSULTING.COM

During the biological surveys, a total of six vegetation communities were mapped on-site: Diegan coastal sage scrub, mixed chaparral, riparian scrub, jurisdictional unvegetated ephemeral drainage, disturbed habitat, and non-native grasslands. Table 1 summarizes the acreage of each land cover type and Figure 4 depicts their location.

Onsite, the coastal sage scrub habitat community which is generally located on the south facing slopes, are within the designated U.S. Fish and Wildlife Service (USFWS) Critical Habitat area for the California gnatcatcher.

TABLE 1
PLANT COMMUNITIES

Plant Community	Tier	Acres
Diegan coastal sage scrub	II	6.36
Chaparral	III	8.89
Riparian Scrub	I	0.24
Jurisdictional Unvegetated Channel	I	120 sq. ft.
Non-Native Grasslands	III	9.94
Disturbed habitat	IV	1.97
TOTAL		27.40

Erik LaCoste (TE 027736-5), who is permitted by the U.S. Fish and Wildlife Service (USFWS) to conduct surveys for the coastal California gnatcatcher, conducted the 2013 monitoring surveys on the property. Mr. LaCoste conducted three protocol surveys, according to the USFWS gnatcatcher survey protocol (Table 2).

TABLE 2
SURVEY DETAILS

Date	Survey Type	Time	Conditions Temp (ºF), Wind (mph) begin and end, Sky	Biologists
3-14-31	CAGN	0830-0930	52-68,1-2, clear	EL*
3-21-31	CAGN	0830-1000	61-65,0-2, 30% haze - clear	EL
3-28-13	CAGN	0815-0945	55-69,0-3, 25% haze - 25% haze	EL

*EL = Erik LaCoste

All areas supporting coastal sage scrub on site, as well as within appropriate habitat and around the property (offsite) extending approximately 200 feet were carefully searched for the presence or absence of coastal California gnatcatchers.

Survey Results and Conclusions

Onsite, the same pair (2) of gnatcatchers was observed on the ridgeline and on the south facing slope during all three surveys (Figure 5). In addition to the gnatcatcher pair, a cactus wren *(Campylorhynchus brunneicapillus)* pair was observed on the south facing slope (on all three surveys) and Southern California rufous-crowned sparrow *(Aimophila ruficeps canescens)* were observed on the first and second surveys on the ridgeline area.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Eric LaCoste — 5/20/13 Date

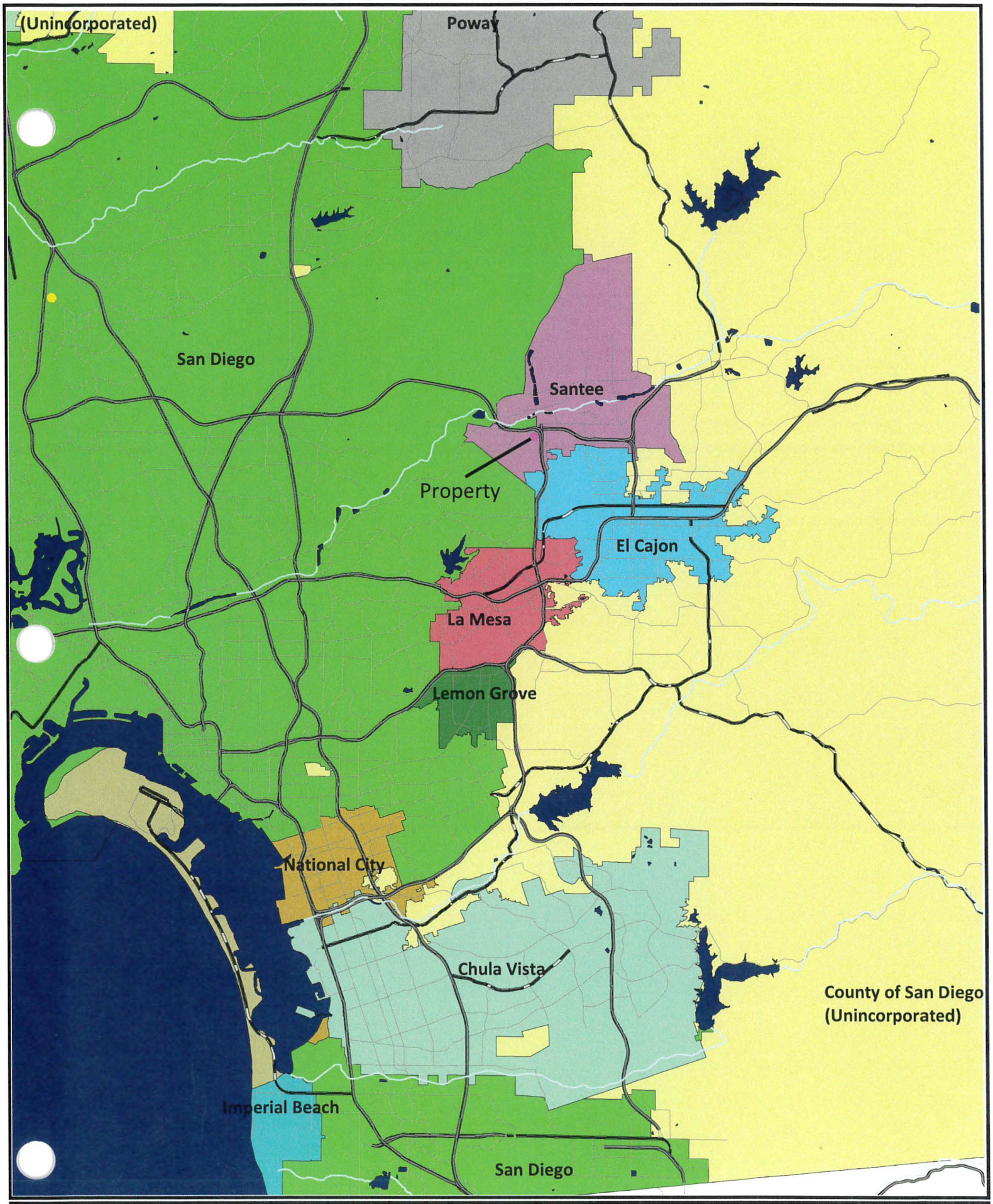
Should you have any questions or concerns regarding this survey, please do not hesitate to contact me.

Sincerely,

Michael Jefferson
President
BLUE Consulting Group

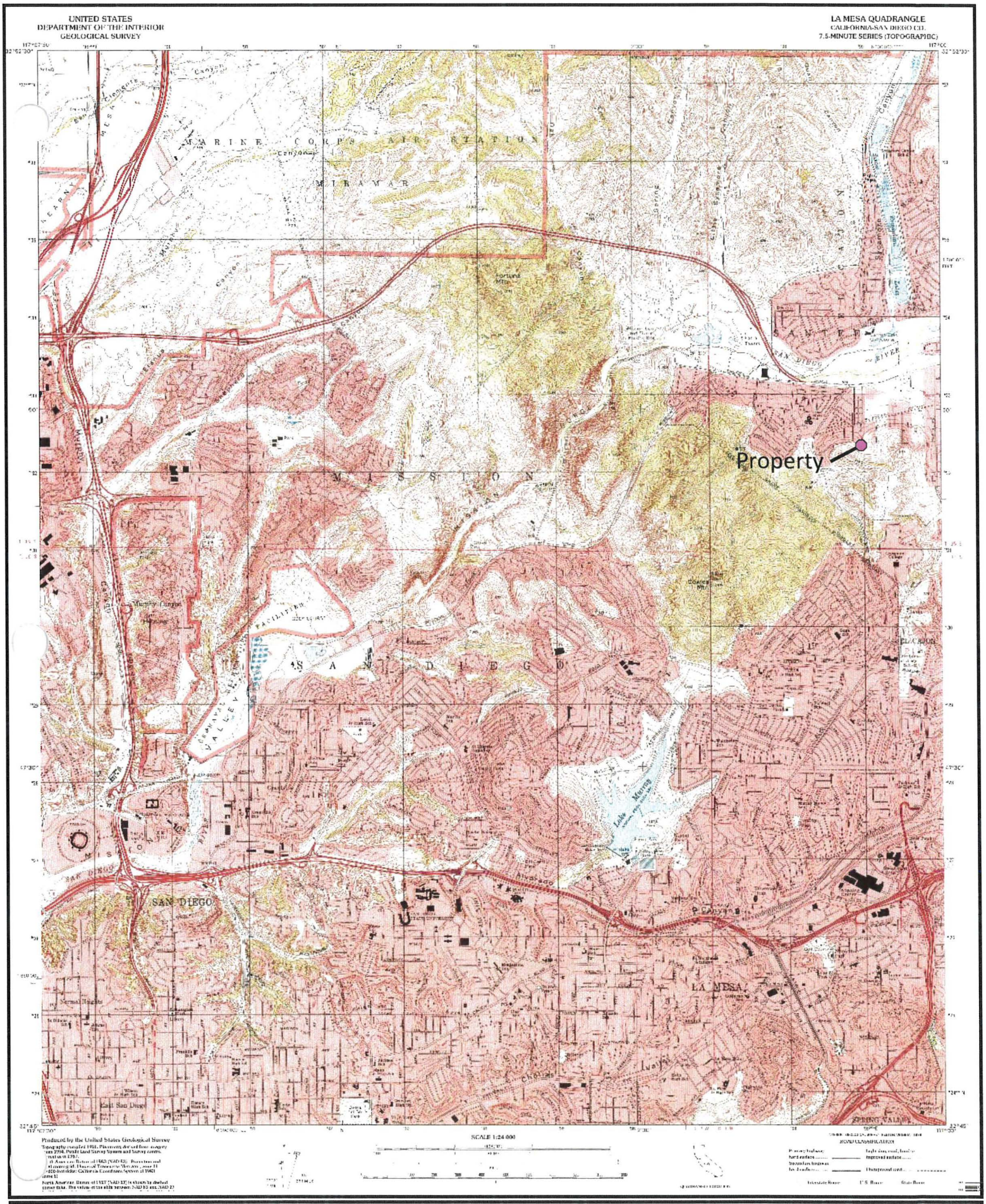
Attached: Data Sheets

P.O. Box 501115 San Diego, CA 92150 858.391.8145 Mike@blueconsulting.com



Property

FIGURE 1
Regional Project Location

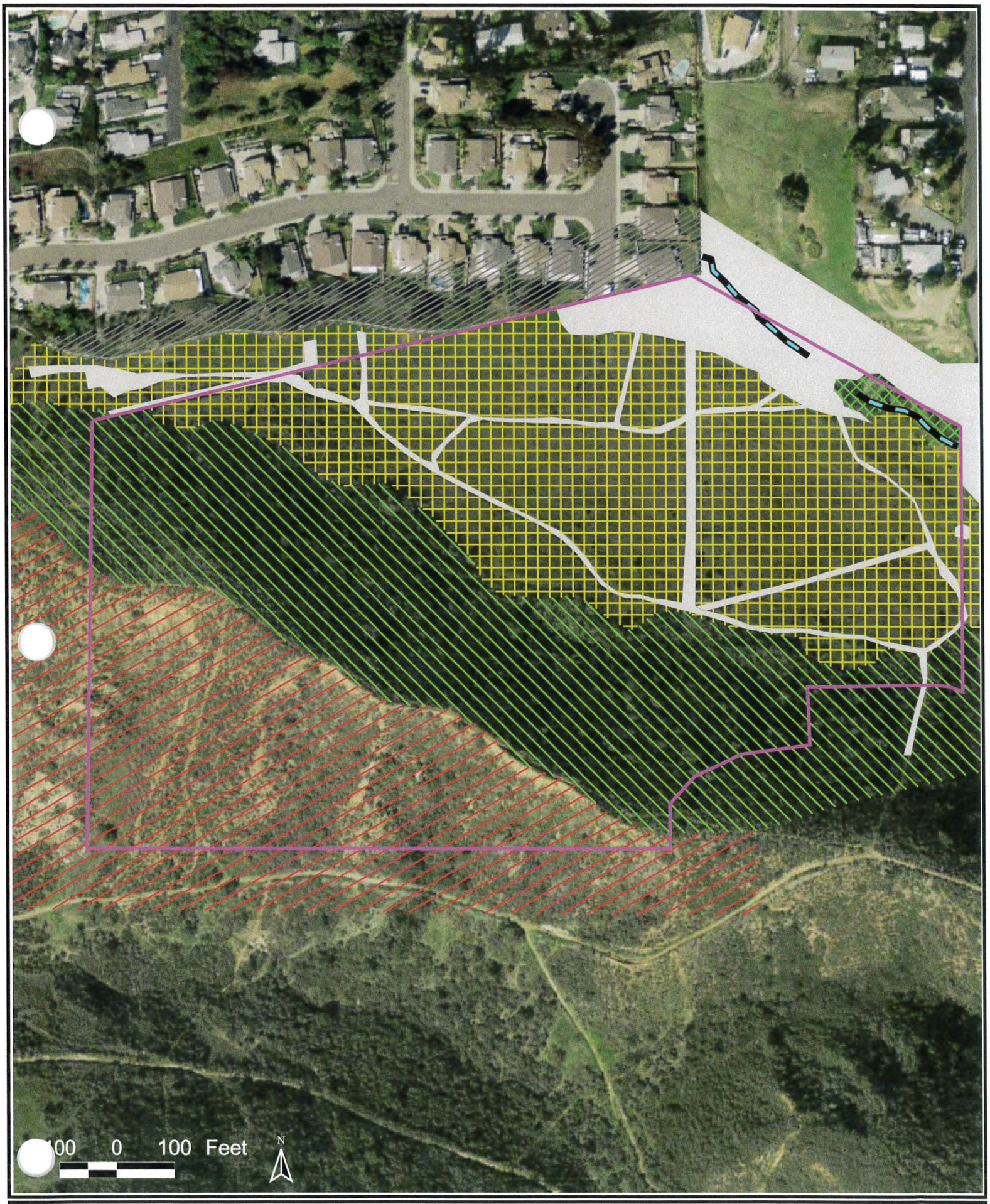


Property (approximately)

FIGURE 2
Project Location

Property

FIGURE 3
Property Aerial



B L U E

Property

Coastal Sage Scrub
Chaparral
Riparian scrub

Epehemeral drainage channel
Non-native grassland
Disturbed habitat

FIGURE 4
Habitat Map

B L U E

Property

CAGN Critical Habitat

Gnatcatcher

Rufous crowned sparrow

Cactus Wren

Plantago erecta

Palmers grappling hook

Jewel flower

FIGURE 5
Sensitive Species Location Map

ATTACHMENTS

P.O. Box 501115 San Diego, CA 92150 858.391.8145 Mike@blueconsulting.com

Field Data Sheet

Project: Santee (Tyler street) Date of Survey: 3/14/13 Page 1 of 1
Type of Survey: CAGN Survey Number: 1 of 3
Personnel: Erik LaCoste (Permit # TE027736-5)
Notes:

Time		Temp (°F)	Wind (mph)	Sky (% clouds)	Precipitation
Start	0800	52	0-1	0	0
Finish	0930	68	1-2	0	0

	Species		
	Lesser GoldFinch		
	House Finch		
*	Cactus wren		
	ANNA's Hummingbird		
	California Quail		
	Blue Gray Gnatcatcher		
*	Coastal California Gnatcatcher		
	Mourning Dove		
	California thrasher		
	Wrentit		
	Northern mockingbird		
*	S.c. Rufous Crown sparrow		
	Sharp Shinned Hawk		
	Bushtit		
	California towhee		
	Western Kingbird		
	Bewick's Wren		
	Gull sp.		
	Red tailed hawk		
	Black Phoebe.		

Notes:

Gnatcatcher pair located on Ridgeline & South Facing slope (SEE Map)
Cactus Wren Pair Located on South Facing slope -(See map)

Southern California Rufous Sparrow - Ridgeline area

Field Data Sheet

Project: Santee (Tyler Street) Date of Survey: 3/21/13 Page 1 of 1
Type of Survey: CAGN Survey Number: 2 of 3
Personnel: Erik LaCoste (Permit # TE027736-5)
Notes:

Time		Temp (°F)	Wind (mph)	Sky (% clouds)	Precipitation
Start	830	61	0-2	30 Haze	0
Finish	1000	65	0-2	0	0

Species		
House finch	* Cactus wren	
Nuttall's woodpecker	* Coastal California Gnatcatcher	
Bushtit	Bewicks wren	
House wren	American Kestrel	
Western Kingbird	Red tailed hawk	
Anna's Hummingbird		
* S.C. Rufous Crown sparrow		
California towhee		
White crown sparrow		
Hermit thrush		
lesser Goldfinch		
wrentit		
Yellow Rump warbler		
American Crow		
Says Phoebe		
northern mockingbird		
Pacific slope flycatcher		
California Quail		
Mourning Dove		
spotted towhee		
White throat swift		
Western Scrub Jay		
Cooper hawk		

Notes:

CAGN - Same as survey 1
CACW - Same as survey 1

Field Data Sheet

Project: Santee (Tylor Street) Date of Survey: 3/28/13 Page 1 of 1
Type of Survey: CAGN Survey Number: 3 of 3
Personnel: Erik LaCoste (Permit # TE027736-5)
Notes:

Time		Temp (°F)	Wind (mph)	Sky (% clouds)	Precipitation
Start	0815	55	0-1	25% Haze	0
Finish	0945	69	1-3	25% Haze	0

Species		
Northern Mockingbird		
Mourning Dove.		
Lesser Gold Finch		
House finch		
Anna's Hummingbird		
House wren		
Yellow rumped Warbler		
Bewick's wren		
Coopers hawk		
* Cactus wren		
* Coastal California Gnatcatcher		
California Quail		
California towhee		
Wrentit		
Red tail hawk		
Northern Rough wing's Swallow		
Western Kingbird		
Cliff swallow		
White throat Swift		
Common Raven		
Red shouldered hawk		
White crown Sparrow		

Notes:

CAGN - Same pair - west end
CACW - Same Pair - multiple nest visits - West end.

BLUE CONSULTING GROUP
BIOLOGY ▪ LAND USE & ▪ ENTITLEMENTS

April 16, 2013

Susie Tharratt
U.S. Fish and Wildlife Office
6010 Hidden Valley Road
Suite 101
Carlsbad, CA 92009

Subject: Results (Negative) of focused Quino Checkerspot Butterfly surveys on an approximately 27.4 acre site in San Diego County, California

Ms. Tharratt,

Due to the presence of appropriate habitat and patches of *Plantago erecta*, protocol surveys for the Quino Checkerspot Butterfly (QCB; *Euphydryas editha quino*) were completed on the approximately 27.4 acre property(s) located at the terminus of Tyler St. in the City of Santee, County of San Diego. The site is located just south of Mesa Heights Road, approximately 2000 feet south of the 52 Freeway and approximately 2000 feet west of the 125 Freeway, on the La Mesa USGS 7.5 minute quadrangle. BLUE Consulting Group hired biologist Erik LaCoste (TE 027736-5) to complete the protocol surveys. The purpose of the protocol surveys was to determine the status of QCB on the Property. This report describes the methods, results, and conclusions of the completed protocol surveys.

Site Location and Description

The property is approximately 27.4 acres and is located in the City of Santee, San Diego County. Primary access to the property is at the terminus of Tyler Street which dead-ends at the subject properties northern property line (Figures 1-3).

The site is dominated by a ridgeline running east-west with south facing slopes in the southern portion of the property, north facing slopes in the center of the property and a gradually sloping/flat area in the northern portion. The northern, flat and disturbed portion of the property appears to have been previously utilized as an

P.O. BOX 501115 SAN DIEGO, CA 92150 ☎858.391.8145 MIKE@BLUECONSULTING.COM

agricultural area. There is an ephemeral drainage channel supporting riparian habitat running along the eastern and northern property line. Designated Critical Habitat for the California gnatcatcher is located onsite.

TABLE 1
PLANT COMMUNITIES

Plant Community	Tier	Acres
Diegan coastal sage scrub	II	6.36
Chaparral	III	8.89
Riparian Scrub	I	0.24
Jurisdictional Unvegetated Channel	I	120 sq. ft.
Non-Native Grasslands	III	9.94
Disturbed habitat	IV	1.97
TOTAL		27.40

During the biological surveys, a total of six vegetation communities were mapped on-site: Diegan coastal sage scrub, mixed chaparral, riparian scrub, jurisdictional unvegetated ephemeral drainage, disturbed habitat, and non-native grasslands. Table 1 summarizes the acreage of each land cover type and Figure 4 depicts their location.

Onsite, the observed plantago patches were generally along the western property line and on the ridgeline within all upland habitat types. While there were a number of small patches observed, a total of 4 larger patches or groups of plantago erecta were observed onsite; three areas were observed off site to the west of the property line.

Erik LaCoste (TE 027736-5), who is permitted by the U.S. Fish and Wildlife Service (USFWS) to conduct surveys for the Quino Checkerspot butterfly, conducted the 2013 monitoring surveys on the property. Mr. LaCoste conducted 6 protocol surveys, according to the USFWS QCB survey protocol (Table 2).

TABLE 2
SURVEY DETAILS

Date	Survey Type	Time	Conditions Temp (ºF), Wind (mph) begin and end, Sky	Biologists
3-14-31	QCB	0930-1200	64-79,2-4, clear	EL*
3-21-31	QCB	1000-1200	65-68,0-2, clear	EL
3-28-31	QCB	0830-0930	69-76,1-3, 2-5% cover	EL
4-2-31	QCB	1000-1200	61-65,0-2, clear	EL
4-10-13	QCB	1245-1445	76-77,4-8, clear	EL
4-18-13	QCB	0900-1030	68-75,2-8,clear	EL

*EL = Erik LaCoste

All areas supporting *Plantago erecta* on site, as well as within approximately 200 feet were carefully searched for the presence or absence of QCB and/or QCB larvae.

Survey Results and Conclusions

The locations of the plantago erecta are shown in Figure 5. No QCB were observed onsite.

Butterfly species observed include: funeral duskywing, Behr's metalmark, perplexing hairstreak, painted lady, anise swallowtail, brown elfin, southern blue, west coast lady, cabbage white, and monarch.

Of note, on the 4/10/13 survey, a California gnatcatcher nest with 4 eggs was observed on the ridgeline in a California sagebush adjacent to the dirt trail (32.827217,-117.012260).

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Eric LaCoste — 5/20/13 Date

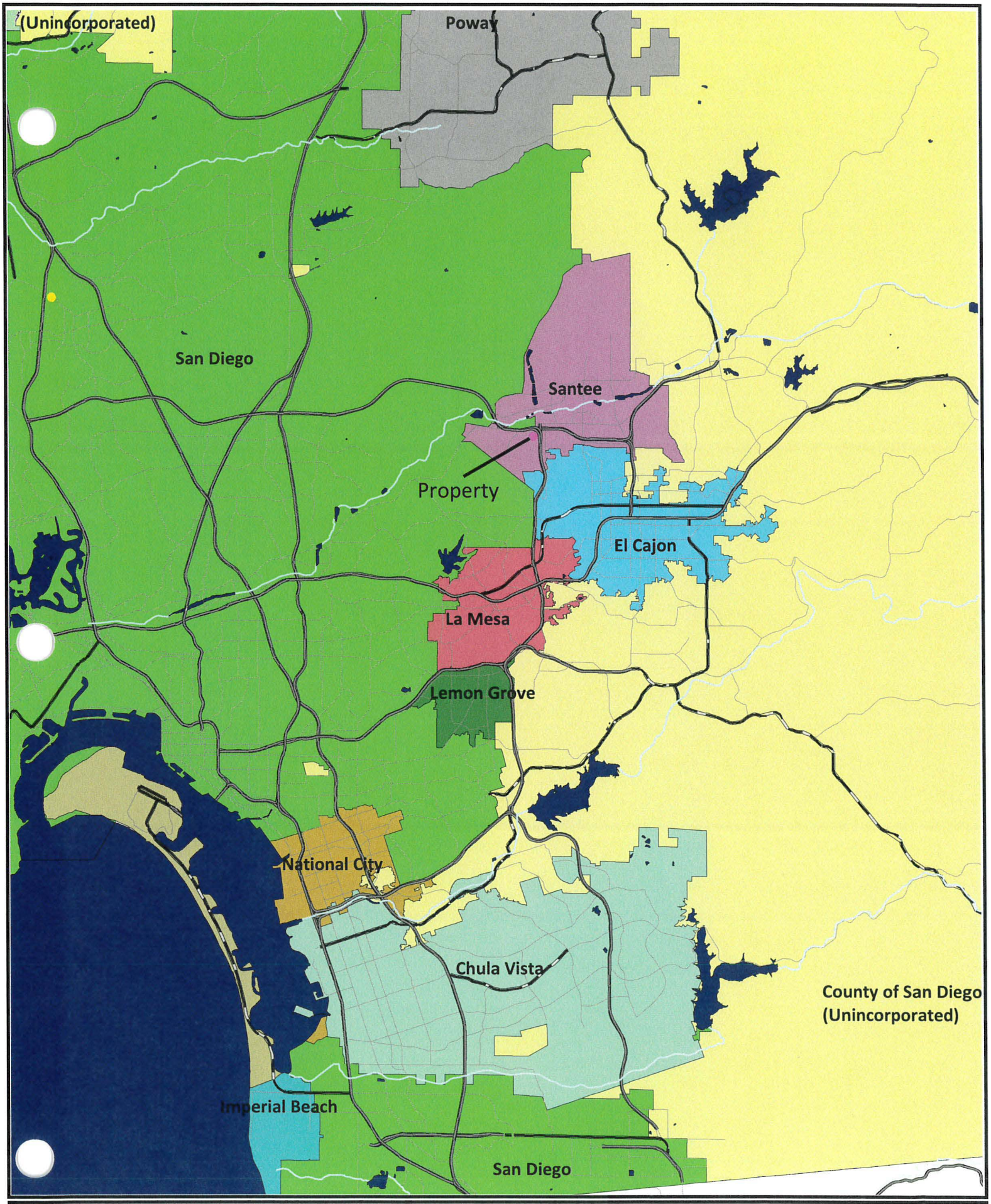
Should you have any questions or concerns regarding this survey, please do not hesitate to contact me.

Sincerely,

Michael Jefferson
President
BLUE Consulting Group

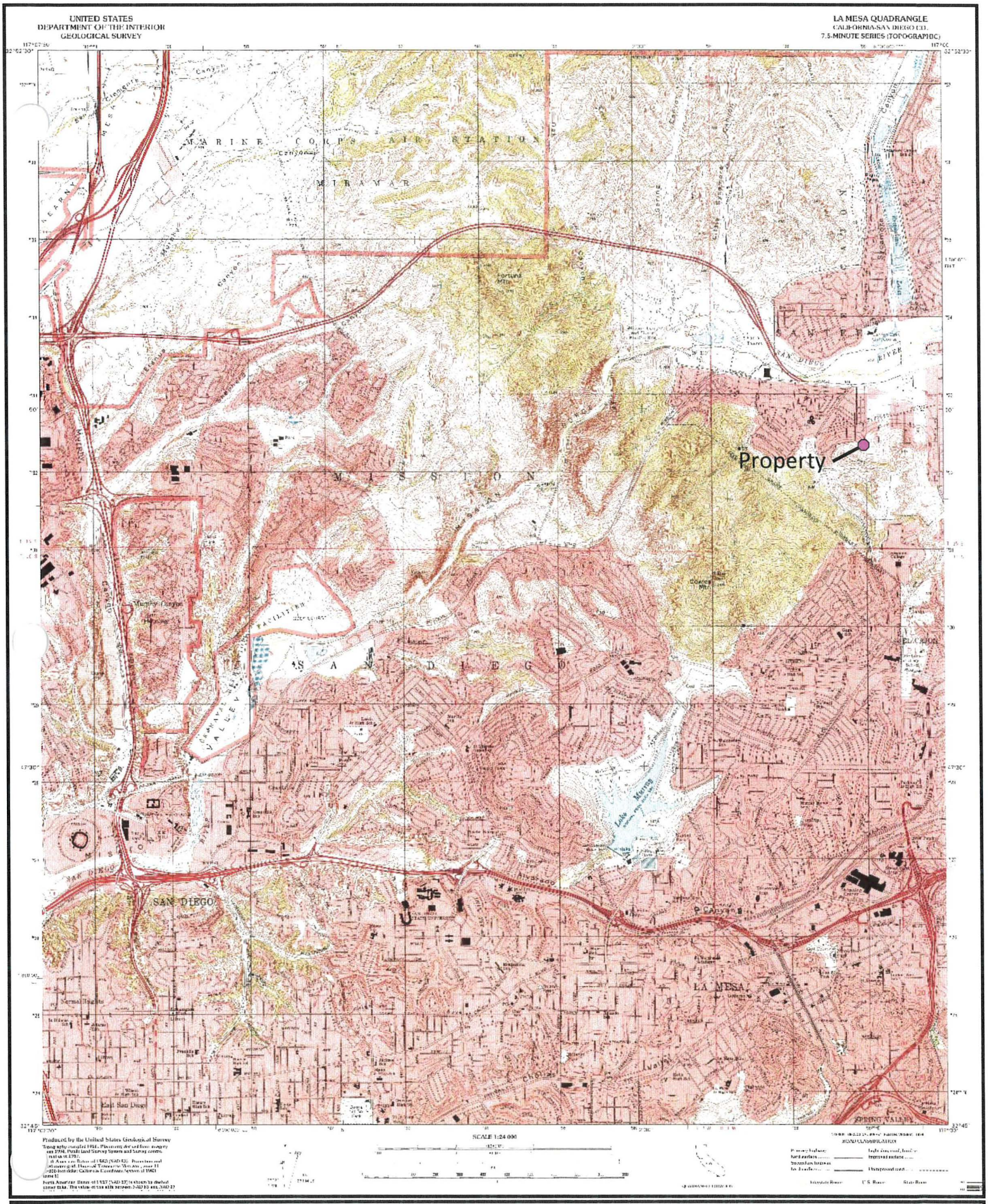
Attached: Data Sheets 1-6

P.O. Box 501115 San Diego, CA 92150 858.391.8145 Mike@blueconsulting.com



Property

FIGURE 1
Regional Project Location

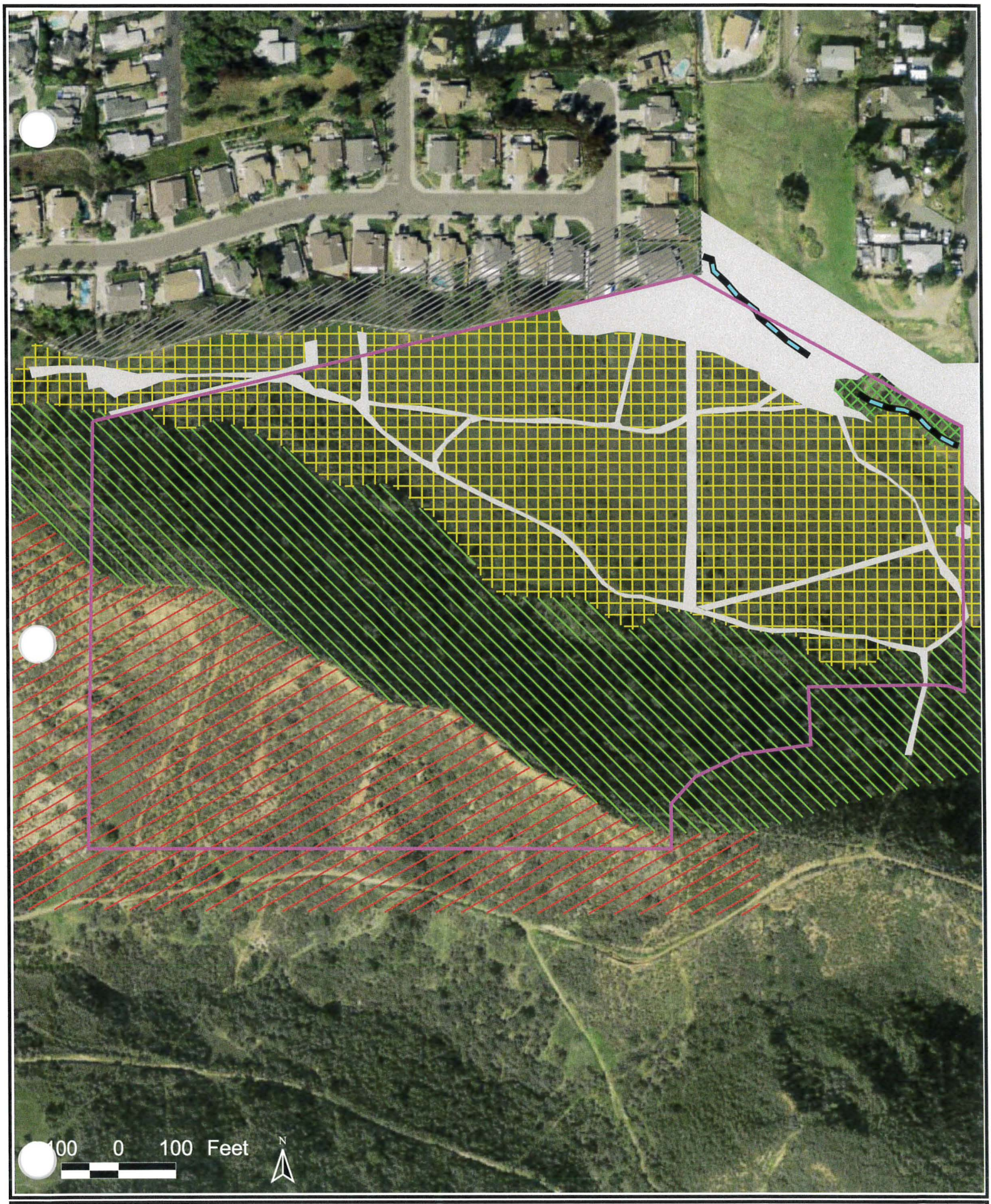


Property (approximately)

FIGURE 2
Project Location

Property

FIGURE 3
Property Aerial



Property

Coastal Sage Scrub

Chaparral

Riparian scrub

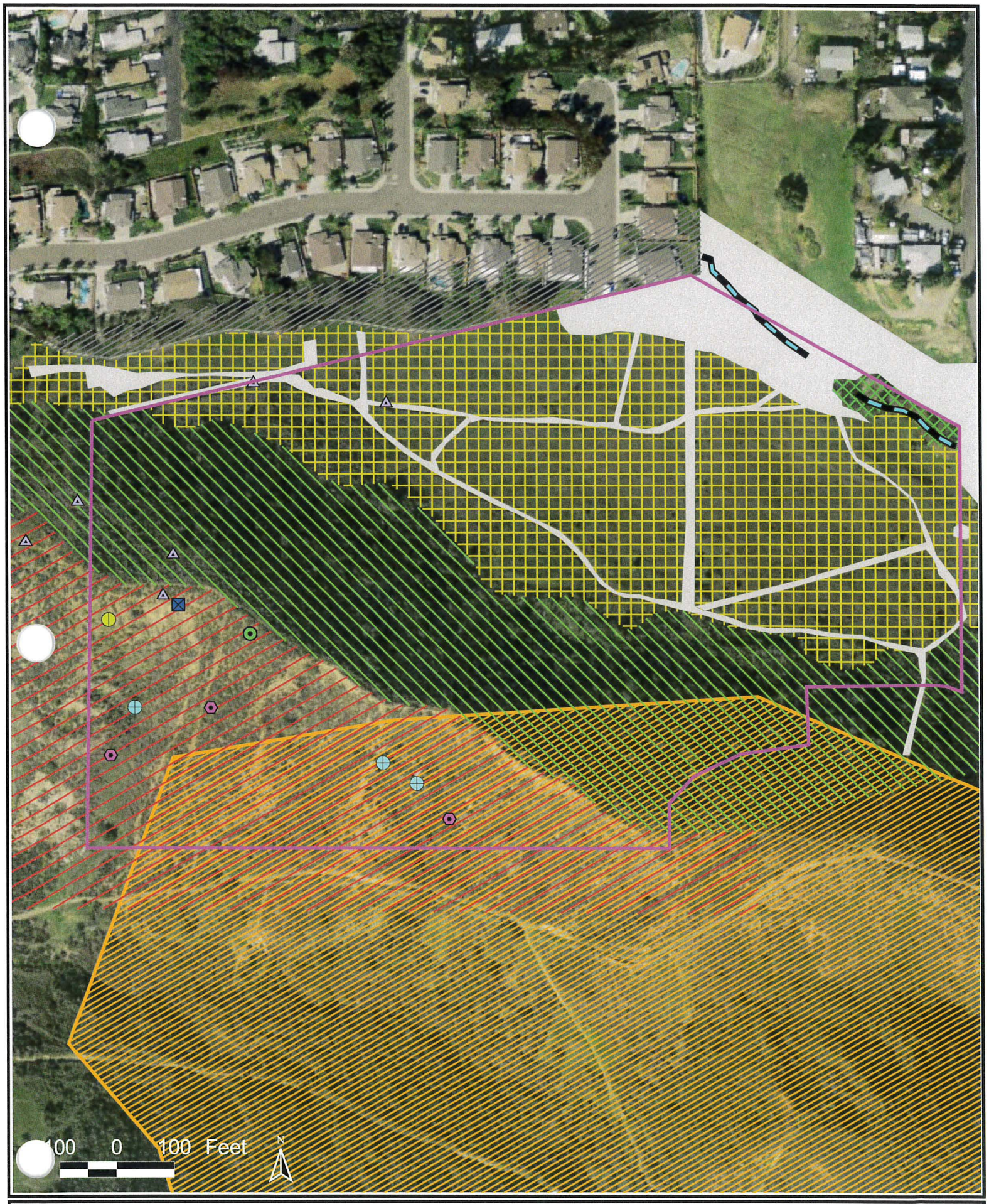
Epehemeral drainage channel

Non-native grassland

Disturbed habitat

FIGURE 4

Habitat Map



Property

CAGN Critical Habitat

Gnatcatcher

Rufous crowned sparrow

Cactus Wren

Plantago erecta

Palmers grappling hook

Jewel flower

FIGURE 5
Sensitive Species Location Map

ATTACHMENTS

P.O. Box 501115 San Diego, CA 92150 858.391.8145 Mike@blueconsulting.com

Field Data Sheet

Project: Santee (Taylor St.) Date of Survey: 3/14/13 Page 1 of 1
Type of Survey: Quino checkerspot Butterfly Survey Number: 1 of 6
Personnel: Erik LaCoste TE027736
Notes:

Time		Temp (°F)	Wind (mph)	Sky (% clouds)	Precipitation
Start	930	64	1-2	0	0
Finish	1200	79	2-4	0	0

Species			Bloomer's
Funereal Duskywing	~~IIII~~	~~IIII~~ III 13	DEERWEED
Behrs metalmark	II	2	POPCORN FLOWER
Perplexing hairstreak	~~IIII~~	5	Monkey Flower
Painted Lady	II	2	Raphanus sativa
Anise Swallowtail	II	2	Erodium sp.
			Hypochaeris glabra
			Lomatium dasy....
			Blue eye Grass
			Johny Jumpups.

Notes:

Many Plantago erecta locations - see map

Ridgeline is excellent - open Background mixed w/ CSS.

Field Data Sheet

Project: Santee (Taylor St.) Date of Survey: 3/21/13 Page 1 of 1
Type of Survey: QCB Survey Number: 2 of 6
Personnel: Erik LaCoste TE027736
Notes:

Time		Temp (°F)	Wind (mph)	Sky (% clouds)	Precipitation
Start	1000	65	0-2	0 Haze	0
Finish	1200	68	0-2	0 Haze	0

Species			Bloomers (new)
Funereal Duskywing	~~IIII~~ ~~IIII~~	10	Plantago erecta
Perplexing hairstreak	~~IIII~~ III	8	Mirabilis laevis crassifolus
Behrs Metalmark	IIII	4	Chia
Anise swallowtail	I	1	San Diego Sunflower
Brown Elfin	I	1	Phacelia Distans
			Ranchers f. poleneck
			Mustard sp.
			Sonchus Oleraceus
			Calystegia macrostegia
			Sanicula arguta
			Shooting stars
			Miners Lettuce
			Galium ~~sp~~ Nuttalianus

Notes:

Many small patches of Plantago - See Map.

Field Data Sheet

Project: Santee (Taylor St.) Date of Survey: 3/28/13 Page 1 of 1
Type of Survey: QCB Survey Number: 3 of 6
Personnel: Erik LaCoste TE 027736
Notes:

Time		Temp (°F)	Wind (mph)	Sky (% clouds)	Precipitation
Start	1000	69	1-3	2%	0
Finish	1145	76	1-3	5%	0

Species			Bloomers (new)
Funereal Duskywing	~~HH~~ I	6	Sanicula Bipinnatifolia.
Perplexing hairstreak	~~HH~~ IIII	9	Black Sage
Behr's metalmark	III	3	
Southern Blue	I	1	

Notes:

Field Data Sheet

Project: Santee (Taylor st.) Date of Survey: 4/2/13 Page 1 of 1
Type of Survey: QCB Survey Number: 4 of 6
Personnel: Erik LaCoste TE027736
Notes:

Time		Temp (°F)	Wind (mph)	Sky (% clouds)	Precipitation
Start					
Finish					

Species			Bloomers (new)
Funereal Duskywing	𝍸 𝍸 III	13	Malva parviflora
Behrs Metalmark	𝍸 𝍸 𝍸 III	18	
Perplexing hairstreak	IIII	4	
Brown elfin	II	2	

Notes:

Plantago still green & fresh all locations.

Field Data Sheet

Project: Santee (Taylor St.) Date of Survey: 4/10/13 Page 1 of 1
Type of Survey: QCB Survey Number: 5 of 6
Personnel: Erik LaCoste TE027736
Notes:

Time		Temp (°F)	Wind (mph)	Sky (% clouds)	Precipitation
Start	1245	76	4-7	0	0
Finish	245	77	4-8	0	0

Species			Bloomers (new)
Behrs metalmark	~~IIII~~ ~~IIII~~ IIII	15	None.
Funereal Duskywing	III	3	
West Coast Lady	I	1	
Unidentified Blue	I	1	

Notes:

By Chance - Locate CAGN Nest w/ 4 eggs in Artemisia on Ridgeline - on trail
32.827217, -117.012260

Plantago green on North Slope - Drying on Ridgeline

Field Data Sheet

Project: Santee (Taylor St.) Date of Survey: 4/18/13 Page 1 of 1
Type of Survey: QCB Survey Number: 6 of 6
Personnel: Erik LaCoste TE027736a
Notes:
Last Survey

Time		Temp (°F)	Wind (mph)	Sky (% clouds)	Precipitation
Start	0900	68	2-6	0	0
Finish	1030	75	4-8	0	0

Species			Bloomers (new)
Anise Swallowtail	1	1	None.
Behrs Metalmark	IIII	5	
Cabbage white	1	1	
West Coast lady	1	1	
Funereal Duskywing	1	1	
Monarch	1	1	

Notes:

Plantago mostly Dry & to seed

APPENDIX D

CULTURAL RESOURCES STUDY FOR THE TYLER STREET RESIDENTIAL PROJECT

CITY OF SANTEE, SAN DIEGO COUNTY, CALIFORNIA

APNs 386-290-08, -09, -10, -13, -14, -20, -22, -24, and -26

Lead Agency:

City of Santee
10601 Magnolia Avenue
Santee, California 92071
(619) 258-4100

Preparer:

Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064
(858) 484-0915

Signature

Project Proponent:

Tyler Street TM
4204 Jutland Drive, Suite A2
San Diego, California 92117

May 3, 2018

Archaeological Database Information

Author:	Andrew J. Garrison and Brian F. Smith
Consulting Firm:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
Client/Project Proponent:	Tyler Street TM 4204 Jutland Drive, Suite A2 San Diego, California 92117
Report Date:	May 3, 2018
Report Title:	Cultural Resources Study for the Tyler Street Residential Project, City of Santee, San Diego County, California
Type of Study:	Phase I Cultural Resources Survey and Phase II Site Evaluation
Assessors Parcel Numbers:	386-290-08, -09, -10, -13, -14, -20, -22, -24, and -26
New Sites:	None
Updated Site:	SDI-11,542H and SDI-11,543
USGS Quadrangle:	*La Mesa, California* (7.5 minute)
Acreage:	Approximately 27.4 acres
Key Words:	Survey; historic refuse; SDI-11,542H; prehistoric lithic scatter; SDI-11,543; both sites evaluated as not significant; monitoring of grading is recommended; City of Santee.

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List of Acronyms

APE	Area of Potential Effect
APN	Assessor's Parcel Number
BFSA	Brian F. Smith and Associates, Inc.
CEQA	California Environmental Quality Act
CRHR	California Register of Historical Resources
DPR	(California) Department of Parks and Recreation
GPS	Global Positioning System
NRHP	National Register of Historic Places
NAHC	Native American Heritage Commission
OHP	Office of Historic Preservation
RPO	Resource Protection Ordinance
SCIC	South Coastal Information Center
SDSU	San Diego State University
SHPO	State Historic Preservation Officer
TM	Tentative Map
USGS	United States Geological Survey
YBP	Years Before Present

1.0 INTRODUCTION

1.1 Project Description

The archaeological survey program for the Tyler Street Residential Project was conducted in order to comply with CEQA and the City of Santee environmental guidelines. The project consists of the extension of Tyler Street and the subdivision of approximately 27.4 acres for the development of 14 single-family residences in the city of Santee (Figures 1.1–1 through 1.1–3). Of the 27.4-acre site, 7.75 acres located in the north/northeast portions of the subject property will be directly impacted by the residential development while the remaining 19.65 acres, approximately 76 percent of the project, will be preserved as open space.

The project can be found at the southern terminus of Tyler Street in the city of Santee, California. Specifically, the project is located in the El Cajon Land Grant of the USGS 7.5-minute *La Mesa* and *El Cajon, California* topographic quadrangles (Township 15 South, Range 1 West, projected). The project includes APNs 386-290-08, -09, -10, -13, -14, -20, -22, -24, and -26.

The APE for this project is the approximately 27.4-acre site. The decision to request this investigation was based upon cultural resource sensitivity of the locality as suggested by known site density and predictive modeling. Sensitivity for cultural resources in a given area is usually indicated by known settlement patterns, which in the inland foothills area are focused around fresh water resources and a food supply. In this particular case, the proximity to seasonal drainages and the San Diego River prehistorically located in and around the general area is an additional focus of prehistoric settlement patterns. The field survey resulted in the identification of two previously recorded cultural resources (SDI-11,542H and SDI-11,543).

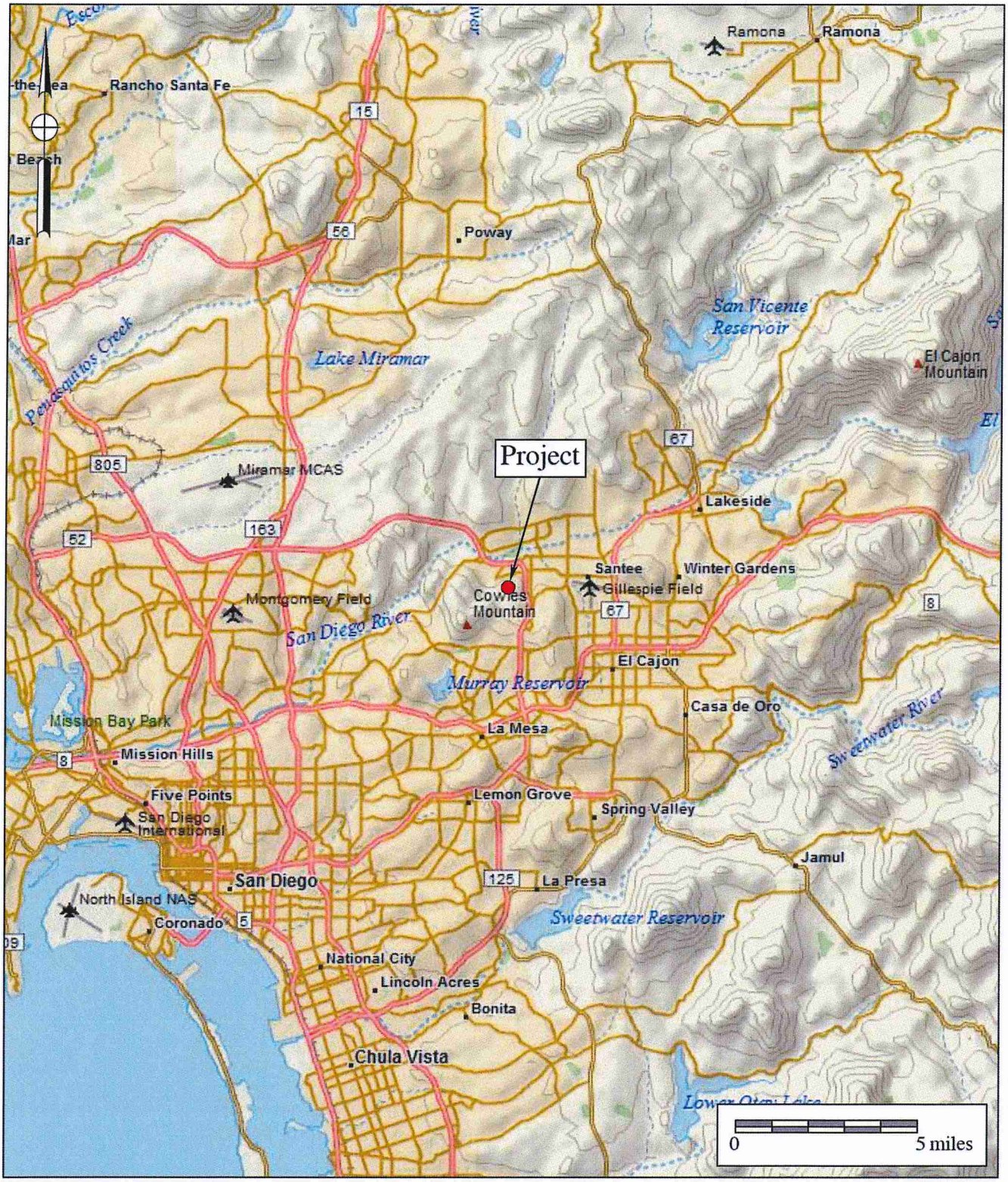

Figure 1.1–1

General Location Map

The Tyler Street Residential Project

DeLorme (1:250,000)

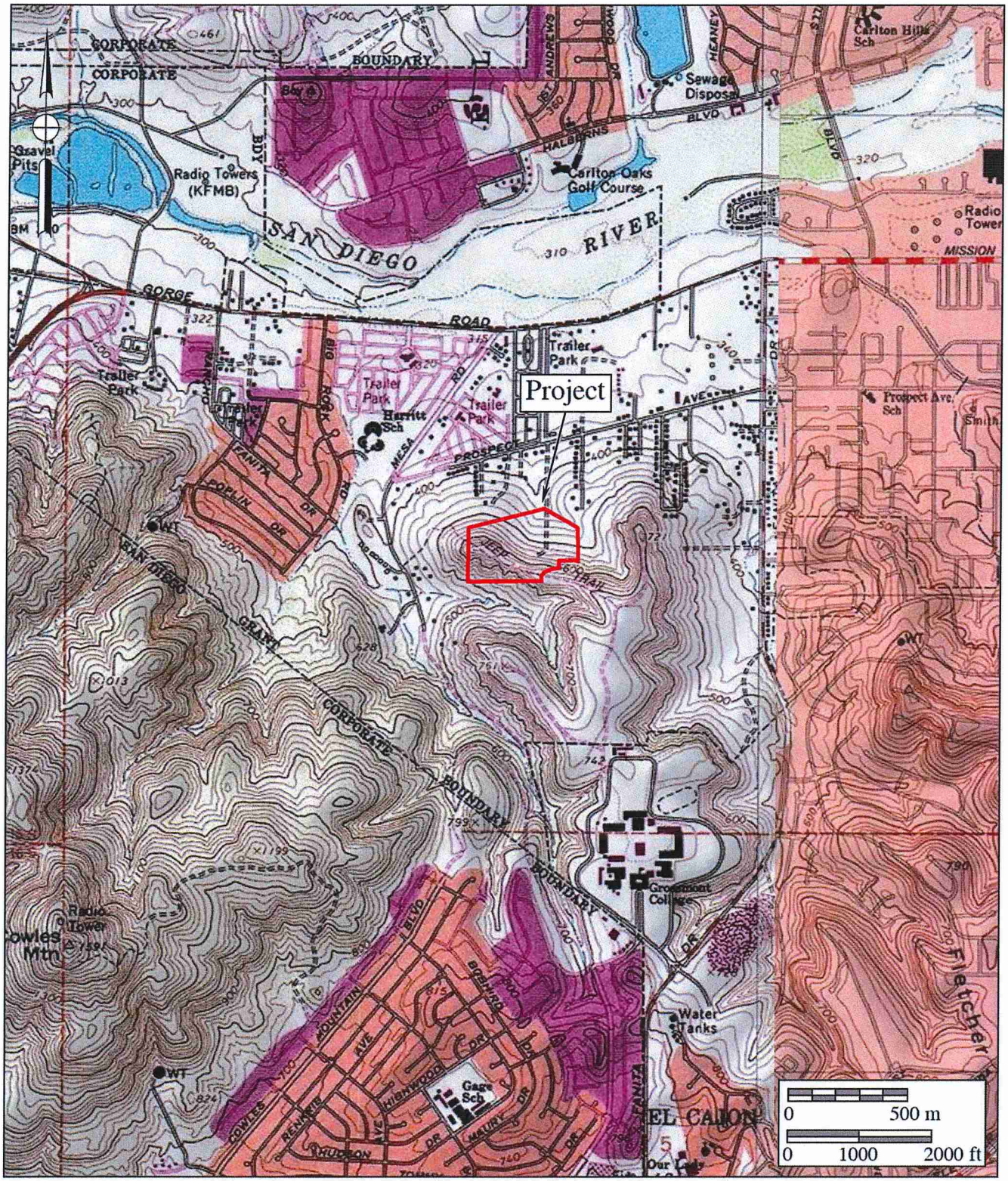

Figure 1.1–2

Project Location Map

The Tyler Street Residential Project

USGS *La Mesa* Quadrangle (7.5-minute series)

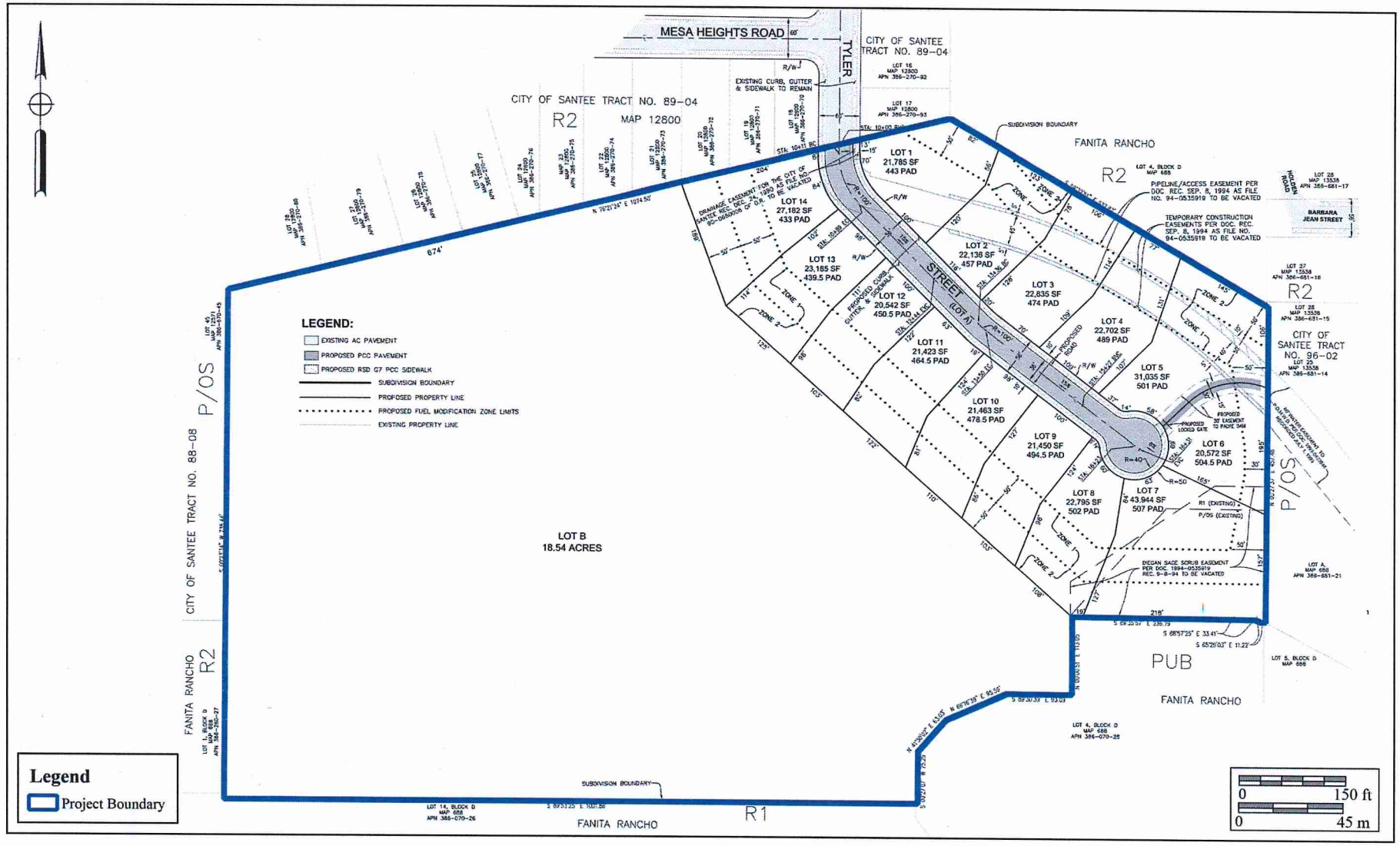

Figure 1.1–3

Project Development Map

The Tyler Street Residential Project

1.2 Existing Conditions

1.2.1 Environmental Setting

Natural Setting

The study area lies on the coastal plain of San Diego County in the Coastal Province and western Peninsular Range Province (Griner and Pride 1976:15). The coastal strip has a 130-kilometer-long shoreline and is comprised of raised Pleistocene marine and nonmarine terraces ranging from five to 20 kilometers in width (Weber 1963). Cretaceous, Tertiary, and Quaternary marine and nonmarine sedimentary deposits define these terraces, which have been extensively modified by erosion. Drainages of varied catchment size are closely spaced along the coast, and lagoons have formed at the mouths of many of these rivers. The southern third of the San Diego County coastline is dominated by Tijuana Lagoon, San Diego Bay, and Mission Bay, while the central portion includes six main drainages, mostly with small catchments and associated lagoons.

The northern third of the county's coastline extends from the San Luis Rey River to San Mateo Creek and encompasses the Marine Corps Base Camp Pendleton and three of the county's four largest drainage catchments. The Santee area is part of the central coastal plain. The coastal plain is characterized by a Mediterranean semiarid steppe climate (Bowman 1973; Hines 1991:4). Precipitation ranges from 225 to 400 millimeters per year and is concentrated in the winter (from December to April). The prominent vegetation throughout the area is coastal sage scrub (Munz 1974) and important associated species such as buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), sugar bush (*Rhus ovata*), squaw bush (*Rhus trilobata*), and laurel sumac (*Malosma laurina*). In the valley floors, freshwater marsh species include cattail (*Typha latifolia*), spike rush (*Eleocharis macrostachya*), and bulrush (*Scirpus* sp.), while common salt marsh plants include pickleweed (*Salicornia virginica*), saltgrass (*Distichlis spicata*), and sea lavender (*Limonium californicum*). Willow (*Salix* sp.), cottonwood (*Populus fremontii*), oak (Quercus), and sycamore (*Platanus racemosa*) trees are common in valley floor riparian habitats.

The subject property is comprised of a gentle north-facing slope in the northern half of the property. This slope leads south to a steep finger ridge that transverses the property from northwest to the southeast in the southern half of the APE. Impacts to the subject property include previous vegetation clearing for fire abatement, the development of a concrete lined V-ditch along the northern boundary of the APE, and the addition of a culvert just south of the terminus of Tyler Street. Elevations range from approximately 430 feet above mean sea level (AMSL) along the lower elevations to approximately 670 feet AMSL along the ridgeline. Dirt roads and trails traverse the lower elevations leading up the steeper slopes to a single trail that runs along the top of the ridge. Soils throughout most of the project is characterized as Diablo clay, 15 to 30 percent slopes (DaE). The steeper slope leading up to the ridgeline is classified as Redding cobbly loam, dissected, 15 to 50 percent slopes (RfF) while the ridge top is characterized as Terrace escarpments (TeF). Terrace escarpments generally consist of narrow, long, rocky, and steep faces that separate

terraces from the lower lying land. Naturally occurring volcanic and quartzite cobbles are found throughout the property, but are mainly located along the upper ridge.

Cultural Setting

The project setting includes the natural, physical, geological, and biological contexts of the proposed project, as well as the cultural setting of prehistoric and historic human activities in the general area. The following sections discuss both the environmental and cultural settings at the subject property, the relationship between the two, and the relevance of that relationship to the project.

Paleoenvironment

Because of the close relationship between prehistoric settlement and subsistence patterns and the environment, it is necessary to understand the setting in which these systems operated. At the end of the final period of glaciation, approximately 11,000 to 10,000 years before the present (YBP), the sea level was considerably lower than it is now; the coastline at that time would have been two to two and one-half miles west of its present location (Smith and Moriarty 1985a, 1985b). At approximately 7,000 YBP, the sea level rose rapidly, filling in many coastal canyons that had been dry during the glacial period. The period between 7,000 and 4,000 YBP was characterized by conditions that were drier and warmer than they were previously, followed by a cooler, moister environment similar to the present-day climate (Robbins-Wade 1990). Changes in sea level and coastal topography are often manifested in archaeological sites through the types of shellfish that were utilized by prehistoric groups. Different species of shellfish prefer certain types of environments, and dated sites that contain shellfish remains reflect the setting that was exploited by the prehistoric occupants.

Unfortunately, pollen studies have not been conducted for this area of San Diego; however, studies in other areas of southern California, such as Santa Barbara, indicate that the coastal plains supported a pine forest between approximately 12,000 and 8,000 YBP (Robbins-Wade 1990). After 8,000 YBP, this environment was replaced by more open habitats, which supported oak and non-arboreal communities. The coastal sage scrub and chaparral environments of today appear to have become dominant after 2,200 YBP (Robbins-Wade 1990).

Prehistory

In general, the prehistoric record of San Diego County has been documented in many reports and studies, several of which represent the earliest scientific works concerning the recognition and interpretation of the archaeological manifestations present in this region. Geographer Malcolm Rogers initiated the recordation of sites in the area during the 1920s and 1930s, using his field notes to construct the first cultural sequences based upon artifact assemblages and stratigraphy (Rogers 1966). Subsequent scholars expanded the information gathered by Rogers and offered more academic interpretations of the prehistoric record. Moriarty

(1966, 1967, 1969), Warren (1964, 1966), and True (1958, 1966) all produced seminal works that critically defined the various prehistoric cultural phenomena present in this region (Moratto 1984). Additional studies have sought to further refine these earlier works (Cardenas 1986; Moratto 1984; Moriarty 1966, 1967; True 1970, 1980, 1986; True and Beemer 1982; True and Pankey 1985; Waugh 1986). In sharp contrast, the current trend in San Diego prehistory has also resulted in a revisionist group that rejects the established cultural historical sequence for San Diego. This revisionist group (Warren et al. 1998) has replaced the concepts of San Dieguito Complex, La Jolla Complex, and all of their other manifestations with an extensive, all-encompassing, chronologically undifferentiated cultural unit that ranges from the initial occupation of southern California to around A.D. 1000 (Bull 1983, 1987; Ezell 1983, 1987; Gallegos 1987; Kyle et al. 1990; Stropes 2007). For the present study, the prehistory of the region is divided into four major periods: Early Man, Paleo Indian, Early Archaic, and Late Prehistoric.

Early Man Period (Prior to 8,500 B.C.)

At the present time, there has been no concrete archaeological evidence to support the occupation of San Diego County prior to 10,500 years ago. Some archaeologists, such as Carter (1957, 1980) and Minshall (1976), have been proponents of Native American occupation of the region as early 100,000 years ago. However, their evidence for such claims is sparse at best and has lost much support over the years as more precise dating techniques have become available for skeletal remains thought to represent early man in San Diego. In addition, many of the "artifacts" initially identified as products of early man in the region have since been rejected as natural products of geologic activity. Some of the local proposed Early Man Period sites include Texas Street, Buchanan Canyon, and Brown, as well as Mission Valley (San Diego River Valley), Del Mar, and La Jolla (Bada et al. 1974; Carter 1957, 1980; Minshall 1976, 1989; Moriarty and Minshall 1972; Reeves 1985; Reeves et al. 1986).

Paleo Indian Period (8500 to 6000 B.C.)

For the region, it is generally accepted that the earliest identifiable culture in the archaeological record is represented by the material remains of the Paleo Indian Period San Dieguito Complex. The San Dieguito Complex was thought to represent the remains of a group of people who occupied sites in this region between 10,500 and 8,000 YBP, and who were related to or contemporaneous with groups in the Great Basin. As of yet, no absolute dates have been forthcoming to support the great age attributed to this cultural phenomenon. The artifacts recovered from San Dieguito Complex sites duplicate the typology attributed to the Western Pluvial Lakes Tradition (Moratto 1984; Davis et al. 1969). These artifacts generally include scrapers, choppers, large bifaces, and large projectile points, with few milling tools. Tools recovered from San Dieguito Complex sites, along with the general pattern of their site locations, led early researchers to believe that the people of the San Dieguito Complex were a wandering, hunting, and gathering society (Moriarty 1969; Rogers 1966).

The San Dieguito Complex is the least understood of the cultures that have inhabited the San Diego County region. This is because of an overall lack of stratigraphic information and/or datable materials recovered from sites identified as San Dieguito Complex. Currently, controversy exists among researchers regarding the relationship of the San Dieguito Complex and the subsequent cultural manifestation in the area, the La Jolla Complex. Firm evidence has not been recovered to indicate whether the San Dieguito Complex "evolved" into the La Jolla Complex, the people of the La Jolla Complex moved into the area and assimilated with the people of the San Dieguito Complex, the people of the San Dieguito Complex retreated from the area because of environmental or cultural pressures.

Early Archaic Period (6000 B.C. to A.D. 0)

Based upon evidence suggesting climatic shifts and archaeologically observable changes in subsistence strategies, a new cultural pattern is believed to have emerged in the San Diego region around 6000 B.C. This Archaic Period pattern is believed by archaeologists to have evolved from or replaced the San Dieguito Complex culture, resulting in a pattern referred to as the Encinitas Tradition. In San Diego, the Encinitas Tradition is believed to be represented by the coastal La Jolla Complex and its inland manifestation, the Pauma Complex. The La Jolla Complex is best recognized for its pattern of shell middens and grinding tools closely associated with marine resources and flexed burials (Shumway et al. 1961; Smith and Moriarty 1985a). Increasing numbers of inland sites have been identified as dating to the Archaic Period, focusing on terrestrial subsistence (Cardenas 1986; Smith 1996; Raven-Jennings and Smith 1999a, 1999b).

The tool typology of the La Jolla Complex displays a wide range of sophistication in the lithic manufacturing techniques used to create the tools found at their sites. Scrapers, the dominant flaked tool type, were created by either splitting cobbles or by finely flaking quarried material. Evidence suggests that after about 8,200 YBP, milling tools began to appear in La Jolla Complex sites. Inland sites of the Encinitas Tradition (Pauma Complex) exhibit a reduced quantity of marine-related food refuse and contain large quantities of milling tools and food bone. The lithic tool assemblage shifts slightly to encompass the procurement and processing of terrestrial resources, suggesting seasonal migration from the coast to the inland valleys (Smith 1996). At the present time, the transition from the Archaic Period to the Late Prehistoric Period is not well understood. Many questions remain concerning cultural transformation between periods, possibilities of ethnic replacement, and/or a possible hiatus from the western portion of the county.

Late Prehistoric Period (A.D. 0 to 1769)

The transition into the Late Prehistoric Period in the project area is primarily represented by a marked change in archaeological patterning known as the Yuman Tradition. This tradition is primarily represented by the Cuyamaca Complex, which is believed to be derived from the mountains of southern San Diego County. The people of the Cuyamaca Complex are considered as ancestral to the ethnohistoric Kumeyaay (Diegueño). Although several archaeologists consider

the local Native American tribes to be latecomers, the traditional stories and histories passed down through oral tradition by the local Native American groups speak both presently and ethnographically to tribal presence in the region as being since the time of creation.

The Kumeyaay Native Americans were a seasonal hunting and gathering people, with cultural elements that were very distinct from the people of the La Jolla Complex. Noted variations in material culture included cremation, the use of bows and arrows, and adaptation to the use of the acorn as a main food staple (Moratto 1984). Along the coast, the Kumeyaay made use of marine resources by fishing and collecting shellfish for food. Game and seasonally available plant food resources (including acorns) were sources of nourishment for the Kumeyaay. By far, though, the most important food resource for these people was the acorn. The acorn represented a storable surplus, which in turn allowed for seasonal sedentism and its attendant expansion of social phenomena.

Firm evidence has not been recovered to indicate whether the people of the La Jolla Complex were present when the Kumeyaay Native Americans migrated into the coastal zone. However, stratigraphic information recovered from Site SDI-4609 in Sorrento Valley suggests a possible hiatus of 650 ± 100 years between the occupation of the coastal area by the La Jolla Complex (1,730 ± 75 YBP is the youngest date for the La Jolla Complex inhabitants at SDI-4609) and Late Prehistoric cultures (Smith and Moriarty 1983). More recently, a reevaluation of two prone burials at the Spindrift Site excavated by Moriarty (1965) and radiocarbon dates of a pre-ceramic phase of Yuman occupation near the San Diego suburb of Santee suggest a commingling of the latest La Jolla Complex inhabitants and the earliest Yuman inhabitants about 2,000 YBP (Kyle and Gallegos 1993).

Historic Period

Exploration Period (1530 to 1769)

The historic period around San Diego Bay began with the landing of Juan Rodriguez Cabrillo and his men in 1542 (Chapman 1925). Sixty years after the Cabrillo expeditions (1602 to 1603), an expedition under Sebastian Vizcaíno made an extensive and thorough exploration of the Pacific coast. Although his voyage did not extend beyond the northern limits of the Cabrillo track, Vizcaíno had the most lasting effect on the nomenclature of the coast. Many of the names Vizcaíno gave to various locations throughout the region have survived to the present time, whereas nearly every one of Cabrillo's has faded from use. For example, Cabrillo gave the name "San Miguel" to the first port at which he stopped in what is now the United States; 60 years later, Vizcaíno changed the port name to "San Diego" (Rolle 1969).

Spanish Colonial Period (1769 to 1821)

The Spanish occupation of the claimed territory of Alta California took place during the reign of King Carlos III of Spain (Engelhardt 1920). Jose de Gálvez, a powerful representative of the king in Mexico, conceived the plan to colonize Alta California and thereby secure the area for

the Spanish Crown (Rolle 1969). The effort involved both a military and a religious contingent, where the overall intent of establishing forts and missions was to gain control of the land and the native inhabitants through conversion. Actual colonization of the San Diego area began on July 16, 1769 when the first Spanish exploring party, commanded by Gaspar de Portolá (with Father Junípero Serra in charge of religious conversion of the native populations), arrived by the overland route to San Diego to secure California for the Spanish Crown (Palou 1926). The natural attraction of the harbor at San Diego and the establishment of a military presence in the area solidified the importance of San Diego to the Spanish colonization of the region and the growth of the civilian population. Missions were constructed from San Diego to as far north as San Francisco. The mission locations were based upon important territorial, military, and religious considerations. Grants of land were made to persons who applied, but many tracts reverted back to the government for lack of use. As an extension of territorial control by the Spanish Empire, each mission was placed so as to command as much territory and as large a population as possible. While primary access to California during the Spanish Period was by sea, the route of El Camino Real served as the land route for transportation, commercial, and military activities within the colony. This route was considered to be the most direct path between the missions (Rolle 1969; Caughey 1970). As increasing numbers of Spanish and Mexican peoples, as well as the later Americans during the Gold Rush, settled in the area, the Native American populations diminished as they were displaced or decimated by disease (Carrico and Taylor 1983).

Mexican Period (1821 to 1846)

On September 16, 1810, the priest Father Miguel Hidalgo y Costilla started a revolt against Spanish rule. He and his untrained Native American followers fought against the Spanish, but his revolt was unsuccessful and Father Hidalgo was executed. After this setback, Father José Morales led the revolutionaries, but he too failed and was executed. These two men are still symbols of Mexican liberty and patriotism. After the Mexican-born Spanish and the Catholic Church joined the revolution, Spain was finally defeated in 1821. Mexican Independence Day is celebrated on September 16th of each year, signifying the anniversary of the start of Father Hidalgo's revolt. The revolution had repercussions in the northern territories, and by 1834, all of the mission lands had been removed from the control of the Franciscan Order under the Acts of Secularization. Without proper maintenance, the missions quickly began to disintegrate, and after 1836, missionaries ceased to make regular visits inland to minister to the needs of the Native Americans (Engelhardt 1920). Large tracts of land continued to be granted to persons who applied for them or who had gained favor with the Mexican government. Grants of land were also made to settle government debts and the Mexican government was called upon to reaffirm some older Spanish land grants shortly before the Mexican-American War of 1846 (Moyer 1969).

Anglo-American Period (1846 to Present)

California was invaded by United States troops during the Mexican-American War of 1846

to 1848. The acquisition of strategic Pacific ports and California land was one of the principal objectives of the war (Price 1967). At the time, the inhabitants of California were practically defenseless, and they quickly surrendered to the United States Navy in July of 1847 (Bancroft 1886).

The cattle ranchers of the "counties" of southern California had prospered during the cattle boom of the early 1850s. Cattle ranching soon declined, however, contributing to the expansion of agriculture. With the passage of the "No Fence Act," San Diego's economy changed from stock raising to farming (Rolle 1969). The act allowed for the expansion of unfenced farms, which was crucial in an area where fencing material was practically unavailable. Five years after its passage, most of the arable lands in San Diego County had been patented as either ranchos or homesteads, and growing grain crops replaced raising cattle in many of the county's inland valleys (Blick 1976; Elliott 1883 [1965]). By 1870, farmers had learned to dry farm and were coping with some of the peculiarities of San Diego County's climate (*San Diego Union,* February 6, 1868; Van Dyke 1886). Between 1869 and 1871, the amount of cultivated acreage in the county rose from less than 5,000 to more than 20,000 acres (*San Diego Union,* January 2, 1872). Large-scale farming in San Diego County was limited by a lack of water and the small size of arable valleys and the small urban population and poor roads restricted commercial crop growing. Nevertheless, cattle continued to be grazed in inland San Diego County (Gordinier 1966).

The Julian gold rush spurred the growth of a small town within the Santa Maria Rancho. This town was first known as Nuevo during the 1870s, but later became known as Ramona (Moyer 1969). The Santa Maria land grant was sold off in small and large parcels to homesteaders and land speculators. In the early twentieth century, ranching was the focus of the valley and it grew as turkey ranches, bee farming, and horse stables became established.

During the first two decades of the twentieth century, the population of San Diego County continued to grow. The population of the inland county declined during the 1890s, but between 1900 and 1910, it rose by about 70 percent. The pioneering efforts were over, the railroads had broken the relative isolation of southern California, and life in San Diego County became similar to other communities throughout the west. After World War I, the history of San Diego County was primarily determined by the growth of San Diego Bay. During this time period, the history of inland San Diego County was subsidiary to that of the city of San Diego, which became a Navy center and industrial city (Heiges 1976). In inland San Diego County, agriculture became specialized and recreational areas were established in the mountain and desert areas.

A Brief History of Santee

Within the last two centuries, the city of Santee has been under the jurisdiction of three successive governments including Spain, Mexico, and the United States of America. The project area is within the former Rancho El Cajon Land Grant. Pio Pico granted the land to María Antonia Estudillo de Pedrorena 1845. María was the daughter José Antonio Estudillo and was married to Miguel Pedrorena who came to California in 1938 and operated a trading business (City of Santee

n.d.).

A large portion of Rancho El Cajon that would become the city of Santee was purchased in 1877 by George A. Cowles (Kohls) to develop a vineyard. Cowles was from Hartford Connecticut and moved to the San Diego area with his wife Jennie Blodgett in the 1870s. George Cowles became a prominent rancher in the region during the 1880s. Other portions of the city were developed from the neighboring Fanita Ranch. Fanita Ranch was purchased in 1885 by Hosmer McKoon and consisted of 9,543 acres. In 1898 Fanita Ranch would come into the possession of the Scripps family who used the land as a resort and to raise cattle (City of Santee n.d.).

Cowles passed away in 1887 and three years later Blodgett married Milton Santee. Santee was a realtor and surveyor in the region. At the time, the town was known as Cowleston and in 1891 the Cowles School was constructed. The town and school both changed their name to Santee in 1893 as Jennie Blodgett had already been operating the town's post office under the Santee name for a few years (City of Santee n.d.).

The community of Santee stayed rural throughout much of the early twentieth century. During World War II, 2,300 acres of the former Fanita Ranch, west of present day Santee, were acquired by the federal government and used as a military training ground. In 1958, a development firm, the Carlton Company, purchased another 4,300 acres of Fanita Ranch and began to develop the area with residences and commercial projects. The population of the Santee area grew rapidly during the mid- to late twentieth century as the region was developed. Throughout the 1970s, efforts were made to incorporate Santee but failed. In 1980 the city was finally incorporated, becoming the city of Santee (City of Santee n.d.).

1.2.2 Results of the Archaeological Records Search

An archaeological records search for a one-mile radius surrounding the project was conducted by the SCIC at SDSU, the results of which were reviewed by BFSA. The SCIC reported that two previously recorded archaeological sites (SDI-11,542H and SDI-11,543) are recorded within the project boundaries. Including SDI-11,542H and SDI-11,543, a total of 18 cultural resource locations have been recorded within a one-mile radius of the project (Table 1.2–1). Together, these sites include three prehistoric bedrock millings site; one prehistoric bedrock milling site with associated midden; two prehistoric habitation sites with bedrock milling features; five prehistoric lithic scatters; one prehistoric temporary camp with associated lithic scatter; one multicomponent site with a prehistoric lithic scatter and a historic foundation; one multicomponent site consisting of a prehistoric habitation site with associated bedrock milling features and a historic trash scatter; a historic dam; a historic retaining wall and culvert; a historic trash dump and remnants of mid-twentieth century structures; and one site record without any information.

Table 1.2–1
Cultural Resources Within a One-Mile Radius
of the Tyler Street Residential Project

Site(s)	Description
SDI-204†, SDI-205†, and SDI-19,064	Prehistoric bedrock milling site
SDI-4510	Prehistoric bedrock milling site with associated midden
SDI-5053 and SDI-9243	Prehistoric habitation site with bedrock milling features
SDI-10,148	Prehistoric temporary campsite with associated lithic scatter
SDI-5691, SDI-5692, SDI-5690, SDI-9242, and SDI-11,543*	Prehistoric lithic scatter
SDI-5535/H	Multicomponent site with prehistoric lithic scatter and a historic foundation
SDI-8594/H	Multicomponent site with prehistoric habitation site, associated bedrock milling features, and a historic trash scatter
SDI-12,086H	Historic dam
SDI-11,810H	Historic retaining wall and culvert
SDI-11,542H*	Historic trash dump and remnants of mid-twentieth century structures
SDI-206	No information on site record

* Located within the current APE
† Could not be relocated in 2009

The majority of these sites are related to prehistoric resource extraction behavior and are oriented approximately one-half of a mile south and north of the project APE, within the neighboring foothills and along the southern bank of the San Diego River. Five historic addresses have been recorded within one mile of the project APE. In total, 64 cultural resource studies have been conducted within a one-mile radius of the project (see Appendix C), none of which overlap the current APE. BFSA reviewed the following historic sources:

- The National Register of Historic Places Index
- The Office of Historic Preservation, Archaeological Determinations of Eligibility
- The Office of Historic Preservation, Directory of Properties in the Historic Property Data File
- The 1:24,000 USGS *La Mesa* (1953) topographic map
- San Diego County 1872 map

Most of these sources did not indicate the presence of cultural resources within, or immediately adjacent to, the project; however, the 1954 *La Mesa* topographic map showed two structures within the subject property. The complete records search results are provided in Appendix C.

As the 1953 *La Mesa* topographic map indicated two structures were once located on the APE, BFSA conducted additional archival research of the property. Historic aerial photographs from 1953 to 2016, along with the 1942, 1947, 1953, and 1967 7.5-minute *La Mesa, California* topographic quadrangle maps, were reviewed. The 1942 and 1947 topographic maps do not show any structures on the subject property; however, the subsequent maps and aerial photographs do show the two structures on the project APE. Both buildings were accessed by long dirt driveways extending south from Prospect Avenue. The 1953 aerial photograph and topographic quadrangle both show two structures, one located in the northern portion of the project near the current terminus of Tyler Street, and one farther south at the base of the steep hills. An aerial photograph from 1964 also shows both structures on the property; however, the 1966 aerial photograph and 1967 topographic quadrangle only show the structure in the northern portion of the APE, near the terminus of Tyler Street. Subsequent aerial photographs show the mid-twentieth century development of the region. By 1989, the building near Tyler Street is no longer visible and was completely replaced by the 1990s by new residential development.

BFSA also requested a review of the SLF by the NAHC. The search did not locate evidence of Native American religious, ritual, or other special activities at this location. In accordance with the recommendations of the NAHC, BFSA contacted all Native American consultants listed in the NAHC response letter and received three responses. The San Pasqual Band of Mission Indians stated the project is located outside of their reservation and Traditional Use Area (TUA); however, they would like a native monitor to be present for any ground disturbing actives and are interested in receiving updates regarding the project. The Jamul Indian Village of California deferred to other Kumeyaay tribes, while the Viejas Band of Kumeyaay Indians determined the APE has cultural significance or ties to them and requested a Kumeyaay monitor be present during any ground disturbing activities. A copy of all Native American correspondence can be found in Appendix D.

2.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

2.1 Applicable Regulations

Resource importance is assigned to districts, sites, buildings, structures, and objects that possess exceptional value or quality illustrating or interpreting the heritage of San Diego County in history, architecture, archaeology, engineering, and culture. A number of criteria are used in demonstrating resource importance. Specifically, criteria outlined in CEQA provide the guidance for making such a determination. The following sections detail the CEQA criteria that a resource must meet in order to be determined important.

2.1.1 California Environmental Quality Act (CEQA)

According to CEQA (§15064.5a), the term "historical resource" includes the following:

1) A resource listed in or determined to be eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (Public Resources Code SS5024.1, Title 14 CCR. Section 4850 et seq.).
2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code, or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3) Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resources Code SS5024.1, Title 14, Section 4852) including the following:

    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    b) Is associated with the lives of persons important in our past;
    c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
    d) Has yielded, or may be likely to yield, information important in prehistory or

history.

4) The fact that a resource is not listed in, or determined eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Section 5020.1(j) or 5024.1.

According to CEQA (§15064.5b), a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change as the following:

1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
2) The significance of an historical resource is materially impaired when a project:

    a) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register of Historical Resources;
    b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant;
    c) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

1. When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).
2. If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, Section 15126.4 of the guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
3. If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21803.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
4. If an archaeological resource is neither a unique archaeological nor historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or Environmental Impact Report, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5 (d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides:

(d) When an initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC, as provided in Public Resources Code SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC. Action implementing such an agreement is exempt from:

1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5)
2) The requirement of CEQA and the Coastal Act.

2.1.2 Traditional Cultural Properties

Native American Heritage Values

Federal and state laws mandate that consideration be given to the concerns of contemporary Native Americans with regard to potentially ancestral human remains, associated

funerary objects, and items of cultural patrimony. Consequently, an important element in assessing the significance of the study site has been to evaluate the likelihood that these classes of items are present in areas that would be affected by the proposed project.

Also potentially relevant to prehistoric archaeological sites is the category termed Traditional Cultural Properties in discussions of cultural resource management (CRM) performed under federal auspices. According to Patricia L. Parker and Thomas F. King (1998), "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. Examples of properties possessing such significance include:

1. A location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
2. A rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
3. An urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
4. A location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
5. A location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

A Traditional Cultural Property, then, can be defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.

3.0 RESEARCH DESIGN

The primary goal of the research design is to attempt to understand the way in which humans have used the land and resources within the project area through time, as well as to aid in the determination of resource significance. For the current project, the study area under investigation is the coastal plain and foothills of San Diego County. The scope of work for the cultural resources study conducted for the Tyler Street Residential Project included the survey of an approximately 27.4-acre area and the evaluation of Site SDI-11,542H and SDI-11,543. Given the area involved and the recorded presence of two archaeological sites, the research design for this project was focused upon realistic study options. Since the main objective of the investigation was to identify the presence of, and potential impacts to, cultural resources, the goal here is not necessarily to answer wide-reaching theories regarding the development of early southern California, but to investigate the role and importance of the identified resources. Nevertheless, the assessment of the significance of a resource must take into consideration a variety of characteristics, as well as the ability of the resource to address regional research topics and issues.

Although elementary site testing programs are limited in terms of the amount of information available, several specific research questions were developed that could be used to guide the initial investigations of any observed cultural resources. The following research questions take into account the small size and location of the project area discussed above.

Research Questions:

- Can located cultural resources be situated with a specific time period, population, or individual?
- Do the types of located cultural resources allow a site activity/function to be determined from a preliminary investigation? What are the site activities? What is the site function? What resources were exploited?
- How do the located sites compare to others reported from different surveys conducted in the area?
- How do the located sites fit existing models of settlement and subsistence for valley environments of the region?

Data Needs

At the test level, the principal research objective is a generalized investigation of changing settlement patterns in both the prehistoric and historic periods within the study area. The overall goal is to understand settlement and resource procurement patterns of the project area occupants. Therefore, adequate information on site function, context, and chronology from an archaeological perspective is essential for the investigation. The fieldwork and archival research was undertaken with the following primary research goals in mind:

1) To identify cultural resources occurring within the project area,
2) To determine, if possible, site type and function, context of the deposit, and chronological placement of each cultural resource identified,
3) To place each cultural resource identified within a regional perspective, and
4) To provide recommendations for the treatment of each of the cultural resources identified.

4.0 ANALYSIS OF PROJECT EFFECTS

The cultural resources study of the Tyler Street Residential Project consisted of an institutional records search, an intensive cultural resource survey of the entire approximately 27.4-acre project, and the detailed recordation of all identified archaeological sites. This study was conducted in conformance with the City of Santee environmental guidelines, Section 21083.2 of the California Public Resources Code, and CEQA. Statutory requirements of CEQA (Section 15064.5) were followed for the identification of each cultural resource. Specific definitions for archaeological resource type(s) used in this report are those established by the State Historic Preservation Officer (SHPO 1995).

4.1 Methods

4.1.1 Survey Methods

The survey methodology employed during the current investigation followed standard archaeological field procedures and was sufficient to accomplish a thorough assessment of the project. Project Archaeologist Andrew J. Garrison (RPA) and field archaeologist David Grabski conducted the intensive pedestrian survey on October 27, 2017, under the direction of Principal Investigator Brian F. Smith. The field methodology employed for the project included visually inspecting the ground surface while walking evenly spaced survey transects set approximately 10 meters apart except when hindered by steep terrain and heavy vegetation. All potentially sensitive areas where cultural resources might be located were closely inspected. Photographs documenting survey discoveries and overall survey conditions were taken frequently (Plates 4.1–1 through 4.1–2). Ground visibility was generally low (20 percent) due to heavy vegetation. During the survey a historic site (SDI-11,542H) and a prehistoric site (SDI-11,543) were relocated within the subject property (Figure 4.1–1 and 4.1–2). All cultural resources were recorded as necessary according to the Office of Historic Preservation's (OHP) manual, *Instructions for Recording Historical Resources* using Department of Parks and Recreation (DPR) forms.

Plate 4.1–1: Overview of the project, facing south.

Plate 4.1–2: Overview of the project, facing northeast.

<u>Figure 4.1–1</u>
Cultural Resource Location Map

(Deleted for Public Review; Bound Separately)

<u>Figure 4.1–2</u>
Cultural Resources Shown on
the Project Development Map

(Deleted for Public Review; Bound Separately)

4.1.2 Test Methods

The testing program for cultural resources within the Tyler Street Residential Project took place on April 9, 2018. The study was conducted by Project Archaeologist Andrew J. Garrison (RPA), Senior Field Archaeologist Clarence Hoff, and field archaeologist David Grabski. The cultural resource test strategy employed for SDI 11,542H and SDI-11,543 included collection of surface artifacts, completion of subsurface investigations, and significance evaluations. All surface artifacts were individually bagged with provenience data for subsequent analysis. The locations of the surface artifacts were used to generate the site boundary map.

Subsurface testing was completed at each site identified during the survey because of the potential to be directly or indirectly impacted by development, and to evaluate each site for CEQA significance. Subsurface examinations were conducted through the excavation of a series of Shovel Test Pits (STPs) to determine if cultural deposits were present. Placement of the STPs was dependent upon areas of soil accumulation and distribution of surface artifacts. The STPs consisted of 30-by-30-centimeter excavations, which proceeded in decimeter levels downward to a minimum depth of 30 centimeters where sufficient soils remained. All excavated soils were sifted through one-eighth-inch mesh hardware cloth.

All surface artifacts and STP locations within the project boundary were mapped using a Trimble Geo XT GPS unit equipped with TerraSync software. Recovered artifacts from the subsurface tests were placed in plastic bags, labeled with provenience information, and transported to the office of BFSA. All field data was recorded on appropriate forms, and photographs were used to document the excavations.

4.1.3 Laboratory Analysis

All artifacts recovered from both SDI-11,542H and SDI-11,543 were subjected to laboratory analysis that included cleaning. Prehistoric artifacts were cleaned with dry brushing to facilitate artifact identification. Historic artifacts were washed with mild soap and water to remove harmful contaminates. Each artifact was inventoried according to standard data categories of artifact types, materials, size, and use-ware. At the conclusion of the cataloging process, all artifacts were packaged appropriately for curation. Acid-free paper and packaging materials that meet federal standards and the guidelines of the San Diego Archaeological Center (SDAC) were used for the preparation of artifacts for curation.

4.1.4 Curation

All project field notes, photographs, and reports will be curated at the offices of BFSA in Poway, California. Artifacts, copies of field notes, and the final cultural resources study will be submitted for permanent curation to the SDAC.

4.2 Results of the Field Survey

The archaeological field survey of the approximately 27.4-acre project resulted in the

relocation of two archaeological sites (SDI-11,542H and SDI-11,543). No other cultural resources were located during the survey of the property.

- Site SDI-11,542H was recorded by Knight, Leeper, and Robbins-Wade in 1989 as a historic site measuring 185 meters north to south and 120 meters east to west, delineated by three features. The features included an area of historic debris near the terminus of Tyler Street (Feature 1), a scatter of historic refuse (Circa 1940s-1960s) located in the southwestern corner of the site within a seasonal drainage on the north facing slope (Feature 2), and a flat graded pad with scattered building debris just east of Feature 2 (Feature 3). When recorded in 1989, Features 1 and 3 were connected by a dirt access road. Knight et al. (1989a) also noted that the structures visible on the 1953 USGS *La Mesa* topographic map are the locations of Feature 1 and Feature 3. During the current survey, Feature 2 (Plate 4.2–1) and Feature 3 were relocated along with the linear alignment of an overgrown dirt access road. A rusted car seat, washing machine stand, and three wood fence posts with attached barbed wire were also located within the site along the old access road alignment (Plate 4.2–2). Feature 1 could not be relocated as it is now situated in an area that has been impacted by the residential development near the terminus of Tyler Street.

- SDI-11,543 was recorded as a light lithic scatter by Knight, Leeper, and Robbins-Wade in 1989. The site record indicates that the site was surveyed and subjected to a minimal amount of testing in 1989, but no evaluation of the site could be found. The site record indicates that Knight, Leeper, and Robbins-Wade (1989b) excavated two STPs (only to a depth of 10 centimeters) and collected six metavolcanic flakes and 28 quartzite flakes. When first recorded, three distinct scatters were noted with the overall site measuring 25 meters north to south and 90 meters east to west. During the current survey, only one scatter measuring five meters north to south and three meters east to west could be relocated. The scatter consisted of quartzite debitage located along the east-to-west-trending finger ridge.

An updated site record form (DPR Form 523L) will be filed with the SCIC at SDSU for both sites. Preliminary analysis of materials present within the identified surface site boundaries suggests that SDI-11,542H consists of the remnants of a rural residential property with an associated trash scatter while SDI-11,543 potentially represents a resource extraction site associated with the prehistoric Kumeyaay.

Plate 4.2–1: Overview of Site SDI-11,542H Feature 2, facing north.

Plate 4.2–2: View of the rusted car seat located within Site SDI-11,542H, facing west.

4.3 Results of the Significance Testing

The following section provides the pertinent field results for the evaluation of significance for sites SDI-11,542H and SDI-11,543. Testing of both sites consisted of the mapping and recordation of the surface expression of the sites and the excavation of STPs. Six STPs were excavated at SDI-11,542H while three STPs were excavated at SDI-11,543. The testing program was conducted on April 9, 2018.

4.3.1 Site SDI-11,542H

Site SDI-11,542H is located within the relative center of the APE (Plate 4.3–1). The site is situated approximately 125 meters south/southwest of the southern terminus of Tyler Street (see Figure 4.1–1). Disturbances at the site include natural erosion, bioturbation in the form of small mammal burrows, dirt access roads, previous vegetation clearing for fire abatement, the development of a concrete lined V-ditch along the northern boundary of the APE, the addition of a culvert just south of the terminus of Tyler Street, and modern trash deposition. Site SDI-11,542H consists of a trash scatter, a flat graded pad where the southern structure identified on the 1953 *La Mesa* topographic map was located, and the linear alignment of an overgrown access road which extends north from the graded pad. Dirt roads and paths pass adjacent to and through the site location. A rusted car seat, washing machine stand, and three wood posts with barbed wire were located within the site. Also, a concentration of artifacts was located within the previously recorded trash scatter which measures 14 meters from north to south and five meters from east to west. As the STPs did not contain any substantial artifacts, the overall site boundary was defined by the surface artifacts and features with the overall site dimensions measuring 155 meters north to south and 120 meters east to west. The setting of SDI-11,542H, the position of surface materials, and the location of the STPs have been illustrated on Figure 4.3–1.

Plate 4.3–1: Overview of Site SDI-11,542H, facing southwest.

<u>Figure 4.3–1</u>
Site Investigation Map
SDI-11,542H

(Deleted for Public Review; Bound Separately)

Surface Collection

The entire surface of SDI-11,542H was inspected for artifacts and features. Artifacts were collected from the trash scatter located within the seasonal drainage. As many of the artifacts present within the scatter were redundant in nature, only a representative sample was collected that were diagnostic as to origin, function, or date. The collected artifacts were recorded using sub-meter GPS technology, provenienced from the nearest STP, collected in bags labeled with provenience information, and returned to the BFSA laboratory. The rusted metal car seat, washing machine stand, and posts with barbed wire located on the site were not collected. The surface collection consisted of glass from jars, bottles, and glassware; metal cans; and a leather shoe upper. The surface artifact recovery is summarized in Table 4.3–1.

Table 4.3–1
Surface Collection Data
Site SDI-11,542H

Surface Collection	Object Type	Cultural Material	Quantity	Cat. No. (s)
1	Cosmetic Jar	Milk Glass	1	12
2	Food Can	Ferrous Metal	1	4
	Indeterminate Can Lid		1	5
	Alcohol Can (Beer)		1	6
	Alcohol Bottle (Wine)	Olive Glass	2	13, 14
	Food Jar	Colorless Glass	1	15
	Beverage Bottle (Soda)		1	16
	Alcohol Bottle		1	17
	Indeterminate Container	Aqua Glass	1	18
	Glassware Measuring Cup	Aqua Tint Glass	1	19
	Glassware Bowl	Milk Green Glass	1	20
	Tableware Plate	Earthenware Ceramic	1	26
3	Cleaning Bottle (Bleach)	Amber Glass	2	21, 22
	Alcohol Bottle (Wine)	Olive Glass	1	23
	Glassware Cake Stand	Milk Glass	1	24
	Glassware Mug	Milk, Pink Glass	1	25
	Shoe Upper	Leather (Mammal)	1	27
		Total	19	

Subsurface Excavation

The potential for subsurface archaeological deposits at Site SDI-11,542H was investigated by excavating six STPs. The STPs were placed in and around the trash scatter as it represented an area of high artifact concentration. All of the STPs were excavated in decimeter levels to 30 centimeters or until bedrock was encountered. The soil from the STPs can be characterized as light/medium brown (10YR 6/4), semi-compacted, sandy silt. Small fragments of metal and glass were collected from the upper level of two STPs while all the remaining STPs were negative for cultural material (Table 4.3–2).

Table 4.3−2
Shovel Test Excavation Data
Site SDI-11,542H

Shovel Test	Depth (cm)	Object Type	Cultural Material	Quantity	Cat. No.
1	0-10	Indeterminate Can	Ferrous Metal	1	1
		Food Jar	Colorless Glass	1	7
		Indeterminate Bottle		1	8
		Indeterminate Container		1	9
		Alcohol Bottle (Wine)	Olive Glass	1	10
	10-20	No Recovery			
	20-30				
2	0-10	Indeterminate Can	Ferrous Metal	1	2
	0-10	Barbed Fence Wire		1	3
	0-10	Indeterminate Container	Colorless Glass	1	11
	10-20	No Recovery			
	20-30				
3	0-10	No Recovery			
	10-20				
	20-30				
4	0-10	No Recovery			
	10-20				
	20-30				
5	0-10	No Recovery			
	10-20				
	20-30				
6	0-10	No Recovery			
	10-20				
	20-30				

Shovel Test	Depth (cm)	Object Type	Cultural Material	Quantity	Cat. No.
			Total	8	

Artifact Analysis

For Site SDI-11,542H, the artifact analysis was conducted for the purpose of developing functional artifact patterns or profiles such as those established by South (1977) and refined by Van Wormer et al. (2005). The subsequent analysis resulted in the identification of an estimated minimum number of individual artifacts as well as bulk weights of non-diagnostic or unidentifiable materials. For the current study, all artifactual material was cleaned and identifiable items were cataloged according to material and type; historic artifacts were also cataloged according to product, functional category, pattern, identifying marks, manufacturer, and date when possible. The resulting information was employed to provide relevant data for functional artifact patterning, bottled product consumption patterns, and ceramic economic scaling. The resulting analyses were used to help answer the research questions posed in Section 3.0.

Cultural materials recovered from both surface collection (SC) and subsurface (STP) contexts at the site are predominantly glass (N=19; 70.37 percent), metal (N=6; 22.22 percent), ceramic (N=1; 3.70 percent), and leather (N=1; 3.70 percent) (Table 4.3–3).

Table 4.3–3
Cultural Materials Recovered From Site SDI-11,542H

Cultural Material	Recovery		Total	Percent
	SC	STP		
Ceramic	1	-	1	3.70
Glass	14	5	19	70.37
Leather	1	-	1	3.70
Metal	3	3	6	22.22
Total	19	8	27	100.00*
Percent	70.37	29.63	100.00	

**Rounded totals might not equal 100.00 percent*

All 27 artifacts were identifiable to various functional categories (Table 4.3–4). The majority of the diagnostic items recovered from both surface collection (SC) and subsurface (STP) contexts at the site are consumer items (N=17; 62.96 percent), followed by kitchen items (N=5; 18.52 percent).

Table 4.3–4
Functional Categories Represented by
Cultural Materials Recovered From Site SDI-11,542H

Functional Category	Total	Percent
Consumer Items	17	62.96
Garment Items	1	3.70
Hardware Items	1	3.70
Household Items	2	7.41
Kitchen Items	5	18.52
Personal Items	1	3.70
Total	27	100.00*

**Rounded totals might not equal 100.00 percent*

The fragmentation and location of recovered artifacts within a seasonal drainage implies the material was originally deposited at this location. Upon review of the temporally diagnostic artifacts (Table 4.3–5), the trash deposit at SDI-11,542H appears to represent a period during the mid-twentieth century, with the earliest potential manufacture date being 1905, and the latest manufacture date being 1995.

Table 4.3–5
Temporally Diagnostic Items Recovered From Site SDI-11,542H

Date Range	Object Type	Company / Manufacturer	Quantity	Cat. No. (s)
1905-1970	Cosmetic Jar	-	1	12
1933-1975	Beverage Bottle (Soda)	Nesbitt's Fruit Products Co.	1	16
1935-1979	Alcohol Can (Beer)	-	1	6
1942-1962	Cleaning Bottle (Bleach)	Foster-Forbes Glass Co.	1	21
1957-1989	Food Jar	Latchford Glass Co.	1	15
1958-1995	Alcohol Bottle (Wine)	E. & J. Gallo Winery	3	13,14, 23
1959-1962	Cleaning Bottle (Bleach)	-	1	22
		Total	9	

Discussion/Summary

The investigation of SDI-11,542H revealed that the site, artifacts, and features are associated with a rural residential property occupied during the mid-twentieth century. The trash scatter was used on a very limited basis for the dumping of mainly consumer and kitchen refuse during this period of time. Although the site consists of multiple elements, the concentration of historic artifacts does not appear extend beyond the surface scatter as subsurface investigations did not result in the discovery of any substantial or significant deposit of historic artifacts. The date of manufacture and probable deposition of the recovered artifacts coincides with the archival data indicating an occupation of the property and disposal of material during the mid-twentieth century. Due to a lack of unique elements, according to the criteria listed in CEQA, the site is evaluated as not CEQA-significant. The level of information already obtained from this site, including documentation of boundaries, collection of a sample of artifacts, dating analysis of recovered artifacts, and association of material with the mid-twentieth century use of the property has exhausted its research potential. No further archaeological investigations are recommended for Site SDI-11,542H

4.3.4 Site SDI-11,543

Site SDI-11,543 is located within the southwest corner of the APE (Plate 4.3–2). The site is situated along an east to west trending ridge approximately 250 meters south/southwest of the southern terminus of Tyler Street (see Figure 4.3–2). Disturbances at the site include natural erosion, bioturbation in the form of small mammal burrows, dirt access roads, impacts from previous vegetation clearing for fire abatement, and modern trash deposition. As the STPs did not contain any artifacts, the site boundary was defined by the surface artifacts and features with the overall site measuring five meters north to south and three meters east to west. The setting of SDI-11,543, the position of surface materials, and the location of the STPs have been illustrated on Figures 4.3–2.

Plate 4.3–2: Overview of Site SDI-11,543, facing west.

<u>Figure 4.3–2</u>
Site Investigation Map
SDI-11,543

(Deleted for Public Review; Bound Separately)

Surface Collection

The entire surface of SDI-11,543 was inspected for artifacts and features. A small number (N=9) of prehistoric lithic artifacts were collected from the site area. Artifacts were recorded using sub-meter GPS technology, provenienced from the nearest STP, collected in bags labeled with provenience information, and returned to the BFSA laboratory. The collected artifacts are classified as eight pieces of lithic debitage and one lithic core. The surface artifact recovery is summarized in Table 4.3–6.

Table 4.3–6
Surface Collection Data
Site SDI-11,543

Surface Collection	Object Type	Cultural Material	Quantity	Cat. No.
1	Core	Quartzite	1	1
2	Debitage		8	2
		Total	9	

Subsurface Excavation

The potential for subsurface archaeological deposits at Site SDI-11,543 was investigated by excavating three STPs. As surface artifacts throughout the site were sparse, STPs were placed around the lithic scatter. All of the STPs were excavated in decimeter levels to 30 centimeters or until bedrock was encountered. The soil from the STPs can be characterized as light/medium brown (10YR 6/4), semi-compacted, sandy silt. All of the STPs were negative for cultural material (Table 4.3–7).

Table 4.3–7
Shovel Test Excavation Data
Site SDI-11,543

Shovel Test	Depth (cm)	Object Type	Cultural Material	Quantity	Cat. No.
1	0-10	No Recovery			
	10-20				
	20-30				
2	0-10	No Recovery			
	10-20				
	20-30				
3	0-10	No Recovery			
	10-20				
	20-30				

Artifact Analysis

All artifacts recovered from SDI-11,543 were returned to the laboratory of BFSA for cataloging and further analysis. The artifact analysis was conducted for the purpose of developing a functional and technological interpretation of the assemblage based upon work done by Flenniken (1978, 1981) and Yohe (1998) which focuses on lithic reduction sequences emphasizing trends in reduction behavior within an archaeological context. Technological lithic analysis based upon replicative data was conducted for all of the recovered material from SDI-11,543. In total, eight pieces of lithic debitage associated with early and mid-stage cobble core reduction and one lithic core were recovered as a result of the testing program (Table 4.3–8).

Table 4.3–8
Surface Collection Data
Site SDI-11,543

Surface Collection	Object Type	Cultural Material	Quantity	Cat. No.
1	Core	Quartzite	1	1
2	Debitage		8	2
		Total	9	

The prehistoric artifact analysis for the Tyler Street Residential Project is based solely upon surface collections made at SDI-11,543, as no artifacts were recovered from the STPs. The lack of subsurface prehistoric artifacts indicates that the site likely does not represent any prehistoric occupation within the project. This is supported by the lack of milling on nearby granitic boulders. The prehistoric artifacts collected from Site SDI-11,543 consisted only of quartzite lithics similar to cobble found throughout the APE. The small number of flakes of locally obtained material and lack of tools indicates that only minor lithic production took place on-site. This production was likely associated with the quarrying and expedient testing of cobbles.

Discussion/Summary

The investigation of SDI-11,543 revealed that the site and artifacts represent a light lithic scatter likely associated with the prehistoric testing and quarrying of locally obtained cobbles. The limited number of prehistoric artifacts and smaller site size compared to when it was first recorded in 1989 is likely a result of the previous collecting and testing of the site by Knight, Leeper, and Robbins-Wade. Nevertheless, the results from this current study are the same as Knight, Leeper, and Robbins-Wade (1989b), indicating that SDI-11,543 only represents a small, light density lithic scatter with no subsurface component. Due to a lack of unique elements, according to the criteria listed in CEQA, the site is evaluated as not CEQA-significant. The level of information already obtained from this site, including documentation of boundaries, collection of a sample of artifacts,

and analysis of the artifact assemblage has exhausted its research potential. No further archaeological investigations are recommended for Site SDI-11,543.

5.0 INTERPRETATION OF RESOURCE IMPORTANCE AND IMPACT IDENTIFICATION

5.1 Resource Importance

Two previously recorded cultural resources were relocated within the Tyler Street Residential Project boundary during the current study. The testing of SDI-11,542H and SDI-11,543 has provided information indicating that neither of the two sites represents a location of archaeological significance as defined by CEQA or the City of Santee. Based upon the analysis of the recovered artifacts and testing program, both sites lack additional research potential or deposits and are evaluated as not CEQA-significant.

For Site SDI-11,542H, the artifact analysis and review of archival data indicates the site was likely occupied during a short period between the 1940s and 1960s. In addition, the small number of artifacts recovered from subsurface tests indicates the concentration of historic material found in the southwestern corner of the site does not extend beyond the limits of the surface expression of the site. The lack of any developed significant subsurface component also further indicates that the property was not occupied for an extended period of time.

For Site SDI-11,543, the lack of subsurface artifacts and the lithic recovery of eight pieces of lithic debitage and one core from the site surface suggests that the prehistoric activity was associated with the testing of material and expedient production of flake-based tools. Quartzite lithic material is extremely common in this region, and the ease of access to this material allowed prehistoric occupants to produce tools as needed without necessarily transporting raw material to use areas.

5.2 Impact Identification

The proposed development for the Tyler Street Residential Project will include the grading of the location of SDI-11,542H. Although Site SDI-11,543 is to remain in open space, increased development in the general area my indirectly impact the site through greater pedestrian use of the already established trails and dirt roads found on the property. Nevertheless, impacts to the cultural sites will not be significant as the research potential of both resources has been exhausted based upon the recovered testing data.

6.0 MANAGEMENT CONSIDERATIONS – MITIGATION MEASURES AND DESIGN CONSIDERATIONS

6.1 Unavoidable Impacts

The proposed Tyler Street Residential Project will directly and indirectly impact portions of sites SDI-11,542H and SDI-11,543 in order to develop multiple residential lots in the project APE. Site SDI-11,542H will be directly impacted as a consequence of this project. Site SDI-11,543 will remain in open space and will not be impacted. Based on the results of the current study, both sites SDI-11,542H and SDI-11,543 do not meet any of the criteria for significance in accordance with CEQA due to a lack of further research potential and limited site integrity. As a result, any impacts to SDI-11,542H and SDI-11,543 are evaluated as not significant.

6.2 Mitigation Measures

Based upon the results of the current study, sites SDI-11,542H and SDI-11,543 are evaluated as not CEQA significant based on a lack of further research potential and limited integrity. No additional archaeological mitigation measures will be required as a condition of project approval. Although no additional archaeological mitigation measures will be required for the project, a Mitigation Monitoring and Reporting Program (MMRP) is recommended as grading will expose areas within and near the previously recorded sites that may contain buried cultural deposits not observed during the survey and testing program. Based on the frequency of cultural sites in this area, the potential also exists that other resources could be exposed that are not directly associated with sites SDI-11,542H or SDI-11,543. Given these concerns, monitoring of grading is recommended to prevent the inadvertent destruction of potentially significant buried cultural deposits. The monitoring program should include both archaeological and Native American monitors. The recommended MMRP should adhere to the requirements of the City of Santee.

6.3 Significant Adverse Effects

The proposed development of the Tyler Street Residential Project will not represent a source of significant adverse impacts to cultural resources.

6.4 Native American Heritage Resources/Traditional Properties

As a consequence of the SLF search and Native American consultation, including discussions with tribal representatives during field investigations, no Traditional Cultural Properties or areas of religious or sacred importance were revealed. No artifacts were recovered that would be associated with religious practices of Native Americans.

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8.0 LIST OF PREPARERS AND ORGANIZATIONS CONTACTED

The archaeological survey program for the Tyler Street Residential Project was directed by Principal Investigator Brian F. Smith. The archaeological fieldwork was conducted by Project Archaeologist Andrew J Garrison (RPA), Archaeological Field Director Clarence Hoff, and archaeological field technician David Grabski. The report text was prepared by Andrew J. Garrison and Brian F. Smith. Report graphics were provided by Andrew J. Garrison and Caitlin Foote. Technical editing and report production were conducted by Caitlin Foote. The SCIC at SDSU provided the archaeological records search information.

9.0 LIST OF MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Resource	Mitigation Measures	Design Considerations
SDI-11,542H	None	None
SDI-11,543	None	None
General property	Monitoring during construction by a qualified archaeologist and Native American	None

APPENDIX A

Resumes of Key Personnel

Brian F. Smith, MA

Owner, Principal Investigator

Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: bsmith@bfsa-ca.com

Education

Master of Arts, History, University of San Diego, California **1982**

Bachelor of Arts, History, and Anthropology, University of San Diego, California **1975**

Professional Memberships

Society for California Archaeology

Experience

Principal Investigator **1977–Present**
Brian F. Smith and Associates, Inc. **Poway, California**

Brian F. Smith is the owner and principal historical and archaeological consultant for Brian F. Smith and Associates. Over the past 32 years, he has conducted over 2,500 cultural resource studies in California, Arizona, Nevada, Montana, and Texas. These studies include every possible aspect of archaeology from literature searches and large-scale surveys to intensive data recovery excavations. Reports prepared by Mr. Smith have been submitted to all facets of local, state, and federal review agencies, including the US Army Crops of Engineers, the Bureau of Land Management, the Bureau of Reclamation, the Department of Defense, and the Department of Homeland Security. In addition, Mr. Smith has conducted studies for utility companies (Sempra Energy) and state highway departments (CalTrans).

Professional Accomplishments

These selected major professional accomplishments represent research efforts that have added significantly to the body of knowledge concerning the prehistoric life ways of cultures once present in the Southern California area and historic settlement since the late 18th century. Mr. Smith has been principal investigator on the following select projects, except where noted.

Downtown San Diego Mitigation and Monitoring Reporting Programs: Large numbers of downtown San Diego mitigation and monitoring projects submitted to the Centre City Development Corporation, some of which included Strata (2008), Hotel Indigo (2008), Lofts at 707 10th Avenue Project (2007), Breeza (2007), Bayside at the Embarcadero (2007), Aria (2007), Icon (2007), Vantage Pointe (2007), Aperture (2007), Sapphire Tower (2007), Lofts at 655 Sixth Avenue (2007), Metrowork (2007), The Legend (2006), The Mark (2006), Smart Corner (2006), Lofts at 677 7th Avenue (2005), Aloft on Cortez Hill (2005), Front and

Beech Apartments (2003), Bella Via Condominiums (2003), Acqua Vista Residential Tower (2003), Northblock Lofts (2003), Westin Park Place Hotel (2001), Parkloft Apartment Complex (2001), Renaissance Park (2001), and Laurel Bay Apartments (2001).

Archaeology at the Padres Ballpark: Involved the analysis of historic resources within a seven-block area of the "East Village" area of San Diego, where occupation spanned a period from the 1870s to the 1940s. Over a period of two years, BFSA recovered over 200,000 artifacts and hundreds of pounds of metal, construction debris, unidentified broken glass, and wood. Collectively, the Ballpark Project and the other downtown mitigation and monitoring projects represent the largest historical archaeological program anywhere in the country in the past decade (2000-2007).

4S Ranch Archaeological and Historical Cultural Resources Study: Data recovery program consisted of the excavation of over 2,000 square meters of archaeological deposits that produced over one million artifacts, containing primarily prehistoric materials. The archaeological program at 4S Ranch is the largest archaeological study ever undertaken in the San Diego County area and has produced data that has exceeded expectations regarding the resolution of long-standing research questions and regional prehistoric settlement patterns.

Charles H. Brown Site: Attracted international attention to the discovery of evidence of the antiquity of man in North America. Site located in Mission Valley, in the city of San Diego.

Del Mar Man Site: Study of the now famous Early Man Site in Del Mar, California, for the San Diego Science Foundation and the San Diego Museum of Man, under the direction of Dr. Spencer Rogers and Dr. James R. Moriarty.

Old Town State Park Projects: Consulting Historical Archaeologist. Projects completed in the Old Town State Park involved development of individual lots for commercial enterprises. The projects completed in Old Town include Archaeological and Historical Site Assessment for the Great Wall Cafe (1992), Archaeological Study for the Old Town Commercial Project (1991), and Cultural Resources Site Survey at the Old San Diego Inn (1988).

Site W-20, Del Mar, California: A two-year-long investigation of a major prehistoric site in the Del Mar area of the city of San Diego. This research effort documented the earliest practice of religious/ceremonial activities in San Diego County (circa 6,000 years ago), facilitated the projection of major non-material aspects of the La Jolla Complex, and revealed the pattern of civilization at this site over a continuous period of 5,000 years. The report for the investigation included over 600 pages, with nearly 500,000 words of text, illustrations, maps, and photographs documenting this major study.

City of San Diego Reclaimed Water Distribution System: A cultural resource study of nearly 400 miles of pipeline in the city and county of San Diego.

Master Environmental Assessment Project, City of Poway: Conducted for the City of Poway to produce a complete inventory of all recorded historic and prehistoric properties within the city. The information was used in conjunction with the City's General Plan Update to produce a map matrix of the city showing areas of high, moderate, and low potential for the presence of cultural resources. The effort also included the development of the City's Cultural Resource Guidelines, which were adopted as City policy.

Draft of the City of Carlsbad Historical and Archaeological Guidelines: Contracted by the City of Carlsbad to produce the draft of the City's historical and archaeological guidelines for use by the Planning Department of the City.

The Mid-Bayfront Project for the City of Chula Vista: Involved a large expanse of undeveloped agricultural land situated between the railroad and San Diego Bay in the northwestern portion of the city. The study included the analysis of some potentially historic features and numerous prehistoric sites.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Audie Murphy Ranch, Riverside County, California: Project manager/director of the investigation of 1,113.4 acres and 43 sites, both prehistoric and historic—included project coordination; direction of field crews; evaluation of sites for significance based on County of Riverside and CEQA guidelines; assessment of cupule, pictograph, and rock shelter sites, co-authoring of cultural resources project report. February-September 2002.

Cultural Resources Evaluation of Sites Within the Proposed Development of the Otay Ranch Village 13 Project, San Diego County, California: Project manager/director of the investigation of 1,947 acres and 76 sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of San Diego and CEQA guidelines; co-authoring of cultural resources project report. May-November 2002.

Cultural Resources Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County: Project manager/director for a survey of 29 individual sites near the U.S./Mexico Border for proposed video surveillance camera locations associated with the San Diego Border barrier Project—project coordination and budgeting; direction of field crews; site identification and recordation; assessment of potential impacts to cultural resources; meeting and coordinating with U.S. Army Corps of Engineers, U.S. Border Patrol, and other government agencies involved; co-authoring of cultural resources project report. January, February, and July 2002.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee West GPA, Riverside County, California: Project manager/director of the investigation of nine sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of Riverside and CEQA guidelines; historic research; co-authoring of cultural resources project report. January-March 2002.

Mitigation of An Archaic Cultural Resource for the Eastlake III Woods Project for the City of Chula Vista, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. September 2001-March 2002.

Cultural Resources Survey and Test of Sites Within the Proposed French Valley Specific Plan/EIR, Riverside County, California: Project manager/director of the investigation of two prehistoric and three historic sites—included project coordination and budgeting; survey of project area; Native American consultation; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Lawson Valley Project, San Diego County, California: Project manager/director of the investigation of 28 prehistoric and two historic sites—included project coordination; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; field survey; assessment of parcel for potentially buried cultural deposits; monitoring of geotechnichal borings; authoring of cultural resources project report. Brian F. Smith and Associates, San Diego, California. June 2000.

Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/Cavadias Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; direction of field crews; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. June 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee Ranch, Riverside County, California: Project manager/director of the investigation of one prehistoric and five historic sites—included project coordination and budgeting; direction of field crews; feature recordation; historic structure assessments; assessment of sites for significance based on CEQA guidelines; historic research; co-authoring of cultural resources project report. February-June 2000.

Salvage Mitigation of a Portion of the San Diego Presidio Identified During Water Pipe Construction for the City of San Diego, California: Project archaeologist/director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project, Pacific Beach, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. March-April 2000.

Salvage Mitigation of a Portion of Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project and Caltrans, Carlsbad, California: Project achaeologist/ director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. December 1999-January 2000.

Survey and Testing of Two Prehistoric Cultural Resources for the Airway Truck Parking Project, Otay Mesa, California: Project archaeologist/director—included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; authoring of cultural resources project report, in prep. December 1999-January 2000.

Cultural Resources Phase I and II Investigations for the Tin Can Hill Segment of the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for a survey and testing of a prehistoric quarry site along the border—NRHP eligibility assessment; project coordination and budgeting; direction of field crews; feature recordation; meeting and coordinating with U.S. Army Corps of Engineers; co-authoring of cultural resources project report. December 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Westview High School Project for the City of San Diego, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. October 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Otay Ranch SPA-One West Project for the City of Chula Vista, California: Project archaeologist/director—included direction of field crews; development of data recovery program; management of artifact collections cataloging and curation; assessment of

site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report, in prep. September 1999-January 2000.

Monitoring of Grading for the Herschel Place Project, La Jolla, California: Project archaeologist/ monitor—included monitoring of grading activities associated with the development of a single-dwelling parcel. September 1999.

Survey and Testing of a Historic Resource for the Osterkamp Development Project, Valley Center, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; budget development; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Testing of a Prehistoric Cultural Resource for the Proposed College Boulevard Alignment Project, Carlsbad, California: Project manager/director —included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report, in prep. July-August 1999.

Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California: Project archaeologist—included direction of field crews; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Evaluation of Cultural Resources at the Village 2 High School Site, Otay Ranch, City of Chula Vista, California: Project manager/director —management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report. July 1999.

Cultural Resources Phase I, II, and III Investigations for the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for the survey, testing, and mitigation of sites along border—supervision of multiple field crews, NRHP eligibility assessments, Native American consultation, contribution to Environmental Assessment document, lithic and marine shell analysis, authoring of cultural resources project report. August 1997-January 2000.

Phase I, II, and II Investigations for the Scripps Poway Parkway East Project, Poway California: Project archaeologist/project director—included recordation and assessment of multicomponent prehistoric and historic sites; direction of Phase II and III investigations; direction of laboratory analyses including prehistoric and historic collections; curation of collections; data synthesis; coauthorship of final cultural resources report. February 1994; March-September 1994; September-December 1995.

Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System Project, San Elijo, California: Project manager/director —test excavations; direction of artifact identification and analysis; graphics production; coauthorship of final cultural resources report. December 1994-July 1995.

Evaluation of Cultural Resources for the Environmental Impact Report for the Rose Canyon Trunk Sewer Project, San Diego, California: Project manager/Director —direction of test excavations; identification and analysis of prehistoric and historic artifact collections; data synthesis; co-authorship of final cultural resources report, San Diego, California. June 1991-March 1992.

Reports/Papers

Author, coauthor, or contributor to over 2,500 cultural resources management publications, a selection of which are presented below.

2015 An Archaeological/Historical Study for the Safari Highlands Ranch Project, City of Escondido, County of San Diego.

2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels II Project, Planning Case No. 36962, Riverside County, California.

2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels I Project, Planning Case No. 36950, Riverside County, California.

2015 Cultural Resource Data Recovery and Mitigation Monitoring Program for Site SDI-10,237 Locus F, Everly Subdivision Project, El Cajon, California.

2015 Phase I Cultural Resource Survey for the Woodward Street Senior Housing Project, City of San Marcos, California (APN 218-120-31).

2015 An Updated Cultural Resource Survey for the Box Springs Project (TR 33410), APNs 255-230-010, 255-240-005, 255-240-006, and Portions of 257-180-004, 257-180-005, and 257-180-006.

2015 A Phase I and II Cultural Resource Report for the Lake Ranch Project, TR 36730, Riverside County, California.

2015 A Phase II Cultural Resource Assessment for the Munro Valley Solar Project, Inyo County, California.

2014 Cultural Resources Monitoring Report for the Diamond Valley Solar Project, Community of Winchester, County of Riverside.

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APPENDIX B

Updated Site Record Forms

(Deleted for Public Review; Bound Separately)

APPENDIX C

Archaeological Records Search Results

(Deleted for Public Review; Bound Separately)

APPENDIX D

NAHC Sacred Lands File Search Results

(Deleted for Public Review; Bound Separately)

APPENDIX E

Confidential Maps

(Deleted for Public Review; Bound Separately)

APPENDIX F

Artifact Catalogs

APPENDIX E

ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Suite B
Escondido, California 92029
Telephone: (619) 867-0487 Fax: (714) 409-3287

TYLER DEVELOPMENT, LLC
4204 Jutland Drive
San Diego, California 92117

March 15, 2019
P/W 1310-04
Report No. 1310-04-B-6

Attention: **Mr. Marc Harris**

Subject: ***Response to City of Santee Review Comments and Geotechnical Third-Party Review, Tyler Street Residential Development, Southeast of Tyler Avenue and Mesa Heights Road, Santee, California***

References: See Appendix A

Gentlemen:

Advanced Geotechnical Solutions, Inc., (AGS) has prepared this response to City of Santee review comments and third-party geotechnical review (third review) conducted by Geocon Incorporated (Geocon) dated November 27, 2018, on behalf of the City of Santee. The review comments precede AGS' responses. Copies of the City of Santee review memos and the third-party review letter are provided in Appendix A.

City of Santee Planning Division Comment 8: *The geotechnical report still states that earthwork may extend outside of the property and into the ephemeral stream. The consultant's response to comments noted that this was incorrectly stated and that the related drawings had been updated. Please update the text in the geotechnical report reflecting this.*

AGS Response: AGS has revised the subject geotechnical report to indicate that it is feasible to construct the shear key and achieve proposed removals without extending outside of the property limits and into the ephemeral stream. See section "6.1.3 Removals Along Grading Limits and Property Lines" for revised text reflecting this update. A copy of the revised geotechnical report (AGS, 2019) is included in Appendix B.

City of Santee Engineering Division Comment 3: *Geotechnical Study:*
a. The preliminary grading plan within the geotechnical investigation shall be updated to reflect the most recent design.
b. The Geotechnical Engineer and Geologist shall review the proposed water quality facilities and provide recommendations due to the potential geotechnical/geologic hazards that are present within the geologic formations in and adjacent to the project limits.
c. The 3rd party review comments by Geocon are provided under separate letter.

AGS Response: 3a. AGS has updated our Geologic Map and Exploration Location Plan (Plate 1) and associated cross sections (Plates 2 & 3) to reflect the current design prepared by Walsh Engineering and Surveying, Inc., dated March 12, 2019. The updated Plates 1 through 3 are attached to our revised geotechnical report (AGS, 2019) included in Appendix B.

3b. AGS has reviewed the current proposed water quality facilities for the project. The current plans utilize bio-filtration 'rain gardens' that are lined with an impermeable membrane. The use of impermeable membranes provide adequate mitigation for potential geotechnical/geologic hazards that

may arise due to the proposed water quality facilities. From a geotechnical perspective, the proposed water quality facilities were designed in accordance with AGS recommendations.

3c. AGS response to 3rd party review comments by Geocon are presented below.

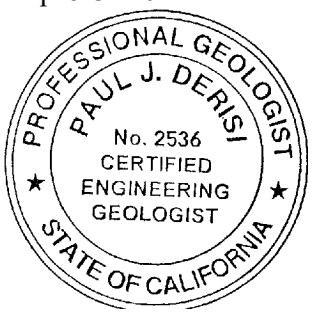
Comment 11: *The project civil engineer is proposing tree wells on the subject lots that appear to allow infiltration adjacent to descending slopes (see Pad Tree Well Detail in the referenced SWQMP). The geotechnical engineering consultant should comment on the suitability of these storm water management devices and provide recommendations to help prevent slope instability and seepage from the planned infiltrated water.*

AGS response: The tree wells have been removed from the current project plans. The project civil engineer is now utilizing bio-filtration 'rain gardens' located at the back of sidewalk. The rain gardens are lined with an impermeable membrane and have a 6-inch diameter underdrain. AGS has reviewed the details presented of Sheet 2 of the subject plans prepared by Walsh Engineering and Surveying, Inc. and considers the rain gardens to be suitable from a geotechnical perspective.

The opportunity to be of service is sincerely appreciated. If you should have any questions, please do not hesitate to contact the undersigned.

JOHN J. DONOVAN
RCE 65051, RGE 2790, Reg. Exp. 6-30-19

PAUL J. DERISI
CEG 2536, Reg. Exp. 5-31-19



Distribution: (2) Addressee

Appended: Appendix A: References and Copy of Review Sheet
Appendix B: Revised Geotechnical Investigation

APPENDIX A

REFERENCES AND REVIEW SHEET

APPENDIX A

CITED REFERENCES

Advanced Geotechnical Solutions, Inc. (2019). *Preliminary Geotechnical Investigation for Tyler Street Residential Development, Santee, California*. P/W 1310-04, Report No. 1310-04-B-2, June 30, 2016 (Revised March 15, 2019).

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COPY OF REVIEW SHEET

CITY OF SANTEE
INTER-OFFICE MEMO

TO: John O'Donnell, Principal Planner

FROM: Doug Thomsen, Senior Planner

DATE: November 20, 2018

SUBJECT: **TYLER STREET – TENTATIVE MAP FOR A 14 LOT SUBDIVISION (TM2017-1)**

Planning has reviewed the resubmittal of TM2017-4 and associated applications and deem the application incomplete. The following comments apply:

Application

1. A proposed ordinance amending the Santee General Plan was submitted which would require voter approval of development actions that would increase residential density or intensity of land use over that currently permitted by the General Plan. The proposed Tyler Street TM cannot be heard by the City Council until the outcome of the proposed ordinance is known.

Wall and Fence Plan

2. A standard retaining wall drawing is shown, but a color elevation of the retaining wall similar to the other two proposed fence types will be needed.

3. A gray line is shown in the legend to represent retaining walls, but no gray lines are used on the plan. Show the retaining walls on the plan using gray lines.

Landscaping Plan

4. Street trees were removed from the street biofiltration basins on the grading plans. Make sure the landscaping plans reflect the final design for bioretention shown on the TM and grading plans.

Biological Assessment (October 5, 2018), **Quino Checkerspot Butterfly Report** (April 16, 2013), **and California Gnatcatcher Report** (April 16, 2013) (BLUE consulting Group)

5. Confirm that Lot B will be preserved in an open space easement and identify any maintenance and management plans for this lot.

6. When referring to the City's 2006 Subarea Plan, consistently refer to it as the "draft MSCP Subarea Plan".

7. Quino and Gnatcatcher surveys were conducted over four years ago. The Wildlife Agencies may consider this information outdated. Confirm with the Wildlife Agencies that the 2013 data remains valid and explain that in the report.

Geotechnical Report

8. The geotechnical report still states that earthwork may extend outside of the property and into the ephemeral stream. The consultant's response to comments noted that this was incorrectly stated and that the related drawings had been updated. Please update the text in the geotechnical report reflecting this.

Environmental Review

9. Based on the Application for Environmental Initial Study and technical reports submitted, the project will not have significant impact with mitigation. Therefore, an Initial Study and Mitigated Negative Declaration (MND) shall be prepared by a qualified environmental consultant in accordance with CEQA Guidelines Section 15071. Additional technical studies may be required by the consultant to complete the Initial Study/MND. All costs associated with completion of the CEQA documentation are to be done by the project applicant. A recent example of a final MND can be provided electronically for reference if requested.

CITY OF SANTEE
INTER-OFFICE MEMO

TO: Doug Thomsen, Senior Planner

VIA: Scott A. Johnson, Principal Civil Engineer

FROM: Claire Singh, Associate Civil Engineer

DATE: November 20, 2018

SUBJECT: Tyler Street Subdivision (TM 2017-01, DR 2017-01)

The Engineering Division has reviewed tentative map, TM 2017-01, dated October 22, 2018, applications for a 14-lot single family residential subdivision located at Tyler Street and Mesa Height Road, and recommends that you find the application to be incomplete.

Please request the applicant address the following:

1. Submit a revised tentative map and preliminary grading plan that address the following:

    a. The engineer of work shall sign the preliminary grading plan and the tentative map.

    b. Show the remedial grading limits on the preliminary grading plan.

    c. Show driveways per SDRSD G-14A and slopes of driveways for each lot.

    d. The proposed mailbox location shall be located within the subdivision limits. Currently the mailbox location varies between the preliminary grading plan and the plot plan

    e. Provide another typical street section for Tyler Street showing the proposed biofiltration basin on both sides of the street.

    f. Proposed biofiltration basins shall be constructed within the subdivision limits to avoid impact on adjacent properties.

    g. Add a note on the preliminary grading plan that all biofiltration basins within the public right-of-way to be maintained by homeowner's association.

    h. Revise the basin section to show a total of 15" gravel thickness per Worksheet B.5-1 of the Storm Water Quality Management Plan. The basin detail shall meet the requirements per the BMP Design Fact Sheet BF-1.

    i. Clarify how the biofiltration basins will overflow.

j. Coordinate space in the parkway for utility pedestals, street lights, hydrants, mailbox, driveways, and biofiltration basins.

k. Show the proposed pad tree well detail for individual lots.

l. The proposed pavement section for Tyler Street shall be per the City of Santee's Public Works Standards based upon the proposed street grade. Typical sections between the preliminary grading plan and the tentative map shall match.

2. Coordinate with Padre Dam Municipal Water District for review of the most recent tentative map, and provide updated sewer/water availability letters with conditions on required easements.

3. Geotechnical Study

a. The preliminary grading plan within the geotechnical investigation shall be updated to reflect the most recent design.

b. The Geotechnical Engineer and Geologist shall review the proposed water quality facilities and provide recommendations due to the potential geotechnical/geologic hazards that are present within the geologic formations in and adjacent to the project limits.

c. The 3rd party review comments by Geocon are provided under separate letter.

4. Drainage Study

a. Update the drainage study submitted on 4/4/2018 as necessary to reflect the most recent design.

5. Storm Water Quality Management Plan (SWQMP) – Refer to the written comments annotated in the returned report.

a. The project owner shall sign and date the owner's certification page.

b. Include a discussion on de minimus and self-retaining slope areas to clarify that no treatment is required in these areas.

c. The O&M plan in Attachment 3A shall be project/site specific and not verbatim from the BMP Design Manual. Specify in the SWQMP that the homeowners association will own and maintain proposed rain gardens.

Project No. G1891-52-06
November 27, 2018

City of Santee
Department of Development Services
10601 Magnolia Avenue
Santee, California 92071

Attention: Ms. Claire Chang

Subject: GEOTECHNICAL THIRD-PARTY REVIEW (THIRD REVIEW)
TYLER STREET RESIDENTIAL DEVELOPMENT
SOUTHEAST OF TYLER AVENUE AND MESA HEIGHTS ROAD
SANTEE, CALIFORNIA

Dear Ms. Chang:

In accordance with your request, we performed a review of the referenced geotechnical documents (see *List of References*) to present our opinion regarding the suitability of the conclusions and recommendations provided within the geotechnical report and subsequent response letters.

REVIEW COMMENTS

Based on our review of the referenced geotechnical documents and plans, the following comments should be addressed by the design team.

1. Previously accepted.

2. Previously accepted.

3. Accepted – The consultant has provided preliminary recommendations for the proposed shoring system and slot-cutting methodology for the shear key excavations. The consultant has also stated that these recommendations will be re-evaluated after completion of proposed additional field exploratory work. We recommend that the consultant review their recommended slot-cutting spacing and sequencing after shoring plans have been prepared to avoid destabilization of the soldier piles during a single cut grouping. The shoring engineer should design the proposed shoring to accommodate the slot-cutting as well. Additionally, the consultant should verify that their recommended lateral earth pressures are adequate for the existing backslope conditions after completion of the additional field exploration.

4. Previously accepted.

5. Previously accepted.

6. Previously accepted.

7. Previously accepted.

8. Previously accepted.

9. Accepted – The consultant has indicated that a review of the strength parameters used for the stability analyses will be performed after additional field explorations are performed.

10. Accepted – The project civil engineer has removed "street trees" from the proposed storm water biofiltration basins.

11. **NEW COMMENT** – The project civil engineer is proposing tree wells on the subject lots that appear to allow infiltration adjacent to descending slopes (see Pad Tree Well Detail in the referenced SWQMP). The geotechnical engineering consultant should comment on the suitability of these storm water management devices and provide recommendations to help prevent slope instability and seepage from the planned infiltrated water.

Should you have any questions regarding this letter, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON INCORPORATED

Shawn Foy Weedon	Matthew R. Love	David B. Evans
GE 2714	RCE 84154	CEG 1860

SFW:MRL:DBE:dmc

(e-mail) Addressee

LIST OF REFERENCES

1. *Advanced Geotechnical Solutions, Inc., Response to Geotechnical Third Party Review (2nd), Tyler Street Residential Development, Santee, California.,* dated October 4, 2018 (Report No. 1310-04-B-5).

2. *Advanced Geotechnical Solutions, Inc., Response to Geotechnical Third Party Review(1st), Tyler Street Residential Development, Santee, California.,* dated December 8, 2017 (Report No. 1310-04-B-3).

3. *Advanced Geotechnical Solutions, Inc., Preliminary Geotechnical Investigation for Tyler Street Residential Development, Santee, California.,* dated June 30, 2016 (Report No. 1310-04-B-2).

4. *Geocon Incorporated, Geotechnical Third-Party Review (2nd), Tyler Street Residential Development, Southeast Corner of Tyler Avenue and Mesa Heights Road, Santee, California.,* dated May 1, 2018 (Project No. G1891-52-06).

5. *Geocon Incorporated, Geotechnical Third-Party Review (1st), Tyler Street Residential Development, Southeast Corner of Tyler Avenue and Mesa Heights Road, Santee, California.,* dated August 16, 2017 (Project No. G1891-52-06).

6. Walsh Engineering and Surveying, Incorporated, *Preliminary Grading Plan, Tyler Street Project, Santee, California,* revised October 11, 2018.

7. Walsh Engineering and Surveying, Incorporated, *Slope Analysis, Tyler Street Project, Santee, California,* dated February 27, 2018.

8. Walsh Engineering and Surveying, Incorporated, *Storm Water Quality Management Plan [SWQMP], Tyler Street Project, Santee, California,* dated November 16, 2018.

Project No. G1891-52-06
May 1, 2018

City of Santee
Department of Development Services
10601 Magnolia Avenue
Santee, California 92071

Attention: Ms. Claire Chang

Subject: GEOTECHNICAL THIRD PARTY REVIEW
TYLER STREET RESIDENTIAL DEVELOPMENT
SOUTHEAST OF TYLER AVENUE AND MESA HEIGHTS ROAD
SANTEE, CALIFORNIA

Dear Ms. Chang:

In accordance with your request, we performed a review of the referenced geotechnical documents and plans (see *List of References*) to present our opinion regarding the suitability of the conclusions and recommendations provided within the geotechnical report and subsequent response letter.

REVIEW COMMENTS

Based on our review of the referenced geotechnical documents and plans, the following comments should be addressed by the design team.

1. Accepted.

2. Accepted.

3. ***Previous Comment:***

   Section 6.1.3 discusses remedial grading along the project margins and possible impacts to the currently proposed and existing developments. Specifically, the forecut to construct the proposed shear key along the north, northeast and eastern project margins appears to be constrained by the property line. It is also stated that grading may need to extend off-site and/or "shoring or specialized grading techniques" may be necessary to accomplish the remedial design.

Section 6.2.7 states that "backcuts and forecuts in favorably bedded creep-affected Friars Formation should be made no steeper than 1:1 (horizontal:vertical) to heights of up to 20 feet, and 1½:1 (horizontal:vertical) to heights greater than 20 feet. Flatter backcuts may be necessary where geologic conditions dictate, such as unfavorably oriented discontinuities". Since the proposed shear key excavation is greater than 20 feet, both the forecut and backcut of the shear key is recommended to be inclined at 1½:1 which will impact grading along the project margins and off-site.

The report also states "future studies should present a more detailed evaluation of the stability of temporary cuts adjacent to existing improvements, including the forecuts needed for the stabilization shear keys below off-site adjacent properties". Where improvements may be affected by temporary instability, either on or off-site, further restrictions such as slot cutting, installing shear piles and/or tiebacks" may be necessary.

In light of the consultant recognizing the need for a more detailed evaluation of the boundary conditions, additional subsurface exploration with large-diameter borings, geologic cross-sections and additional analysis is recommended in the vicinity of Lot A, and Lots 1 through 6 to verify that the proposed remedial grading can be accomplished without impacting the adjacent properties. It is our opinion that the "future studies" should be performed prior to the Tentative Map approval to check that there are no geotechnical constraints to developing the property as presently proposed.

At least several additional large-diameter borings should be advanced along the trend of the shear key, and up-slope to enable adequate cross section and slope stability analyses. The information from the borings should be used to analyze the temporary and ultimate stability of the forecut and surrounding areas. Particularly, in an east-west direction directly south of the shear key along the eastern property line. In this area, the property line will constrain grading of the forecut and the driving force from the adjacent property is in a westerly direction at that location. In addition, cross sections should also be oriented in the direction of the maximum driving force (northeast-southwesterly) and consider any seepage conditions, if encountered.

Additional Comment:

The consultant has provided additional cross sections, as requested, and revised the forecut ratios to 1.5:1 (horizontal:vertical). In addition, AGS performed additional slope stability analyses for the temporary forecut conditions along two cross sections; one on the southeast end of the keyway (E-E') and one on the northwest end of the keyway (F-F'). The results yielded factors of safety for a temporary condition greater than and less than the generally accepted requirements for the northwest and southeast sections, respectively. AGS acknowledged that the final geotechnical design is pending additional studies and that forecut ratios may need to be steepened to remove unsuitable materials.

The consultant has proposed that slot cutting or shoring as a potential solution for the instability concerns during a temporary condition for the planned grading operations. We agree that slot cutting is typically an effective and appropriate procedure when there is adequate space to perform the work. In this regard, staged slot cutting from an intermediate grade at the southeast end of the key would be challenging since the excavation is

approximately 40-feet-deep. Further slope stability analyses would be required if this procedure is contemplated to evaluate whether or not an appropriate factor of safety for the interim grade can be achieved that would allow deep slot cutting to be performed. These analyses should be completed at this time to determine if the proposed development can be constructed. In addition, the consultant states shoring can be used. The consultant should provide the shoring design recommendations.

The consultant has provided their opinion that "development of the project site as currently proposed is feasible from a geotechnical perspective". The consultant also acknowledges that additional field work will be necessary and that the study can be performed during development of the project grading plans. With respect to the timing of additional studies, it is typical and preferred to determine the means and methods required for project stabilization along the property margins during the Tentative Map process. The reason is that the project may be constrained by the geotechnical conditions and deemed logistically infeasible due to the inability to mitigate the conditions and/or the risk of potential impacts to surrounding improvements/properties. At this time, the consultant can provide recommendations and analysis for slot cutting, temporary shoring, and any other considered methodology for project stabilization along the property margins using the existing data and the additional drilling can be performed during the grading plan submittal process.

4. Accepted.

5. Accepted.

6. Accepted.

7. Accepted.

8. Accepted.

9. ***New Comment:***

The stability analyses for cross sections E-E' and F-F' include a friction angle of 12 degrees and cohesion of 100 pounds per square foot (psf) for the "clay bed" materials in the response letter dated December 8, 2017. The original report dated June 30, 2016 incorporates a friction angle of 8 degrees and cohesion of 100 psf for what appears to be the same materials (identified as "basal rupture surface" in the report). The consultant should provide laboratory testing and/or calculations to justify the increased strength parameters for the basal/clay bed in the stability analyses.

10. ***New Comment:***

Sheet 2 of the referenced preliminary grading plans dated April 4, 2017 present details of the proposed "Street Tree Detail." This detail shows a basin that possesses about 4 feet of "amended soil," a subdrain and an impermeable liner. The proposed tree and root ball are located within the "amended soil," above the planned subdrain and the impermeable liner. Additional details may be required for the planned "Street Tree Detail." The project geotechnical engineer, civil engineer and/or landscape architect should provide specifications

for the proposed subdrain and liner that would prevent the subdrain from being clogged from roots and prevent the liner from being punctured from roots.

In addition, the landscape architect should clarify if the tree can be planted and properly grow as planned. We understand the "amended soil" likely will not be compacted to fill specifications and will be relatively loose to help allow water infiltration. If the "amended soil" is not properly compacted, will the tree topple during high winds?

Should you have any questions regarding this letter, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON INCORPORATED

Shawn Foy Weedon	Matthew R. Love	David B. Evans
GE 2714	RCE 84154	CEG 1860

SFW:MRL:DBE:dmc

(e-mail) Addressee

LIST OF REFERENCES

1. *Advanced Geotechnical Solutions, Inc., Response to Geotechnical Third Party Review, Tyler Street Residential Development, Santee, California.,* dated December 8, 2017 (Report No. 1310-04-B-3).

2. *Advanced Geotechnical Solutions, Inc., Preliminary Geotechnical Investigation for Tyler Street Residential Development, Santee, California.,* dated June 30, 2016 (Report No. 1310-04-B-2).

3. *Geocon Incorporated, Geotechnical Third Party Review, Tyler Street Residential Development, Southeast Corner of Tyler Avenue and Mesa Heights Road, Santee, California.,* dated August 16, 2017 (Project No. G1891-52-06).

4. Walsh Engineering and Surveying, Incorporated, *Preliminary Grading Plan, Tyler Street Project, Santee, California,* dated April 4, 2018.

5. Walsh Engineering and Surveying, Incorporated, *Slope Analysis, Tyler Street Project, Santee, California,* dated February 27, 2018.

APPENDIX B

REVISED GEOTECHNICAL INVESTIGATION

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(Revised March 15, 2019) June 30, 2016
P/W 1310-04
Report No. 1310-04-B-2R

Attention: Mr. Marc Harris

Subject: Revised Preliminary Geotechnical Investigation for Tyler Street Residential Development, Santee, California

References: See Appendix A

Gentlemen:

Pursuant to your request, presented herein are the results of Advanced Geotechnical Solutions, Inc.'s, (AGS) revised preliminary geotechnical investigation for the Tyler Street Residential Development Project in Santee, California. AGS has been retained to complete the geotechnical services supporting the tentative map approval process for this project.

AGS has conducted field mapping, performed subsurface exploration and laboratory testing, performed additional engineering and geologic analysis, and reviewed the latest Tentative Map for the Tyler Street Project. The purpose of this report is to evaluate the proposed Tentative Map plans relative to the near-site and on-site geologic and geotechnical conditions and provide conclusions and recommendations to aid in the development of the project.

Advanced Geotechnical Solutions, Inc., appreciates the opportunity to provide you with geotechnical consulting services and professional opinions. If you have any questions, please contact the undersigned at (619) 867-0487.

Respectfully Submitted,
Advanced Geotechnical Solutions, Inc.

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FIGURE 1- SITE LOCATION MAP
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1.0 INTRODUCTION

1.1. Background and Purpose

The purpose of this report is to provide a "Tentative Map" (TM) level geotechnical study that may be utilized to support the submittal for the proposed Tentative Map for the Tyler Street Residential Project located in Santee, California. This report has been prepared to address the most current TM conceptual design and preliminary grading plan prepared by Walsh Engineering and Surveying, Inc., in a manner consistent with City of Santee geotechnical report guidelines and current standard of practice. Geotechnical conclusions and recommendations are presented herein, and the items addressed include: 1) Unsuitable soil removals and remedial grading; 2) Cut, fill and natural slope stability; 3) Potential geologic hazards which may be onsite and general mitigation measures for these hazards; 4) Design recommendations for Buttress/Stabilization fills; 5) Cut and cut/fill transition pad overexcavation criteria; 6) Remedial and design grading recommendations; 7) Rippability of the onsite bedrock; and 8) General foundation design recommendations based upon anticipated as graded soil conditions.

1.2. Scope of Study

The scope of this study included the following tasks:

- Review of pertinent published and unpublished geologic and geotechnical literature, maps, and aerial photographs readily available to this firm (Appendix A).
- Review of geotechnical investigation and as-graded reports for adjacent residential developments (Appendix A).
- Excavate, log, and sample nine (9) rubber tire backhoe test pits T-1 through T-9 in January 2016 (Appendix B).
- Excavate, log, and sample four (4) 30-inch diameter bucket auger borings BA-1 through BA-4 in February 2016 (Appendix B).
- Laboratory testing of “undisturbed” and bulk samples including: in-situ moisture content and density; maximum dry density and optimum moisture; “undisturbed” and remolded shear strength; grain size analysis; and Atterberg limits (Appendix C).
- Prepare geologic/geotechnical cross-sections A-A’ through C-C’ as shown on Plate 2.
- Conduct a geotechnical engineering and geologic hazard analysis of the site.
- Provide synopsis of site’s geologic and tectonic settings.
- Conduct a limited seismicity analysis.
- Provide compaction criteria and general earthwork specifications.
- Develop remedial grading recommendations.
- Slope stability analysis of both the highest cut and fill slopes (Appendix D).
- Preliminary design of shear key to stabilize onsite creep-affected soils (Appendix D).

- Evaluation of the excavation characteristics (i.e. rippability) of onsite bedrock materials.
- Discussion of pertinent geologic and geotechnical topics as they relate to the proposed development.
- Prepare general foundation design parameters which can be used for preliminary design.
- Provide preliminary pavement design.
- Prepare this report and associated exhibits summarizing our findings and recommendations. This report is intended for preliminary design support and for your initial regulatory review.

1.3. Geotechnical Study Limitations

The conclusions and recommendations in this report are professional opinions based on the data developed during this investigation. The conclusions presented herein are based upon the current design as reflected on the included Tentative Tract Map. Changes to the plan would necessitate further review.

The materials immediately adjacent to or beneath those observed may have different characteristics than those observed. No representations are made as to the quality or extent of materials not observed. Any evaluation regarding the presence or absence of hazardous material is beyond the scope of this firm's services.

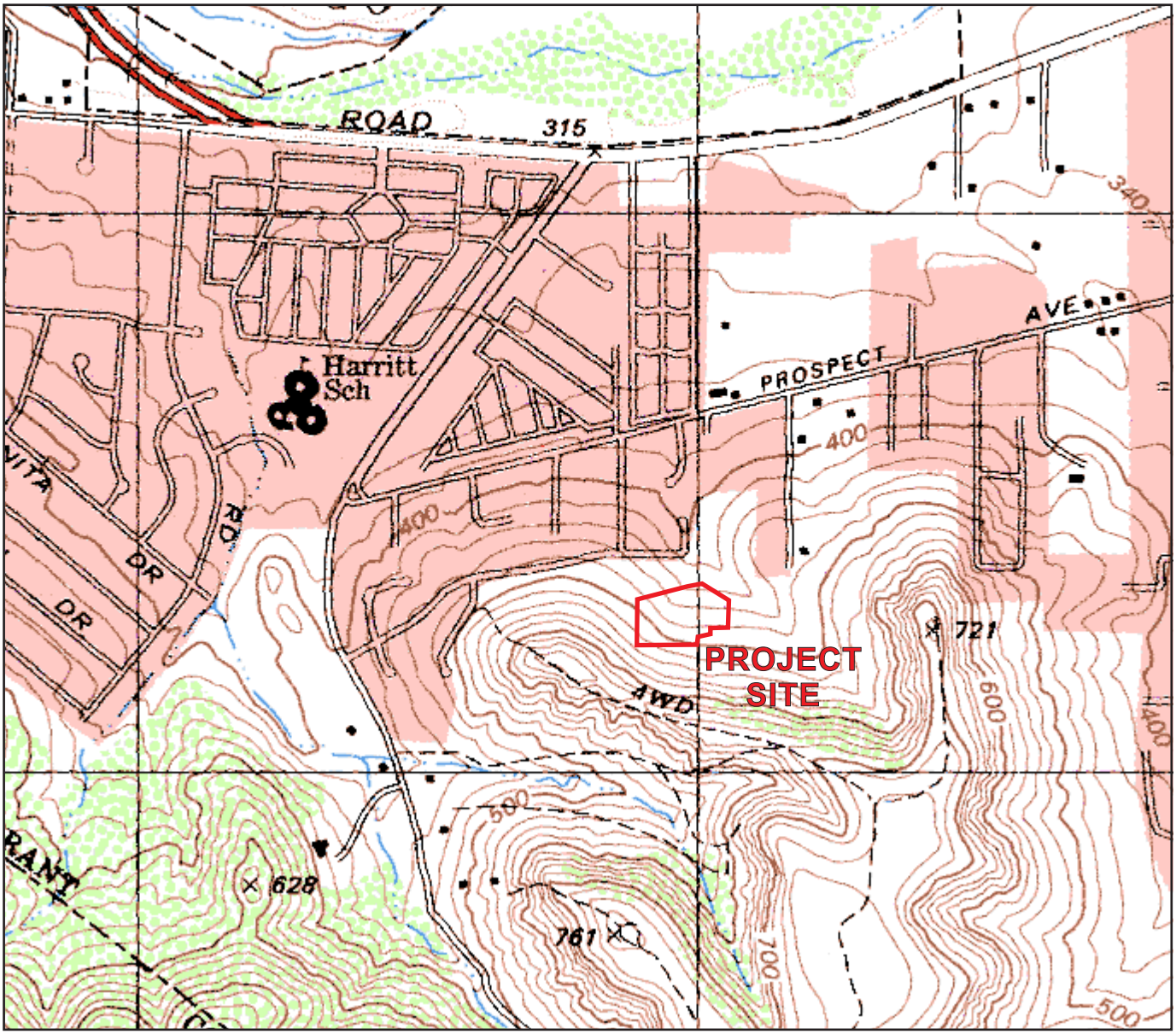
2.0 SITE LOCATION AND DESCRIPTION

2.1. Site Location and Description

The irregularly shaped site is located south of the southerly terminus Tyler Street in Santee, California. The site is bounded to the north by Tyler Street, existing single-family residences, and undeveloped land; to the east by vacant land and existing single family residences; and to the south and west by vacant land. A minor northwesterly flowing drainage occupies the northeast site boundary. The overall project area is situated along the northerly flank of a roughly east-west trending ridge near the southern property limit (Figure 1, U.S.G.S. Site Location Map). The area of proposed site development is limited to the lower and more gradually sloping portion of the site southerly adjacent to the current southerly terminus of Tyler Street. In general, the lower portion of the site adjacent to Tyler Street is gently to moderately sloping with overall drainage flowing to the north. Elevations within the proposed development limits range from a low elevation of 422 msl in the north to a high of 540 msl in the south.

2.2. Proposed Development

Based on the current preliminary grading plans, the site will be graded to support 14 residential lots and associated improvements with access afforded by a south-southeasterly cul-de-sac extension of Tyler Street. As currently designed, fills up to approximately 33 feet are anticipated and the anticipated deepest cuts are approximately 27 feet. Cut and fill slopes are designed at 2:1 (horizontal to vertical) or flatter to maximum heights on the order of 45 feet.



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SITE LOCATION MAP
TYLER STREET PROJECT
SANTEE, CALIFORNIA

P/W 1310-04

FIGURE 1

SOURCE MAP - TOPOGRAPHIC MAP OF THE
LA MESA 7.5 MINUTE QUADRANGLE,
SAN DIEGO COUNTY, CALIFORNIA

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3.0 FIELD AND LABORATORY INVESTIGATION

In preparing this report AGS performed a field investigation consisting of the excavation, logging, and sampling of:

- Geologic field mapping of surface exposures.
- Nine (9) rubber tire backhoe test pits T-1 through T-9 in January 2016 to depths up to 15 feet below ground surface.
- Four (4) 30-in. diameter bucket auger borings BA-1 through BA-4 in February 2016 to depths up to 70 feet below ground surface.

Test pit and boring logs are presented in Appendix B. Selected bulk samples and "undisturbed" ring samples obtained during our field investigation were transported to our approved laboratory for testing and analysis. Results of that testing are presented in Appendix C.

4.0 ENGINEERING GEOLOGY

4.1. Geologic Analysis

4.1.1. Literature and Aerial Photograph Review

AGS has reviewed the referenced geologic documents and aerial photographs dating back to 1953 in preparing this study. Where deemed appropriate, this information has been included with this document.

4.1.2. Review of Adjacent Geotechnical Reports

AGS reviewed the following geotechnical investigation and grading reports for adjacent residential developments. Prospect Hills is located to the northeast of the project site. Padre Hills is located to the north/northwest of the project site and shares a common boundary with the site.

Prospect Hills

Sage Engineering, Inc., Geotechnical Investigation, Proposed Prospect Hills II Residential Development, Project No. 6002, dated March 31, 1996

Sage Engineering, Inc., Response to Third Party Review, Project No. 6002, dated February 14, 1997

Sage Engineering, Inc. Final As-Graded Geotechnical Report, Prospect Hills II, Project No. 7051, dated October 30, 1998

Padre Hills

Geocon, Inc., Soil and Geologic Investigation for a 36-Lot Subdivision, Santee, California, File No. D-2657-MO2, dated March 6, 1989

Sage Engineering, Inc., Supplemental Geotechnical Investigation, Padre Hills Residential Development, Project No. 4017, July 21, 1994

Sage Engineering, Inc., Final As-Graded Geotechnical Report, Padre Hills Residential Development, Project No. 4018, May 16, 1995

4.2. Regional Geologic and Geomorphic Setting

The subject site is situated within the Peninsular Ranges Geomorphic Province. The Peninsular Ranges province occupies the southwestern portion of California and extends southward to the southern tip of Baja California. In general, the province consists of young, steeply sloped, northwest trending mountain ranges underlain by metamorphosed Late Jurassic to Early Cretaceous-aged extrusive volcanic rock and Cretaceous-aged igneous plutonic rock of the Peninsular Ranges Batholith. The westernmost portion of the province, where the subject site is located, is predominantly underlain by younger marine and non-marine sedimentary rocks. The Peninsular Ranges' dominant structural feature is northwest-southeast trending crustal blocks bounded by active faults of the San Andreas transform system.

A regional geology map is shown on Figure 2.

4.3. Site Geology

A brief description of the earth materials encountered on this site is presented in the following sections. More detailed description of these materials is provided in the logs included in Appendix B.

Based on our site reconnaissance and subsurface excavations, geologic maps and literature, the area of proposed development is mantled by a thin veneer of undocumented fill, topsoil, alluvium, and colluvium underlain by Friars Formation to the maximum depths explored.

4.3.1. Surficial Units

Surficial units onsite include, Undocumented Fill (map symbol afu), Topsoil (unmapped), Alluvium (map symbol Qal), and Colluvium (map symbol Qcol). Detailed descriptions of these units are presented below.

4.3.1.1. *Undocumented Fill (afu)*

Artificial fill was encountered in test pit T-6 at the northern property limits and is likely associated with previous grading for the residential development to the north. As encountered, these materials can generally be described as light yellowish brown to dark gray sandy clay in a moist and stiff condition. In addition, small localized areas of undocumented fill from previous minor grading and/or agricultural activities are likely present onsite. The undocumented fill soils were found to range from 3 to 8 feet deep.

4.3.1.2. *Topsoil (no map symbol)*

A thin veneer of topsoil was encountered throughout the site. These materials can generally be described as fine-grained, dark brown, silty sand with some clay in a very moist and loose condition. The topsoil was found to range from 1 to 4 feet deep.

4.3.1.3. *Alluvium (Qal)*

Alluvium was encountered within the drainage in the northerly portion of the site. These materials can generally be described as dark gray to dark grayish brown silty sand in a wet and loose condition to dark brown sandy clay in a very moist to wet and loose condition. Some rounded gravel and cobbles up to 2 ft. diameter were encountered in the alluvium. It is anticipated that the alluvium is limited to the narrow drainage along the north and northeasterly boundaries of the site. The depth of the alluvium within the central portion of the drainage could not be determined due to environmental constraints restricting exploration; however, it is anticipated to be on the order of 4 to 8 feet thick.

4.3.1.4. *Colluvium (Qcol)*

Colluvium was encountered in the excavations on the onsite slopes. These materials can generally be described as brown clayey sand and sandy clay in a very moist and soft condition. . The colluvium was found to range from 2 to 7 feet in thickness.

4.3.2. Bedrock Units

4.3.2.1. *Friars Formation - (Tf)*

Friars Formation was encountered at depth in the four recent large diameter borings excavated at the project site by AGS. A thin veneer of surficial soil (topsoil, colluvium, and/or alluvium) was observed to mantle the Friars Formation. As encountered, the Friars Formation generally consists interbedded claystone, siltstone, and sandstone with cobble conglomerate lenses. The upper portion of the Friars Formation exhibited evidence suggesting it has been affected by long term creep. Steeply dipping soil infilled fractures and thin randomly oriented shears and clay seams were commonly observed. These materials do not appear to be related to a large scale translational failure or deep seated landslide and lack geomorphic features common to these types of landslides. However, the presence of a deep seated landslide cannot be precluded. At the surface, the creep-affected areas exhibited a hummocky texture which is common to shallow failures and creep affected slopes. These materials are interpreted to be relatively intact blocks of the Friars Formation which have been affected by ductile deformation within the more plastic facies of the Friars Formation. In general, the creep-affected mass is moderately well indurated and well healed.

A basal shear zone was encountered between elevations 410 and 420 msl and exhibited a shallow northeasterly dip of approximately five degrees below horizontal. These shears were generally paper thin to 1/8-inch thick, composed of highly plastic clay with weakly to well-developed shear fabric (remolding), and were found to be continuous around the borehole. Below the basal shear zone, the Friars Formation generally consists of massively bedded, fine-grained sandy

siltstone in a slightly moist and hard to very hard condition. The basal shear zone is interpreted to be the controlling feature and lower boundary for the creep affected materials above. For the purposes of this report, the boring logs and geologic map and cross-sections distinguish the creep-affected Friars Formation (Tf_c) and the intact Friars Formation (Tf_i).

4.4. Geologic Structure

The project site is situated near the easterly limit of the San Diego Embayment. Primary geologic units onsite are Friars Formation and Stadium Conglomerate. The Eocene-aged Friars Formation occupies the lower two-thirds of the overall property and generally consists of massively bedded siltstone, claystone, and sandstone. In the project area it non-conformably overlies Cretaceous-aged granitoid basement rock. The Stadium Conglomerate conformably overlies Friars Formation in the steeper, upper portion of the site but is not exposed within the currently proposed development area. The Stadium Conglomerate generally consists of massively bedded cobble conglomerate and sandstone.

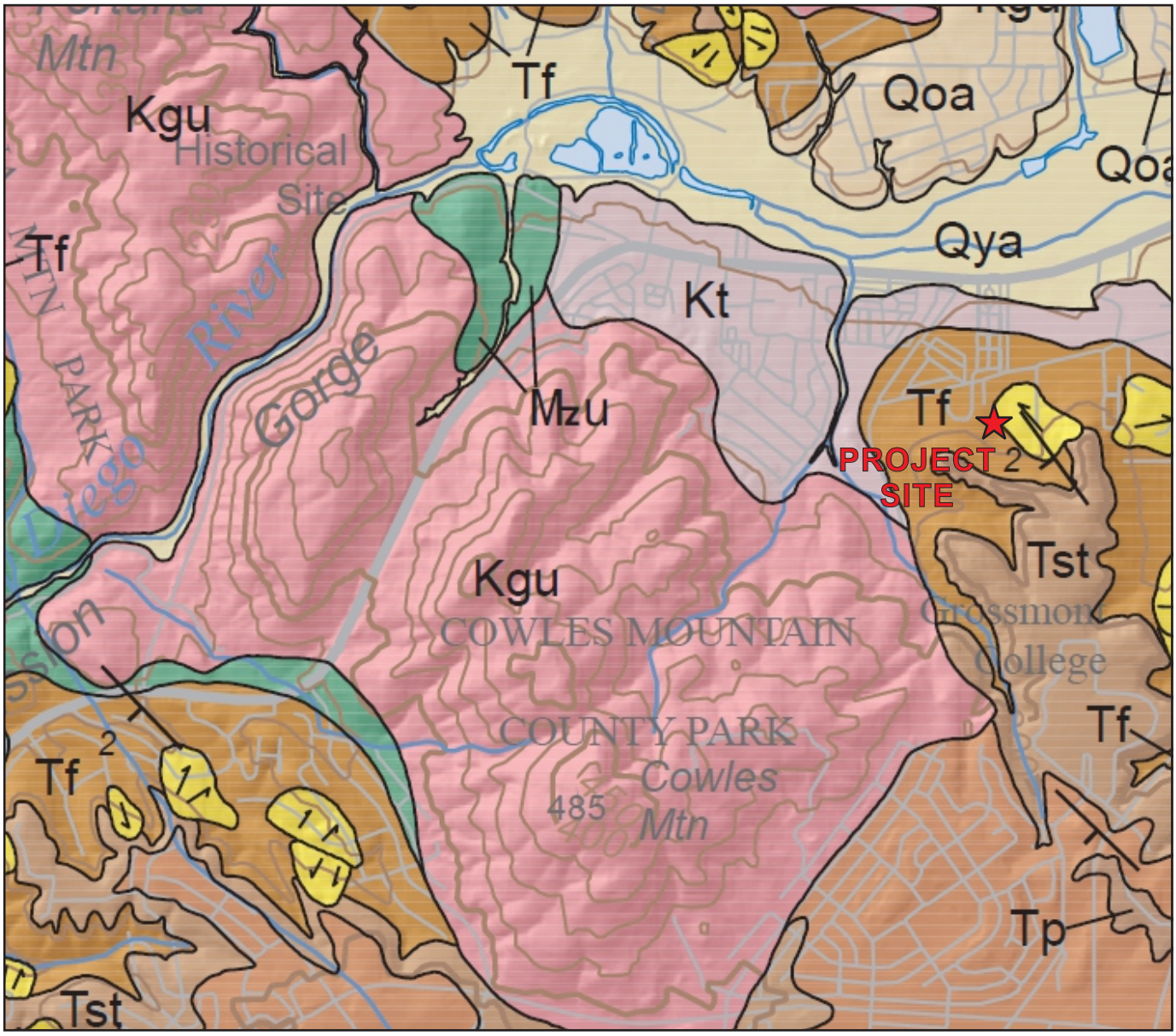
The Friars Formation was observed to be thinly to massively bedded, commonly fractured and contained several remolded clay seams indicative of 'bedding-parallel shears'. Fractures commonly exhibited polished striated surfaces and ranged from tightly spaced with random orientation to singular fractures that were steeply dipping. The basal shear zone was encountered between elevations 410 and 420 msl and exhibited a shallow northeasterly dip of approximately five degrees below horizontal. Regionally, the general dip direction is to the southwest but locally can vary between 7 degrees to the south and 7 degrees to the north. Similarly interpreted features were identified during previous geotechnical investigations for adjacent developments and possess shallow dips to both the north and south. The general dip direction identified during our investigation is out of slope and is considered unfavorable with respect to the current development plans. As such, design measures in the form of shear keys and/or buttresses will be necessary to stabilize the as-graded site and minimize the potential for future failure to acceptable risk levels. These measures are discussed in more detail in Section 6.2 of this report.

4.5. Groundwater

Groundwater was encountered in Boring BA-1 at an elevation of roughly 418 feet. Seepage was encountered at elevations of 431 feet and 420 feet in Boring BA-1, 441 feet in Boring BA-2 and 412 feet and 406 feet in Boring BA-3. It is our opinion that the groundwater encountered at depth will likely not impact the proposed site development. Long-term control of groundwater will be a key aspect in stabilizing the development. It should be noted that localized perched groundwater may develop at a later date, most likely at or near fill/bedrock contacts, due to fluctuations in precipitation, irrigation practices, or factors not evident at the time of our field explorations.

4.6. Faulting and Seismicity

The site is located in the tectonically active Southern California area, and will therefore likely experience shaking effects from earthquakes. The type and severity of seismic hazards affecting the site are to a large degree dependent upon the distance to the causative fault, the intensity of



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REGIONAL GEOLOGY MAP
TYLER STREET PROJECT
SANTEE, CALIFORNIA

P/W 1310-04

FIGURE 2

SOURCE MAP - GEOLOGIC MAP OF THE SAN DIEGO 30' X 60' QUADRANGLE, KENNEDY AND TAN 2008, SAN DIEGO COUNTY, CALIFORNIA

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the seismic event, and the underlying soil characteristics. The seismic hazard may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction or dynamic settlement. The following is a site-specific discussion of ground motion parameters, earthquake-induced landslide hazards, settlement, and liquefaction. The purpose of this analysis is to identify potential seismic hazards and propose mitigations, if necessary, to reduce the hazard to an acceptable level of risk. The following seismic hazards discussion is guided by the California Building Code (2013), CDMG (2008), and Martin and Lew (1998).

4.6.1. Surface Fault Rupture

Surface rupture is a break in the ground surface during, or as a consequence of, seismic activity. Fault rupture occurs most often along pre-existing fault traces. Based on our observation of the site and review of available geologic maps, there is no known faulting at the subject site. There are no Alquist-Priolo Earthquake Fault Zones within the site vicinity. The nearest known active fault is the Silver Strand section of the Newport-Inglewood-Rose Canyon fault zone which is approximately 11 miles southwest of the subject site. Accordingly, the potential for fault surface rupture on the subject site is considered very low to remote. This conclusion is based on literature and map review.

4.6.2. Seismicity

As noted, the site is within the tectonically active southern California area, and is approximately 11 miles from an active fault, the Silver Strand section of the Newport-Inglewood-Rose Canyon fault zone. The potential exists for strong ground motion that may affect future improvements.

At this point in time, non-critical structures (commercial, residential, and industrial) are usually designed according to the California Building Code (2013) and that of the controlling local agency. However, liquefaction/seismic slope stability analyses, critical structures, water tanks and unusual structural designs will likely require site specific ground motion input.

4.6.3. Liquefaction

Liquefaction is the phenomenon where seismic agitation of loose, saturated sands and silty sands can result in a buildup of pore pressures that, if sufficient to overcome overburden stresses, can produce a temporary quick condition. Localized, loose lenses/layers of sandy soils may be subject to liquefaction when a large, prolonged, seismic event affects the site. As the excess pore water pressure dissipates, the liquefied zones/lenses can consolidate causing settlement. Post liquefaction effects at a site can manifest in several ways and may include: 1) ground deformations; 2) loss of shear strength; 3) lateral spread; 4) dynamic settlement; and 5) flow failure.

In general, the more recent a sediment has been deposited, the more likely it is to be susceptible to liquefaction. Further, liquefaction potential is greatest in loose, poorly graded sands and silty sands with mean grain size in the range of 0.1 to 0.2 mm. Other factors that must be considered are groundwater, confining stresses, relative density,

intensity and duration of ground shaking. It is generally held that soils possessing a clay content (particle size < 0.005mm) greater than fifteen (15) to twenty (20) percent may be considered non-liquefiable (Southern California Earthquake Center, 1999).

In consideration of the clayey nature of the onsite soils and the relatively stiff/dense soils, and lack of a shallow groundwater table at the project site, the potential for seismically induced liquefaction is considered remote.

4.6.4. Dynamic Settlement

Dynamic settlement occurs in response to an earthquake event in loose sandy earth materials. This potential of dynamic settlement at the subject site is considered to be remote due to the presence of well consolidated formational materials and the absence of loose, sandy soils after the remedial grading recommended herein is completed.

4.6.5. Seismically Induced Landsliding

The project site is situated in area of known and suspected landslides, and nearby projects have encountered landslides. Creep-affected Friars Formation was encountered in our soil borings and test pits excavated onsite. The possibility of seismically induced landsliding is considered to be "Moderate to High" in the site's current condition. Remedial grading is proposed herein to mitigate the risk of seismically induced landsliding to an acceptable level.

4.6.6. Seiches and Tsunamis

A seiche is a free- or standing-wave oscillation on the surface of water in an enclosed or semi-enclosed basin. The wave can be initiated by an earthquake and can vary in height from several centimeters to a few meters. The potential for a seiche impacting the property is considered to be unlikely due to its distance from an upstream large body of water.

4.7. Non-seismic Geologic Hazards

4.7.1. Mass Wasting

As discussed in Section 4.3.1, creep-affected Friars Formation was identified during our subsurface investigation. Based on our site reconnaissance and subsurface excavations, these materials are up to 58 feet thick and located above a bedding-parallel shear at the contact with the intact Friars Formation. The creep-affected Friars Formation is not considered stable in its current state and will require remedial grading. . Most of the creep-affected Friars Formation will be removed by design cuts and typical benching and keying during grading. To reduce the potential for future movement, mitigative measures in the form of shear keys and/or buttresses will be necessary to stabilize the as-graded site and minimize the potential for future failure to acceptable levels. These measures are discussed in more detail in Section 6.2 below.

4.7.2. Rock Fall

The potential for rock fall is considered to be very low given the lack of rock outcrops within the proposed limits of the development.

4.7.3. Flooding

According to FEMA flood maps, the site is mapped in a "Low to Moderate" Risk Area. In consideration of the proposed grades the potential for flooding is low.

4.7.4. Subsidence and Ground Fissuring

Owing to the relatively intact nature of the landslide debris and the remedial grading proposed herein, the potential for subsidence and ground fissuring after site development is considered low.

5.0 GEOTECHNICAL ENGINEERING

Presented herein is a general discussion of the geotechnical properties of the various soil types and the analytic methods used in this report.

5.1. Material Properties

5.1.1. Excavation Characteristics

Based on our previous experience with similar projects near the subject site and review of the information gathered during this and previous investigations, it is AGS's opinion that the surficial soil units onsite can be readily excavated with conventional grading equipment; however, deeper cuts within the creep-affected and the intact Friars Formation potentially require moderate to heavy ripping.

5.1.2. Compressibility

The onsite materials that are highly compressible include, undocumented fill, topsoil, alluvium, and colluvium. The creep-affected Friars Formation was observed to be relatively intact and accordingly is considered slightly compressible. Although not encountered during our field exploration, in-filled grabens related to translational movements may be encountered during grading. Should loose and compressible grabens be encountered during the mass grading these materials will require removal within structural areas. Highly compressible materials will require removal from fill areas prior to placement of fill and where exposed at grade in cut areas.

5.1.3. Collapse Potential/Hydro-Consolidation

The hydro-consolidation process is a singular response to the introduction of water into collapse-prone sandy soils. Upon initial wetting, the soil structure and apparent strength are altered and a virtually immediate settlement response occurs. Due to the relatively thin veneer of loose surficial soils and the mostly intact creep-affected Friars Formation,

and the remedial grading proposed herein the risk of hydro-consolidation is considered "low" to "remote".

5.1.4. Expansion Potential

The subsurface investigation onsite encountered clayey surficial soils and fine-grained bedrock units. Based upon our subsurface investigation and experience on similar projects, the soils onsite are likely to exhibit a "low" to "high" expansion potential, although some thin beds within the bedrock may be encountered that have a "very high" expansion potential. Typical mitigation measures for expansive soils include: structural design, pre-saturation and overexcavation where the higher expansion characteristics are present. Final determination of expansion characteristics should be based on the as-graded conditions.

5.1.5. Shear Strength

Shear strength testing was conducted by AGS on "undisturbed" and remolded samples that were collected during this study (see Appendix C). Multi-cycle direct shear tests were performed to aid in determining residual shear strengths. The shear strengths recommended by AGS for design are presented in Table 5.1.5.

TABLE 5.1.5
RECOMMENDED SHEAR STRENGTHS FOR DESIGN

Material	Cohesion (psf)	Friction Angle (degrees)	Density (pcf)
Artificial Fill Compacted (afc)	200	28	125
Friars Formation – Creep affected (Tfc)	400	23	125
Basal Rupture Surface	100	8	120
Friars Formation (Tfi)	500	26	125
Stadium Conglomerate	500	35	135

5.1.6. Chemical and Resistivity Test Results

Corrosivity testing for sulfates, chlorides, etc. was not conducted as part of the scope of this investigation. Testing should be conducted during and upon completion of grading operations to evaluate the sulfate content and potential corrosivity on the onsite soils.

5.1.7. Earthwork Adjustments

The following average earthwork adjustment factors are presented for use in evaluating earthwork quantities. These numbers are considered approximate and should be refined during grading when actual conditions are better defined. Contingencies should be made to adjust the earthwork balance during grading if these numbers are adjusted.

TABLE 5.1.7 EARTHWORK ADJUSTMENTS	
Geologic Unit	**Approximate Range**
Undocumented Fill, Topsoil, Alluvium, and Colluvium	5% to 10% Shrink
Friars Formation – Creep-affected	5% to 10% Bulk
Friars Formation – Creep-affected (Grabens)	10% to 15% Shrink
Friars Formation – Intact	10% to 12% Bulk

5.1.8. Pavement Support Characteristics

Compacted fill derived from onsite soils and cuts within the Friars Formation is expected to possess "low" to "moderate" pavement support characteristics. Testing should be completed once subgrade elevations are reached for the onsite roadways. For preliminary planning purposes, AGS has used an R-Value of 20 for the preliminary design of roadway pavement sections.

5.2. Analytical Methods

5.2.1. Slope Stability Analysis

Stability analyses were performed for both static and seismic (pseudo-static) conditions using the GSTABL7 computer program. Arcuate failures were considered for fill slopes and for cut slopes exposing bedrock that was modeled to be dipping steeply, dipping into the slopes, or dipping oblique to the slope. In these cases across-bedding strengths were used for the analyzed failure surfaces in bedrock. Where the bedrock was assumed to be dipping out-of-slope or slightly steeper than the slope, wedge-type failures were assumed. The inclination of these beds was modeled in GSTABL7 to be consistent with the interpreted geologic structure in the area. The Modified Bishop method was used to analyze circular type failures and the Simplified Janbu Method was used to analyze block-type failures.

A pseudo-static analysis was used to evaluate the stability of slopes under seismic loading. A horizontal destabilizing seismic coefficient (kh) of 0.15 was selected for the site. The critical failure surface that was determined for the static analysis was also selected for the pseudo-static analysis. Pseudo-static analyses were generally not conducted where bedding angles were less than 12 degrees.

Surficial stability analyses were conducted using an infinite height slope method assuming seepage parallel to the slope surface.

5.2.2. Pavement Design

Preliminary asphalt concrete pavement sections have been designed using the recommendations and methods presented in the Caltrans Highway Design Manual.

5.2.3. Bearing Capacity and Lateral Pressure

Ultimate bearing capacity values were obtained using the graphs and formula presented in NAVFAC DM-7.1. Allowable bearing was determined by applying a factor of safety of at least 3 to the ultimate bearing capacity. Static lateral earth pressures were calculated using Rankine methods for active and passive cases.

6.0 GEOTECHNICAL CONCLUSIONS AND RECOMMENDATIONS

Based on the information presented herein, it is AGS's opinion that the proposed development of the Tyler Street Residential Development is feasible, from a geotechnical point of view, provided that the constraints discussed in this report and in future studies are addressed in the design and construction of the project. Presented below are issues identified by this study as possibly impacting site development. Recommendations to mitigate these issues and geotechnical recommendations for use in planning and design are presented in the following sections of this report.

All grading shall be accomplished under the observation and testing of the project Geotechnical Consultant in accordance with the recommendations contained herein, the current codes practiced by the City of Santee and this firm's Earthwork Specifications (Appendix E).

6.1. Site Preparation and Removals/Overexcavation

Guidelines to determine the depth of removals are presented below; however, the exact extent of the removals must be determined in the field during grading, when observation and evaluation of the greater detail afforded by those exposures can be performed by the Geotechnical Consultant. In general, removed soils will be suitable for reuse as compacted fill when free of deleterious materials and after moisture conditioning.

Removal of unsuitable soils typically should be established at a 1:1 projection to suitable materials outside the proposed engineered fills. Forecuts should be made no steeper than 1:1, except where constrained by other factors such as property lines, adverse geologic conditions, and protected structures, as discussed in Section 6.2.7, below. Flatter forecuts may be required near the existing residential structures to the north and where adverse geologic conditions are encountered. Removals should be initiated at approximately twice the distance of the anticipated removal depth, outside the engineered fills. The bottoms of all removal areas should be observed, mapped, and approved by the Geotechnical Consultant prior to fill placement. It is recommended the bottoms of removals be surveyed and documented.

6.1.1. Site Preparation

Existing vegetation, trash, debris, and other deleterious materials should be removed and wasted from the site prior to commencing removal of unsuitable soils and placement of compacted fill materials.

6.1.2. Unsuitable Soil Removals

Undocumented Fill, Topsoil, Alluvium, Colluvium, and creep-affected/highly weathered Friars Formation should be removed in areas planned to receive compacted fill intended

to support settlement-sensitive structures such as buildings, roads and underground improvements. The resulting undercuts should be replaced with engineered fill.

The estimated depths of removals are presented in Table 6.1.2 and are depicted on Plate 1. It should be noted that local variations can be expected requiring an increase in the depth of removal for unsuitable and weathered deposits. The extent of removals can best be determined in the field during grading when observation and evaluation can be performed by the Soil Engineer and/or Engineering Geologist. Removal bottoms should be established in competent formational material/bedrock. The removal bottom should be observed and mapped by the engineering geologist prior to fill placement.

TABLE 6.1.2
ESTIMATED DEPTH OF REMOVALS

Geologic Unit (map symbol)	Estimated Removal Depth(ft)*
Topsoil	1-3
Undocumented Fill (afu)	2-8
Colluvium (Qcol)	2-4
Alluvium (Qal)	2-8
Friars Formation – Creep affected (Tfc)	5-30
Friars Formation – Intact (Tfi)	1-3

*Localized areas could be deeper

6.1.3. Removals Along Grading Limits and Property Lines

Removals of unsuitable soils will be required prior to fill placement along the project grading limits. Construction of the proposed shear key, removals and earthwork is feasible without extending outside of the property and into the ephemeral stream. A 1:1 projection, from toe of slope outward to competent materials should be established, when possible. Shoring or specialized grading techniques will likely be required to complete removals at the northerly limits where existing subjacent single-family residences are located, as discussed in Section 6.2.7, below.

6.1.4. Overexcavation of Building Pads and Streets

6.1.4.1. *Cut Lot Overexcavation*

Cut lots exposing competent Friars Formation should be overexcavated such that a minimum of five (5) feet is placed below the building pad. Where geologic transitions occur and expose non-expansive beds in contact with “medium” to “highly” expansive beds at pad grade, then deeper overexcavation will be required. It is anticipated that the required overexcavation in this case will be on the order of 7 to 10 feet. Deeper overexcavation may be required depending upon building types and loads and should be evaluated by a geotechnical engineer when the structure siting and design information are established. These

should be determined during rough grading and when precise grading plans are proposed. To promote subsurface drainage so that the overexcavated lots do not trap infiltrating waters, the overexcavation bottom should be sloped towards the street or subdrainage systems at a minimum gradient of 1 percent. Deeper overexcavation may be considered for structures planned with deeper footings, swimming pools, etc. In addition, where steep cut/fill transitions are created, additional overexcavation and flattening of the transitions may be required.

6.1.4.2. *Cut/Fill Transition Lot Overexcavation*

Where design or remedial grading activities create a cut/fill transition on the lots, excavation of the cut or shallow fill portion should be performed such that at least five (5) feet of compacted fill exists over the pad. In areas where steep topography exists below the fill portion of a transition lot and/or transitions are created by remedial grading, layback of the canyon walls may be required. The undercut overexcavation should maintain a minimum one (1) percent gradient to the front of the lot. In addition, where steep cut/fill transitions are created, additional overexcavation and flattening of the transitions may be recommended. A deeper lot overexcavation is required if the layback transitions any portion of a building pad. The deeper overexcavation will be required such that the shallow fill portion of the lot is at least ⅓ the thickness of the deeper fill portion of the lot to a maximum overexcavation depth of 17 feet.

6.1.4.3. *Street Overexcavation*

Streets that are cut into Friars Formation could potentially pose excavation difficulties during utility and street installation. These materials may potentially require heavy ripping in deeper cut areas in order to get to utility excavation depth. During mass grading, where such materials are exposed, consideration should be given to undercutting the street/utility areas during mass grading to minimize this condition. The undercut should extend at least one foot below the deepest utility. The undercut zone should be replaced with compacted fill in accordance with project standards as outlined herein.

6.2. Slope Stability and Remediation

Proposed maximum slope heights to be created during grading are on the order of 45 feet or less for both cut and fill slopes.

6.2.1. Shear Key

The creep-affected bedrock overlying the basal shear zone will require stabilization. In addition, the bedrock has occasional, weak, clay-lined beds that may require stabilization in some areas. Stabilization of weak bedding planes will be accomplished through total removal and/or shear keys constructed to interrupt the weak bedding planes. Stabilization of the creep-affected bedrock overlying the basal shear zone will be accomplished by constructing a shear key extending below the basal shear zone along the

northerly and northeasterly boundary of the site. The approximate location of the shear key is shown on Plate 1 and illustrated on the cross sections on Plate 2. The bottom of the shear key in our preliminary design is approximately 60 feet wide, extending below the basal rupture surface into competent Friars Formation. As more detailed grading plans develop, the design of this shear key will be refined. Additional subsurface exploration should also be performed as discussed in Section 8.0 to better define the limits of the creep-affected Friar's Formation and basal rupture surface. The ultimate design will be based upon the final 40-scale grading plans and data developed during future studies and will depict anticipated elevations at the bottom of the shear key, drain locations and diameters, etc.

6.2.2. Cut Slopes

The highest proposed cut slope is southwesterly superjacent to Lot 14 and is approximately 45 feet at a slope ratio of 2:1 (horizontal: vertical). Cut slopes are planned in creep-affected Friars Formation and intact Friars Formation. Cut slopes will be constructed in portions of the Friars Formation exposing claystone facies. Based upon the currently available information, we anticipate that stabilization fills will be required for all cut slopes onsite. Final determination should be made in the field by the project geologist. All stabilization fills will require backdrain systems as shown on Detail 3 (Appendix E). Additional backdrains could be required in backcuts where geologic contacts daylight in the backcuts. Terrace and downdrains should be constructed on all cuts slopes in conformance to the City of Santee Grading Ordinance.

6.2.3. Fill Slopes

Fill slopes on the project are designed at 2:1 ratios (horizontal to vertical). The highest anticipated fill slope is approximately 45 feet high, located northerly subjacent to Lot 5. Fill slopes, when properly constructed with onsite materials, are expected to be grossly stable as designed. Stability calculations supporting this conclusion are presented in Appendix D (Plates D-1 and D-2). Fill slopes will be subject to surficial erosion and should be landscaped as quickly as possible.

Keys should be constructed at the toe of all fill slopes "toeing" on existing or cut grade. Fill keys should have a minimum width equal to one-half the height of ascending slope, and not less than 15 feet. Unsuitable soil removals below the toe of proposed fill slopes should extend from the catch point of the design toe outward at a minimum 1:1 projection into approved material to establish the location of the key.

Terrace and down drains should be constructed on all cuts slopes in conformance to the City of Santee Grading Ordinance.

6.2.4. Skin Cut and Skin Fill Slopes

A review of the preliminary Grading Plan did not indicate any significant design skin fill and skin cut conditions, however, skin cut or thin fill sections may be created during grading. For all such conditions, it is recommended that a backcut and keyway be

established such that a minimum fill thickness equal to one-half the remaining slope height, and not less than 15 feet, is provided. Where the design cut is insufficient to remove all unsuitable materials, overexcavation and replacement with a stabilization fill will be required, as shown on Grading Detail 6 in Appendix E.

6.2.5. Fill Over Cut Slopes

Fill over cut slopes should be constructed such that the cut portion is excavated first for geologic mapping and stability determination. If deemed stable then a "tilt-back" keyway half the remaining slope height or minimally fifteen (15) feet wide should be established. Drains will be required for this condition with the locations determined based upon exposed field conditions.

6.2.6. Surficial Stability

The surficial stability of 2:1 fill slopes, constructed in accordance with the recommendations presented herein, has been analyzed, and the analyses presented in Appendix D (Plate D-3) indicates factors-of-safety in excess of code minimums. When fill are properly constructed and maintained, satisfactory performance can be anticipated although slopes will be subject to erosion, particularly before landscaping is fully established.

6.2.7. Temporary Backcut/Forecut Stability

During grading operations, temporary backcuts/forecuts will occur due to grading logistics and during retaining wall construction. Backcuts and forecuts in favorably bedded creep-affected Friars Formation should be made no steeper than 1:1 (horizontal to vertical) to heights of up to 20 feet, and 1½:1 (horizontal: vertical) for heights greater than 20 feet. Flatter backcuts may be necessary where geologic conditions dictate, such as if unfavorably oriented discontinuities are present, and where minimum width dimensions are to be maintained. Future studies should present a more detailed evaluation of the stability of temporary cuts adjacent to existing improvements, including the forecuts needed for the stabilization shear keys below offsite adjacent properties.

In consideration of the inherent instability created by temporary construction of backcuts, it is imperative that grading schedules be coordinated to minimize the unsupported exposure time of these excavations. Once started these excavations and subsequent fill operations should be maintained to completion without intervening delays imposed by avoidable circumstances. In cases where five-day workweeks comprise a normal schedule, grading should be planned to avoid exposing at-grade or near-grade excavations through a non-work weekend. Where improvements may be affected by temporary instability, either on or offsite, further restrictions such as slot cutting, installing shear piles and/or tiebacks, extending work days, implementing weekend schedules, and/or other requirements considered critical to serving specific circumstances may be imposed.

6.2.8. Observation During Grading

All temporary slope excavations, including front, side and backcuts, and all cut slopes should be mapped to verify the geologic conditions that were modeled prior to grading.

6.3. Survey Control During Grading

Removal bottoms fill keys, stabilization fill keys, and backdrains should be surveyed prior to final observation and approval by the geotechnical engineer/engineering geologist in order to verify locations and gradients.

6.4. Subsurface Drainage

Due to the lack of well-defined drainages within the project site, canyon subdrains are not anticipated.

6.5. Seepage

Seepage, when encountered during grading, should be evaluated by the Geotechnical Consultant. In general, seepage is not anticipated to adversely affect grading. However if significant amounts of seepage is encountered, remedial measures such as horizontal drains or under drains may need to be installed.

6.6. Earthwork Considerations

6.6.1. Compaction Standards

All fills should be compacted at least 90 percent of the maximum dry density as determined by ASTM D1557. All loose and or deleterious soils should be removed to expose firm native soils or bedrock. Prior to the placement of fill, the upper 6 to 8 inches should be ripped, moisture conditioned to optimum moisture or slightly above optimum, and compacted to a minimum of 90 percent of the maximum dry density (ASTM D1557). Fill should be placed in thin (6 to 8-inch) lifts, moisture conditioned to optimum moisture or slightly above, and compacted to 90 percent of the maximum dry density (ASTM D1557) until the desired grade is achieved.

6.6.2. Benching

Where the natural slope is steeper than 5-horizontal to 1-vertical and where determined by the Geotechnical Consultant, compacted fill material shall be keyed and benched into competent materials.

6.6.3. Mixing and Moisture Control

In order to prevent layering of different soil types and/or different moisture contents, mixing and moisture control of materials will be necessary. The preparation of the earth materials through mixing and moisture control should be accomplished prior to and as part of the compaction of each fill lift. Water trucks or other water delivery means may be necessary for moisture control. Discing may be required when either excessively dry or wet materials are encountered.

6.6.4. Haul Roads

All haul roads, ramp fills, and tailing areas shall be removed prior to engineered fill placement.

6.6.5. Import Soils

The project is proposed to balance on site. If this changes the Geotechnical Consultant should be contacted.

6.6.6. Fill Slope Construction

Fill slopes may be constructed by preferably overbuilding and cutting back to the compacted core or by back-rolling and compacting the slope face. The following recommendations should be incorporated into construction of the proposed fill slopes.

Care should be taken to avoid spillage of loose materials down the face of any slopes during grading. Spill fill will require complete removal before compaction, shaping and grid rolling.

Seeding and planting of the slopes should follow as soon as practical to inhibit erosion and deterioration of the slope surfaces. Proper moisture control will enhance the long-term stability of the finish slope surface.

6.6.6.1. *Overbuilding Fill Slopes*

Fill slopes should be overfilled to an extent determined by the contractor, but not less than 2 feet measured perpendicular to the slope face, so that when trimmed back to the compacted core, the compaction of the slope face meets the minimum project requirements for compaction.

Compaction of each lift should extend out to the temporary slope face. The sloped should be back-rolled at fill intervals not exceeding 4 feet in height unless a more extensive overfilling is undertaken.

6.6.6.2. *Compacting the Slope Face*

As an alternative to overbuilding the fill slopes, the slope faces may be back-rolled with a heavy-duty loaded sheepsfoot or vibratory roller at maximum 4-foot fill height intervals. Back-rolling at more frequent intervals may be required. Compaction of each fill should extend to the face of the slope. Upon completion, the slopes should be watered, shaped, and track-walked with a D-8 bulldozer or similar equipment until the compaction of the slope face meets the minimum project requirements. Multiple passes may be required.

6.6.7. Utility Trench Excavation and Backfill

All utility trenches should be shored or laid back in accordance with applicable OSHA standards. Excavations in bedrock areas should be made in consideration of underlying

geologic structure. The geotechnical consultant should be consulted on these issues during construction.

Mainline and lateral utility trench backfill should be compacted to at least 90 percent of maximum dry density as determined by ASTM D 1557. Onsite soils will not be suitable for use as bedding material but will be suitable for use in backfill, provided oversized materials are removed. No surcharge loads should be imposed above excavations. This includes spoil piles, lumber, concrete trucks or other construction materials and equipment. Drainage above excavations should be directed away from the banks. Care should be taken to avoid saturation of the soils.

Compaction should be accomplished by mechanical means. Jetting of native soils will not be acceptable.

To reduce moisture penetration beneath the slab-on-grade areas, shallow utility trenches should be backfilled with lean concrete or concrete slurry where they intercept the foundation perimeter, or such excavations can be backfilled with native soils, moisture-conditioned to over optimum, and compacted to a minimum of 90 percent relative compaction.

7.0 DESIGN RECOMMENDATIONS

From a geotechnical perspective, the proposed development is feasible provided the following recommendations are incorporated into the design and construction. Preliminary design recommendations are presented herein and are based on some of the general soils conditions encountered during the recent investigation. As such, recommendations provided herein are considered preliminary and subject to change based on the results of additional observation and testing that will occur during grading operations. Final design recommendations should be provided in a final grading report.

7.1. Foundation Design

Due to the presence of potentially expansive soils and potential for some of the slightly compressible Creep-affected Friars Formation to be left-in-place, it is recommended that the proposed residential structures be supported on post-tensioned slab/foundation systems. Ancillary improvements may be supported on conventionally reinforced foundations. The design of foundation systems should be based on as-graded conditions as determined after grading completion. The following values may be used in preliminary foundation design:

Allowable Bearing: 2000 psf.

Lateral Bearing: 250 psf. per foot of depth to a maximum of 2000 psf. for level conditions. Reduced values may be appropriate for descending slope conditions.

Sliding Coefficient: 0.30

The above values may be increased as allowed by Code to resist transient loads such as wind or seismic. Building code and structural design considerations may govern. Depth and reinforcement requirements and should be evaluated by a qualified engineer.

7.1.1. Conventional Slab Recommendations

The expansion potential is anticipated to range from "Low to High". Based on information supplied by the CBC-2013 conventional foundation systems should be designed in accordance with Section 7.1 and Table 7.1.1.

TABLE 7.1.1
CONVENTIONALLY REINFORCED FOUNDATION DESIGN RECOMMENDATIONS

Expansion Potential	Low to Medium	High
Footing Depth Below Lowest Adjacent Finish Grade	18 inches	24 inches
Footing Width	12 inches	15 inches
Footing Reinforcement		
One-Story	No. 4 rebar, two (2) on top and two (2) on bottom or No. 5 rebar one (1) on top and one (1) on bottom	No. 5 rebar, two (2) on top and two (2) on bottom
Two-Story	No. 4 rebar, two (2) on top and two (2) on bottom or No. 5 rebar one (1) on top and one (1) on bottom	No. 5 rebar, two (2) on top and two (2) on bottom
Slab Thickness	4 inches (actual)	4 inches (actual)
Slab Reinforcement	No. 3 rebar spaced 15 inches on center, each way	No. 3 rebar spaced 12 inches on center, each way
Slab Subgrade Moisture	Minimum of 120% of optimum moisture 24 hours prior to placing concrete.	Minimum of 130% of optimum moisture 48 hours prior to placing concrete.

Footing Embedment Next to Swales and Slopes

If exterior footings adjacent to drainage swales are to exist within five (5) feet horizontally of the swale, the footing should be embedded sufficiently to assure embedment below the swale bottom is maintained. Footings adjacent to slopes should be embedded such that a least seven (7) feet are provided horizontally from edge of the footing to the face of the slope.

Garages

A grade beam reinforced continuously with the garage footings shall be constructed across the garage entrance, tying together the ends of the perimeter footings and between individual spread footings. This grade beam should be embedded at the same depth as the adjacent perimeter footings. A thickened slab, separated by a cold joint from the garage beam, should be provided at the garage entrance. Minimum dimensions of the thickened edge shall be six (6) inches deep. Footing depth, width and reinforcement should be the same as the structure. Slab thickness, reinforcement and underslab treatment should be the same as the structure.

7.1.2. Post-Tensioned Slab Foundation System Design Recommendations

We recommend that Post-Tensioned slab foundation systems be considered for all residential foundations. Minimally, AGS recommends that Post-Tensioned slabs should be considered for lots that exhibit "Medium" to "High" expansion conditions. Final foundation design should be provided by the project geotechnical engineer based upon the as-graded conditions.

Preliminary geotechnical engineering design and construction parameters for post-tensioned slab foundations are foundation systems should be designed in accordance with Section 7.1 and Table 7.1.2.

TABLE 7.1.2
POST TENSIONED DESIGN PARAMETERS

Expansion Potential	Lot Category	Center Lift		Edge Lift	
		Em (ft)	Ym (in)	Em (ft)	Ym (in)
Very Low to Low	I	9	0.23	5.4	0.54
Medium	II	9	0.38	4.6	0.9
High	III	7.5	0.51	3.9	1.26

PRESATURATION

Very Low to Low-
Minimum of 100 percent of optimum moisture prior to placing concrete to a depth of 12 inches

Medium Expansion-
Minimum of 120 percent of optimum moisture 24 hours prior to placing concrete.

High Expansion-
Minimum of 130 percent of optimum moisture 48 hours prior to placing concrete.

- Post-tensioned slabs should incorporate a perimeter-thickened edge to reduce the potential for moisture infiltration, seasonal moisture fluctuation and associated differential movement around the slab perimeter. Design and construction of the post-tensioned foundations should be undertaken by firms experienced in the field. It is the responsibility of the foundation design engineer to select the design methodology and properly design the foundation system for the onsite soils conditions. The slab designer should provide deflection potential to the project architect/structural engineer for incorporation into the design of the structure.
- The project foundation design engineer should use the Post-Tensioning Institute (PTI) foundation design procedures as described in CBC (2013), based upon appropriate soil design parameters relating to edge moisture variation and differential swell provided by the geotechnical consultant at the completion of rough grading operations.
- A vapor/moisture barrier is recommended below all moisture sensitive areas.

7.1.3. Total and Differential Settlement

In addition to the potential effects of expansive soils, the proposed residential structures should be designed in anticipation of total and differential settlements. The following lot categories are presented based upon anticipated settlement, fill thickness and expansion potential.

Category I

"Very low to low" expansion potential and fill depths less than 50 feet. Minimum fill depth meets h/3 criteria where h is the maximum fill thickness.

Total = 3/4 inch

Differential = 3/8 inch in 20 feet

Category II

"Medium" expansion potential and/or fill depths less than 50 feet. Minimum fill depth meets h/5 criteria where h is the maximum fill thickness.

Total = 3/4 inch

Differential = 1/2 inch in 20 feet

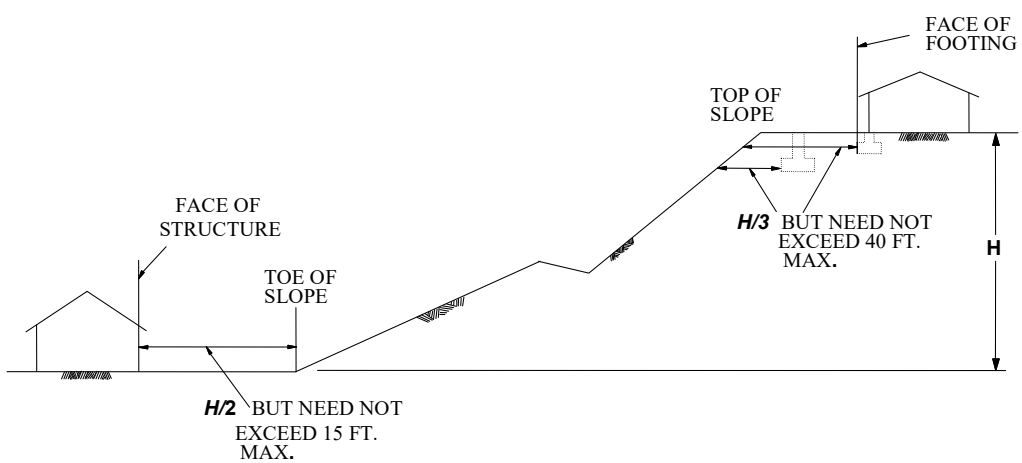
7.1.4. Deepened Footings and Setbacks

Improvements constructed in proximity to natural slopes or properly constructed, manufactured slopes can, over a period of time, be affected by natural processes including gravity forces, weathering of surficial soils and long-term (secondary) settlement. Most building codes, including the California Building Code, require that structures be set back or footings deepened where subject to the influence of these natural processes.

For the subject site, where foundations for residential structures are to exist in proximity to slopes, the footings should be embedded to satisfy the requirements presented in the following figure.

FIGURE 7.1.4

Setback Dimensions (CBC, 2013)



7.1.5. Moisture and Vapor Barrier

A moisture and vapor retarding system should be placed below the slabs-on-grade in portions of the structure considered to be moisture sensitive. The retarder should be of suitable composition, thickness, strength and low permeance to effectively prevent the migration of water and reduce the transmission of water vapor to acceptable levels. Historically, a 10-mil plastic membrane, such as *Visqueen*, placed between one to four inches of clean sand, has been used for this purpose. More recently Stego® Wrap or similar underlayments have been used to lower permeance to effectively prevent the migration of water and reduce the transmission of water vapor to acceptable levels. The use of this system or other systems, materials or techniques can be considered, at the discretion of the designer, provided the system reduces the vapor transmission rates to acceptable levels.

7.2. Retaining Wall Design

The foundations for retaining walls of appurtenant structures structurally separated from the building structure may bear on properly compacted fill. The foundations may be designed in accordance with the recommendations provided in Section 7.1.1, Conventionally Reinforced Foundation Design Parameters. When calculating the lateral resistance, the upper 12 inches of soil cover should be ignored in areas that are not covered with hardscape. Retaining wall footings should be designed to resist the lateral forces by passive soil resistance and/or base friction as recommended for foundation lateral resistance.

Retaining walls should be designed to resist earth pressures presented in the following table. These values assume that the retaining walls will be backfilled with select materials as shown in Detail RTW-A. The type of backfill ("select")) should be specified by the wall designer and shown on the plans. Retaining walls should be designed to resist additional loads such as construction loads, temporary loads, and other surcharges as evaluated by the structural engineer.

TABLE 7. 2
RETAINING WALL EARTH PRESSURES

"Select" Backfill Materials (γ=125pcf, phi=30°, EI$\leq$50)

	Level Backfill		Sloping (2:1) Backfill	
	Rankine Coefficients	**Equivalent Fluid Pressure (psf / lineal foot)**	**Rankine Coefficients**	**Equivalent Fluid Pressure (psf / lineal foot)**
Active Pressure	$K_a = 0.33$	42	$K_a = 0.54$	67
Passive Pressure	$K_p = 3.00$	375	$K_p = 1.49$	186
At Rest Pressure	$K_o = 0.50$	63	$K_o = 0.72$	90

In addition to the above static pressures, unrestrained retaining walls located should be designed to resist seismic loading as required by the 2013 CBC. The seismic load can be modeled as a

thrust load applied at a point 0.6H above the base of the wall, where H is equal to the height of the wall. This seismic load (in pounds per lineal foot of wall) is represented by the following equation:

$$Pe = \frac{3}{8} * \gamma * H^2 * k_h$$

Where:

Pe = Seismic thrust load

H = Height of the wall (feet)

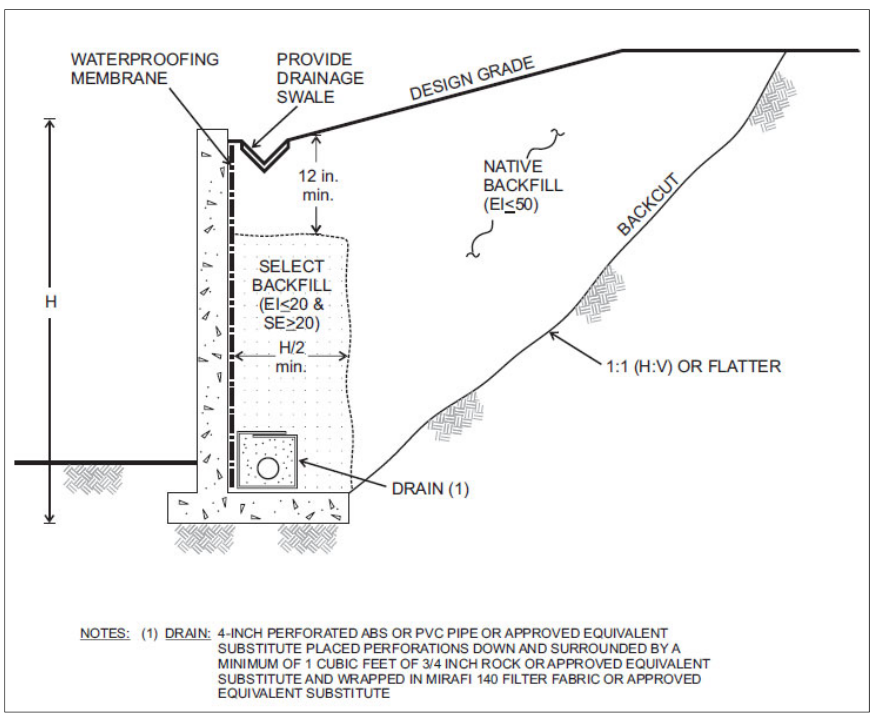
γ = soil density = 125 pounds per cubic foot (pcf)

k_h = seismic pseudostatic coefficient = 0.5 * peak horizontal ground acceleration / g

The peak horizontal ground accelerations are provided in Section 7.3. Walls should be designed to resist the combined effects of static pressures and the above seismic thrust load.

Retaining walls should be provided with a drainage system adequate to prevent the buildup of hydrostatic forces as shown in Details RTW-A. Otherwise, the retaining walls should be designed to resist hydrostatic forces. Proper drainage devices should be installed along the top of the wall backfill and should be properly sloped to prevent surface water ponding adjacent to the wall. In addition to the wall drainage system, for building perimeter walls extending below the finished grade, the wall should be waterproofed and/or damp-proofed to effectively seal the wall from moisture infiltration through the wall section to the interior wall face.

Detail RTW-A



The wall should be backfilled with granular soils placed in loose lifts no greater than 8-inches thick, at or near optimum moisture content, and mechanically compacted to a minimum 90 percent of the maximum dry density as determined by ASTM D1557. Flooding or jetting of backfill materials generally do not result in the required degree and uniformity of compaction and, therefore, is not recommended. No backfill should be placed against concrete until minimum design strengths are achieved as verified by compression tests of cylinders. The geotechnical consultant should observe the retaining wall footings, back drain installation, and be present during placement of the wall backfill to confirm that the walls are properly backfilled and compacted.

7.3. Seismic Design

The following seismic design parameters are presented to be code compliant to the California Building Code (2013). The subject lot has been identified to be Site Class "D" in accordance with CBC, 2013, Section 1613.3.2 and ASCE 7, Chapter 20. The lot is located at Latitude 32.827°N, and Longitude 117.010°W. Utilizing this information, the United States Geological Survey (USGS) web tool (http://earthquake.usgs.gov/hazards/designmaps/) and ASCE 7 criterion, the mapped seismic acceleration parameters S_S, for 0.2 seconds and S_1, for 1.0 second period (CBC, 2013, 1613.3.1) for Risk-Targeted Maximum Considered Earthquake (MCE_R) can be determined. The mapped acceleration parameters are provided for Site Class "B". Adjustments for other Site Classes are made, as needed, by utilizing Site Coefficients F_a and F_v for determination of MCE_R spectral response acceleration parameters S_{MS} for short periods and S_{M1} for 1.0 second period (CBC, 2013 1613.3.3). Five-percent damped design spectral response acceleration parameters S_{DS} for short periods and S_{D1} for 1.0 second period can be determined from the equations in CBC, 2013, Section 1613.3.4.

TABLE 7.3
SEISMIC DESIGN CRITERIA

Mapped Spectral Acceleration (0.2 sec Period), S_S	0.873g
Mapped Spectral Acceleration (1.0 sec Period), S_1	0.339g
Site Coefficient, F_a	1.151
Site Coefficient, F_v	1.721
MCE Spectral Response Acceleration (0.2 sec Period), SM_S	1.005g
MCE Spectral Response Acceleration (1.0 sec Period), SM_1	0.584g
Design Spectral Response Acceleration (0.2 sec Period), SD_S	0.670g
Design Spectral Response Acceleration (1.0 sec Period), SD_1	0.389g

Using the United States Geological Survey (USGS) web-based ground motion calculator, the site class modified PGA_M (F_{PGA}*PGA) was determined to be 0.387g. This value does not include near-source factors that may be applicable to the design of structures on site.

7.4. Civil Design Recommendations

7.4.1. Drainage

Final site grading should assure positive drainage away from structures. Planter areas should be provided with area drains to transmit irrigation and rain water away from structures. The use of gutters and down spouts to carry roof drainage well away from structures is recommended. Raised planters should be provided with a positive means to remove water through the face of the containment wall.

All water should be diverted along a relatively impervious channel away from the top of the slope as to not impact the stability of the slope nor erode the slope face.

7.4.2. Water Quality Basins

Based on the results of our subsurface exploration and experience with similar projects, infiltration is not recommended. Infiltration of any appreciable rate or volume is not practical due to clayey soils onsite, which when in-situ or used for engineered fill will possess infiltration rates on the order of 0.0 to 0.10 in/hr. Based on our review of NRCS moil maps, the site is mapped as "Diablo Clay – 15 to 30% slopes (DaE)", which is a USDA hydrologic soil group "D" soil. Type "D" soils generally possess infiltration rates on the order of 0 to 0.5in/hr.

Furthermore, infiltration could substantially increase the risk of geotechnical hazards, such as negatively affect the long term stability of onsite slopes, result in water in utility trenches, etc. Accordingly, we recommend that basins be lined with an impermeable liner.

7.4.3. Pavement Design

Final pavement design should be made based upon sampling and testing of post-grading conditions. For preliminary design and estimating purposes the pavement structural sections presented in Table 7.4.3 can be used for the range of likely traffic indices. The structural sections are based upon an assumed R-Value of 20.

TABLE 7.4.3
PRELIMINARY ASPHALT CONCRETE PAVEMENT SECTIONS

Traffic Index	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
5.0	3	8
5.5	3	9
6.0	4	9

Pavement subgrade soils should be at or near optimum moisture content and the upper one foot should be compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM D1557. Aggregate base should be compacted to a minimum of

95 percent of the maximum dry density as determined by ASTM D1557 and should conform with the specifications listed in Section 26 of the *Standard Specifications for the State of California Department of Transportation* (Caltrans) or Section 200-2 of the *Standard Specifications for Public Works Construction* (Green Book). The asphalt concrete should conform to Section 26 of the Caltrans *Standard Specifications* or Section 203-6 of the Green Book.

8.0 FUTURE STUDY NEEDS

This report represents a Tentative Map level review of the Tyler Street project. Additional subsurface exploration will be required to further define the distribution of geologic units onsite and to aid in the design of shear keys, buttresses and other mitigative geotechnical site conditions. Additional data should be obtained to evaluate the limits of the creep-affected Friars Formation and evaluate the presence of grabens and infilled features. Additional data should be obtained about the depth and geometry of the basal shear zone, which will be needed to further evaluate the long-term stability of the site and temporary stability of backcuts and forecuts necessary for removals and to construct shear keys and buttresses. Future geotechnical reviews of grading plans and foundation plans will also be necessary.

These plans should be forwarded to the project geotechnical engineer/geologist for evaluation and comment, as necessary.

9.0 CLOSURE

9.1. Geotechnical Review

As is the case in any grading project, multiple working hypotheses are established utilizing the available data, and the most probable model is used for the analysis. Information collected during the grading and construction operations is intended to evaluate the hypotheses, and some of the assumptions summarized herein may need to be changed as more information becomes available. Some modification of the grading and construction recommendations may become necessary, should the conditions encountered in the field differ significantly than those hypothesized to exist.

AGS should review the pertinent plans and sections of the project specifications, to evaluate conformance with the intent of the recommendations contained in this report.

If the project description or final design varies from that described in this report, AGS must be consulted regarding the applicability of, and the necessity for, any revisions to the recommendations presented herein. AGS accepts no liability for any use of its recommendations if the project description or final design varies and AGS is not consulted regarding the changes.

9.2. Limitations

This report is based on the project as described and the information obtained from the test pits and the borings at the locations indicated on the plan. The findings are based on the review of the field and laboratory data combined with an interpolation and extrapolation of conditions between and beyond the exploratory excavations. The results reflect an interpretation of the direct evidence obtained. Services performed by AGS have been conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing

in the same locality under similar conditions. No other representation, either expressed or implied, and no warranty or guarantee is included or intended.

The recommendations presented in this report are based on the assumption that an appropriate level of field review will be provided by geotechnical engineers and engineering geologists who are familiar with the design and site geologic conditions. That field review shall be sufficient to confirm that geotechnical and geologic conditions exposed during grading are consistent with the geologic representations and corresponding recommendations presented in this report. AGS should be notified of any pertinent changes in the project plans or if subsurface conditions are found to vary from those described herein. Such changes or variations may require a re-evaluation of the recommendations contained in this report.

The data, opinions, and recommendations of this report are applicable to the specific design of this project as discussed in this report. They have no applicability to any other project or to any other location, and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent of AGS.

AGS has no responsibility for construction means, methods, techniques, sequences, or procedures, or for safety precautions or programs in connection with the construction, for the acts or omissions of the CONTRACTOR, or any other person performing any of the construction, or for the failure of any of them to carry out the construction in accordance with the final design drawings and specifications.

Appendix A

References

References

American Concrete Institute, 2002, Building Code Requirements for Structural Concrete (ACI318M-02) and Commentary (ACI 318RM-02), ACI International, Farmington Hills, Michigan.

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---. Final As-Graded Geotechnical Report, Padre Hills Residential Development, Project No. 4018, May 16, 1995.

---. Geotechnical Investigation, Proposed Prospect Hills II Residential Development, Project No. 6002, dated March 31, 1996.

---. Response to Third Party Review, Project No. 6002, dated February 14, 1997.

---. Final As-Graded Geotechnical Report, Prospect Hills II, Project No. 7051, dated October 30, 1998.

Appendix B

Subsurface Investigation

BORING NUMBER BA-1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Tyler Development LLC
PROJECT NAME Tyler Street
PROJECT NUMBER 1310-04
PROJECT LOCATION Santee, CA
DATE STARTED 2/8/16 **COMPLETED** 2/8/16
GROUND ELEVATION 478 ft **HOLE SIZE** 30
DRILLING CONTRACTOR Dave's Drilling
GROUND WATER LEVELS:
DRILLING METHOD Bucket Auger
AT TIME OF DRILLING ---
LOGGED BY PJD **CHECKED BY** PJD
AT END OF DRILLING ---
NOTES 0-27' 4500lbs; 27-51' 3500lbs, 51-82' 2500lbs, >82' 1000lbs
AFTER DRILLING 60.00 ft / Elev 418.00 ft

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	FINES CONTENT (%)	OTHER TESTS
	0		SC	**Topsoil** SANDY CLAY to CLAYEY SAND, fine to medium grained sand, brown, moist, loose/soft.							
475			CL	**Colluvium (Qcol)** SANDY CLAY to CLAYEY SAND, fine to medium grained sand, yellowish brown to grayish brown, moist, stiff/moderately dense.							
	5			**Friars Formation - Creep Affected (Tfc)** SANDSTONE, fine to medium grained sand with some clay, off white to very pale yellowish brown, slightly moist, soft to moderately hard; near vertical clay soil infill/inclusions.	MC	4					
470				@7.25 ft. Clay seam, continuous, weakly remolded 1/8" to 1/2" thick. N66°W/12-14°NE							
	10			@9 ft. Rounded pebble lense with discontinuous clay seam. N18°E/3°NW	MC	10					
465				@11 ft. Cobbly, rounded Poway clasts to 6" diameter in soft SANDSTONE matrix, moist.							
	15			@14.5 ft. Irregular contact with pebble conglomerate in soft SANDSTONE matrix.							
460				@17 ft. Cobble conglomerate, soft; carbonate nodules to 2" diameter.	BU						
	20			@21 ft. CLAYEY SANDSTONE lens, soft to moderately hard; micaceous. N10°E/4-10°NW							
455				@23 ft. Becomes wet, soft carbonate zone. @23.5 ft. Becomes soft.							
	25			@25 ft. Cobble conglomerate in SANDSTONE matrix, wet, soft.							
450				@26.5 ft. Irregular contact; minor clay development; discontinuous, 6" thick highly weathered zone beneath abundant iron oxide. N65°W/3°NE							
	30			CLAYSTONE, olive brown to medium brown, slightly moist, stiff; tightly fractured; polished surfaces. @28 ft. Soft. @30 ft. Thin sandy lens with claystone clasts to 1/2", random angular rock fragments. @31-32 ft. Clay seam, olive green, soft, weakly remolded, continuous, paper thin to 1/8". N70°E/26°NW	MC	5					
445											
	35										

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ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Tyler Development LLC **PROJECT NAME** Tyler Street

PROJECT NUMBER 1310-04 **PROJECT LOCATION** Santee, CA

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	FINES CONTENT (%)	OTHER TESTS
	35										
440				@37-39.5 ft. Shear zone, brown to olive, soft, weakly remolded, continuous, paper thin. N35°E/30°NW							
	40			@39.5-41 ft. Highly fractured zone.							
				@40 ft. CLAYSTONE, brown to olive greenish gray, slightly moist, very stiff; plastic, polished surfaces.	MC	5					
435				@41 ft. Fracture, discontinuous, steeply dipping, polished surfaces with striations. N80°E/50°NW							
	45			@44 ft. CLAYEY SILTSTONE with fine sand to CLAYEY fine SANDSTONE, dark olive gray, hard; polished surfaces.							
430				@46.5 ft. Steep fracture, seepage, discontinuous. N50°E/15-30°NW							
	50				MC	7					
425											
	55										
420				@58 ft. Basal Shear, paper thin to 1/8" thick, continuous, remolded; iron oxide staning; seepage. N65°W/6°NE							
	60			**Friars Formation - Intact (Tfi)** SANDY SILTSTONE to SILTY SANDSTONE, fine grained sand, dark bluish gray, very hard. @60 ft. Groundwater encountered.							
415											
	65										

TD = 65 ft.
Groundwater encountered at 60 ft.

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BORING NUMBER BA-2

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Tyler Development LLC
PROJECT NAME Tyler Street
PROJECT NUMBER 1310-04
PROJECT LOCATION Santee, CA
DATE STARTED 2/9/16 **COMPLETED** 2/9/16
GROUND ELEVATION 468 ft **HOLE SIZE** 30
DRILLING CONTRACTOR Dave's Drilling
GROUND WATER LEVELS:
DRILLING METHOD Bucket Auger
AT TIME OF DRILLING ---
LOGGED BY FE **CHECKED BY** PJD
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	FINES CONTENT (%)	OTHER TESTS
	0		SC	**Topsoil** CLAYEY SAND, dark brown, very moist, loose; some rounded gravel.							
465											
	5			**Friars Formation - Intact (Tfi)** Highly weathered, SILTSTONE and CLAYEY SANDSTONE, brownish gray, slightly moist, soft to moderately hard.	MC	5					
460					BU						
	10				MC	5					
				@11 ft. Some CLAYSTONE clasts and abundant rounded Poway clasts to 6" diameter.							
455											
	15										
450											
	20			@19 ft. Cobbles to 6" diameter.							
				@21 ft. Rounded gravel and cobbles to 6" diameter in a CLAYEY SANDSTONE matrix, abundant randomly oriented carbonate nodules.							
445											
	25			@24 ft. Very moist. @25 ft. Clay lined cobbles.							
440				CLAYSTONE, olive and pale red, moist, moderately soft; tightly fractured with well defined striations. Groundwater seepage along steeply dipping fractures. @28 ft. Fracture, N10°E/32°NW							
	30				MC	10					
435				@32 ft. Grades to CLAYEY SANDSTONE, grayish brown, moist, moderately soft. @33 ft. CLAYSTONE, pale red, moist, moderately soft, fractured, surfaces with polished striations, minor							
	35										

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ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Tyler Development LLC **PROJECT NAME** Tyler Street

PROJECT NUMBER 1310-04 **PROJECT LOCATION** Santee, CA

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	FINES CONTENT (%)	OTHER TESTS
	35			manganese oxide development.							
430											
	40				MC	6					
				@41 ft. Some white carbonate nodules to 1" diameter.							
425											
	45			@44 ft. Clay seam, discontinuous. N-S/56°W							
420				@46 ft. CLAYEY SILTSTONE, light gray to gray, moist, moderately hard; trace white carbonate nodules to 1/8" diameter.							
	50			@50 ft. SILTY CLAYSTONE, pale red with olive mottling, moderately hard to soft.	MC	8					
415				@52 ft. Yellowish brown and olive, trace manganese oxide on polished surfaces.							
	55			@54 ft. Clay seam, gray, very moist, continuous, remolded, highly plastic. N20°W/65°NE							
				SILTSTONE, bluish gray, slightly moist, very hard, massive.							
410											
	60			@60 ft. Tightly fractured, polished surfaces with striations, weak carbonate cementation.	MC	15					
405											
	65			TD = 65 ft. Seepage at 27 ft.							

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BORING NUMBER BA-3

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Tyler Development LLC
PROJECT NAME Tyler Street
PROJECT NUMBER 1310-04
PROJECT LOCATION Santee, CA
DATE STARTED 2/9/16 **COMPLETED** 2/10/16
GROUND ELEVATION 440 ft **HOLE SIZE** 30
DRILLING CONTRACTOR Dave's Drilling
GROUND WATER LEVELS:
DRILLING METHOD Bucket Auger
AT TIME OF DRILLING ---
LOGGED BY FE **CHECKED BY** PJD
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	FINES CONTENT (%)	OTHER TESTS
440	0			**Artificial Fill - Undocumented (afu)** Rounded GRAVEL and COBBLES to 4" diameter in a SANDY CLAY matrix, brown, moist, soft.							
435	5		CL	**Alluvium (Qal)** SANDY CLAY, dark grayish brown, moist, stiff; some cobbles to 3" diameter.							
430	10			**Friars Formation - Creep Affected (Tfc)** CLAY, pale red to olive, moist, stiff.							
425	15			@13 ft. Abundant carbonate clasts to 5" diameter.							
420	20										
415	25										
410	30			@28ft. Undulating contact/weakly developed shear zone, brecciated; minor seepage. SILTSTONE, gray to light gray, moist, tightly fractured, well cemented. @30 ft. Some pale red CLAYSTONE blocks incorporated into SILTSTONE; well healed.							
405	35			@34 ft. Basal Shear, N59°E/20°NW. Olive with iron oxide staining, wet, remolded, continuous.							

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ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Tyler Development LLC **PROJECT NAME** Tyler Street

PROJECT NUMBER 1310-04 **PROJECT LOCATION** Santee, CA

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	FINES CONTENT (%)	OTHER TESTS
405	35										
400	40			**Friars Formation - Intact (Tfi)** SANDY SILTSTONE, gray to bluish gray, hard, massive.							

TD = 40 ft.
Seepage at 28 ft. and 34 ft.

AGS BORING LOG V3 9.30.2014 - GINT STD US LAB.GDT - 4/28/16 15:31 - C:\USERS\NICK\DESKTOP\PHILLIP\13\1310-04 TYLER STREET\1310-04 BORING LOGS.GPJ

BORING NUMBER BA-4

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Tyler Development LLC
PROJECT NAME Tyler Street
PROJECT NUMBER 1310-04
PROJECT LOCATION Santee, CA
DATE STARTED 2/10/16 **COMPLETED** 2/10/16
GROUND ELEVATION 535 ft **HOLE SIZE** 30
DRILLING CONTRACTOR Dave's Drilling
GROUND WATER LEVELS:
DRILLING METHOD Bucket Auger
AT TIME OF DRILLING ---
LOGGED BY FE **CHECKED BY** PJD
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	FINES CONTENT (%)	OTHER TESTS
535	0			**Artificial Fill - Undocumented (afu)** CLAYEY SAND, fine grained, dark brown, very moist, loose.							
530	5			**Friars Formation - Creep Affected (Tfc)** SANDY CLAY, fine grained sand, brown, moist, stiff; some rounded volcanic clasts to 1.5" diameter.							
525	10			@6 ft. CLAYEY SAND, light yellowish brown, moist, loose. @8 ft. Abundant soil infilling and thin spider fracturing throughout. @9 ft. Discontinuous remnant bedding N80°E/28°SE, grading down CLAYEY SANDSTONE, fine grained, pale yellow, moist, dense.							
520	15			Angular SILTSTONE clasts in a CLAYEY SILT matrix, gray, moist, soft; discontinuous 1/16" thick clay seam. @15 ft. Contact, moist. N20°E/10°NW SILTY CLAYSTONE, olive to strong brown, hard; some very fine steeply dipping carbonate lined fractures.							
515	20			@18 ft. Grades down to CLAYEY SANDSTONE, light gray with some pale red, slightly moist to moist, moderately hard, massive; some thin very steeply dipping irregular fractures lined with manganese oxide.							
510	25			@23 ft. SILTY CLAYSTONE bed, 2" thick, poorly defined, pale yellow with abundant manganese oxide.							
505	30										
500	35			@32 ft. CLAYEY SANDSTONE, light gray, moist, moderately hard; spheroidal carbonate nodules to 34ft.							

(Continued Next Page)

AGS BORING LOG V3 9.30.2014 - GINT STD US LAB.GDT - 4/28/16 15:31 - C:\USERS\NICK\DESKTOP\PHILLIP\13\1310-04 TYLER STREET\1310-04 BORING LOGS.GPJ

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Tyler Development LLC **PROJECT NAME** Tyler Street

PROJECT NUMBER 1310-04 **PROJECT LOCATION** Santee, CA

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	FINES CONTENT (%)	OTHER TESTS
500	35										
				@36.5 ft. Contact, flat-lying to slightly undulatory, SILTY CLAYSTONE, dark olive to dark gray, slightly moist, fractured, polished surfaces.							
495	40										
				@40 ft. Mottled reddish brown and olive, no visible fractures.							
490	45										
				@45 ft. Clay Seam: 2-2.5" thick, olive to reddish brown, wet, plastic. N40°W/2°NE	GB						
				Friars Formation - Intact (Tfi) SILTSTONE, olive, slightly moist, hard.							
				@48 ft. Light gray.							
485	50										
				@50 ft. Grades to a SANDY SILTSTONE, fine grained sand, light gray, moist hard, massive.							
480	55										
				@58 ft. Thin gravel lens, rounded volcanic clasts to 3/4" diameter.							
475	60										
				@60 ft. CLAYEY SANDSTONE, fine grained, light gray, slightly moist, hard, massive.							
470	65										
465	70										

TD = 70 ft.
No Groundwater.

AGS BORING LOG V3 9.30.2014 - GINT STD US LAB.GDT - 4/28/16 15:31 - C:\USERS\NICK\DESKTOP\PHILLIP\13\1310-04 TYLER STREET\1310-04 BORING LOGS.GPJ

Project Tyler Street
Date Excavated 1/21/2016
Logged by FE
Equipment Case Rubber Tire Backhoe

LOG OF TEST PITS

Test Pit No.	Depth (ft.)	USCS	Description
T-1	0.0 – 5.0	SM	**Alluvium (Qal)** SILTY SAND, dark gray to dark brownish gray, very moist to wet, loose; abundant rounded cobbles and boulders to 18" diameter. @4 ft. Some seepage. @4.5 ft. Quartzite boulder, 2 ft. diameter.
	5.0 – 6.0		**Friars Formation – Creep Affected (Tfc)** Clay, mottled gray and yellowish brown, very moist; some pebbles and cobble, highly weathered. @5.5 ft. pebbles and cobbles in a CLAYEY SAND matrix, hard. @6 ft. Cemented, very hard.
			TD = 6 ft. (Refusal) Seepage at 4 ft.

Test Pit No.	Depth (ft.)	USCS	Description
T-2	0.0 – 3.5	SM	**Alluvium (Qal)** SILTY SAND with some CLAY, fine grained, dark brownish gray, very moist, loose.
		SC	@2 ft. Rounded volcanic cobbles and boulders to 24" diameter in a CLAYEY SAND matrix, dark brownish gray, very moist, loose.
	3.5 – 7.0		**Friars Formation – Creep Affected (Tfc)** CLAY, light gray, very moist; trace of rounded volcanic cobbles; moderately weathered. @6.5 ft. volcanic clasts to 2" diameter in a CLAYEY SAND matrix, light yellowish brown, moist, moderately hard. @6 ft. Cemented, very hard.
			TD = 7 ft. (Refusal) No Water.

Test Pit No.	Depth (ft.)	USCS	Description
T-3	0.0 – 1.5	SM	**Topsoil** SILTY SAND with some clay, fine grained, dark brown, very moist, loose.
	1.5 – 5.5		**Friars Formation - Intact (Tfi)** Rounded volcanic clasts to 1.5" diameter in a SILTY SAND matrix, light yellowish brown, slightly moist, dense, flat lying; some flat, well rounded pebbles. @4 ft. Black manganese oxide layer, ¼" thick. @4.5 ft. Discontinuous SILTY SAND lens, 6" thick, light gray, moist, moderately hard; flat lying. @5 ft. Well cemented, hard. @5.5 ft. Very hard. TD = 5.5 ft. (Refusal) No Water.

Test Pit No.	Depth (ft.)	USCS	Description
T-4	0.0 – 1.5	SM	**Topsoil** SILTY SAND with some clay, fine grained, brown to dark brown, very moist, loose.
	1.5 – 12.0		**Friars Formation - Intact (Tfi)** Rounded volcanic clasts to 2" diameter, in a CLAYEY SAND matrix, mottled olive and yellowish red, moist, medium dense. @11 ft. carbonate lens, ¾" thick, white, moist, dense. @11.5 ft. CLAYSTONE bed, 1" thick, slightly moist, moderately hard; some black manganese oxide. @12 ft. Rounded volcanic clasts in an olive to light yellowish brown, very hard; well cemented. TD = 12 ft. (Practical Refusal) No Water.

Test Pit No.	Depth (ft.)	USCS	Description
T-5	0.0 – 1.5	SM	**Topsoil** SILTY SAND with some clay, dark brown, very moist, loose; one cobble to 12” diameter.
	1.5 – 14.5		**Friars Formation – Creep Affected (Tfc)** CLAY, strong brown, very moist, soft; some rounded pebbles; highly weathered. @4 ft. Mottled olive and yellowish brown, moist to very moist, medium dense to dense, massive; trace rounded pebbles. @10 ft. SANDY CLAY, light reddish brown, dense, moderately fractured, breaks into 2” angular clasts. TD = 14.5 ft. No Water.

Test Pit No.	Depth (ft.)	USCS	Description
T-6	0.0 – 8.0	CL	**Artificial Fill – Undocumented (afu)** SANDY CLAY, light yellowish brown to dark gray, moist, stiff; some cobbles to 1" diameter. @5 ft. Very moist.
	8.0 – 14.0		**Alluvium (Qal)** SANDY CLAY, dark brown, very moist, soft, some gravel to 1.5" diameter.
	14.0 – 15.0		**Friars Formation – Creep Affected (Tfc)** CLAYSTONE, trace fine-grained sand, pale yellow, moderately soft.
			TD = 15 ft. No Water.

Test Pit No.	Depth (ft.)	USCS	Description
T-7	0.0 – 2.0	SM	**Topsoil** SILTY SAND, brownish gray. @ 1 ft. Paleosol, CLAYSTONE, iron oxide stained olive, very moist, soft; some rounded cobble to 1" diameter; highly weathered.
	2.0 – 13.0		**Friars Formation – Creep Affected (Tfc)** SANDY CLAYSTONE, olive, moist, moderately soft, massive; some rounded clasts to 1.5" diameter. @3 ft. Very moist, massive; trace pebbles and cobbles. @9 ft. Six-inch thick discontinuous CLAYEY SANDSTONE Bed, fine grained, light gray, moist, moderately hard; one Krotovena-vertical, 2" wide by 11" deep. @9.5 ft. N80°W 12°NE - Contact between fine SANDY CLAYSTONE bed and underlying light gray SANDSTONE. @12 ft. rounded volcanic clasts to 1.5" diameter in a CLAYEY SAND matrix, light yellowish brown, slightly moist, dense; flat lying. TD = 13 ft. No Water.

Test Pit No.	Depth (ft.)	USCS	Description
T-8	0.0 – 7.0	SC	**Colluvium (Qcol)** CLAYEY SAND and SANDY CLAY, brown, very moist; some rounded pebbles, cobbles, and weathered sandstone clasts.
	7.0 – 12.0		**Friars Formation – Creep Affected (Tfc)** SANDY CLAY, olive, very moist, firm, massive; trace rounded pebbles. @11 ft. CLAYEY SAND, light gray, moist, dense; massive. TD = 12 ft. No Water.

Test Pit No.	Depth (ft.)	USCS	Description
T-9	0.0 – 2.0	SC	**Colluvium (Qcol)** SANDY CLAY, brown, very moist, soft; some rounded pebbles.
	2.0 – 12.0		**Friars Formation – Creep Affected (Tfc)** SANDY CLAY, light yellowish brown, moist, soft. @5 ft. CLAYEY SAND, fine grained, light yellowish brown, moist, medium dense; massive; iron oxide staining along thin fractures. TD = 12 ft. No Water.

Appendix C

Laboratory Test Results

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DRY DENSITY AND MOISTURE CONTENT - ASTM D2166

Project Name: Tyler Street
Location: Santee, CA
Project No: 1310-04

Sample Date:	2/8-10/16	By:	FE/PJD
Submittal Date:	2/15/16	By:	PWM
Test Date:	3/5/16	By:	HM

Boring No.	BA-1	BA-1	BA-1	BA-1	BA-1	BA-2	BA-2	BA-2
Depth (ft)	5'	10 '	30 '	40 '	50 '	5 '	50 '	60 '
Moisture Content (%)	14.5	11.0	25.3	22.1	19.5	19.1	23.3	13.2
Dry Density (pcf)	107.6	112.4	98.1	100.0	107.2	105.9	102.0	105.1

Boring No.	BA-3	BA-3
Depth (ft)	30 '	40 '
Moisture Content (%)	15.1	23.2
Dry Density (pcf)	115.6	93.8

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: Tyler Street
Location: Santee, CA
Project No: 1310-04
Date: 3/12/16

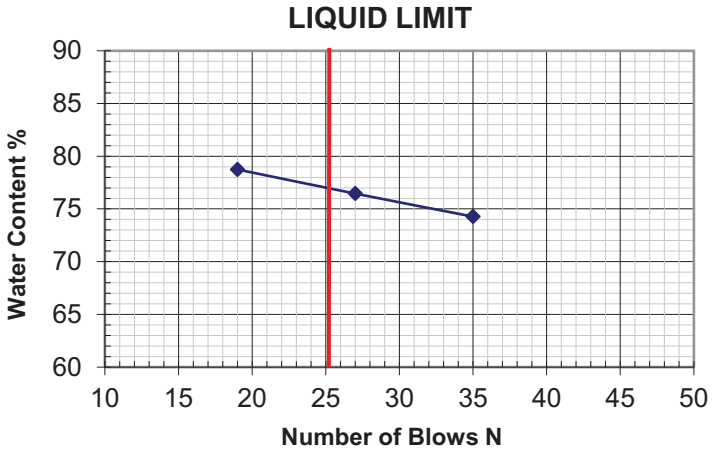
Excavation: BA-4
Depth: 45 '
Description:
By: H-M

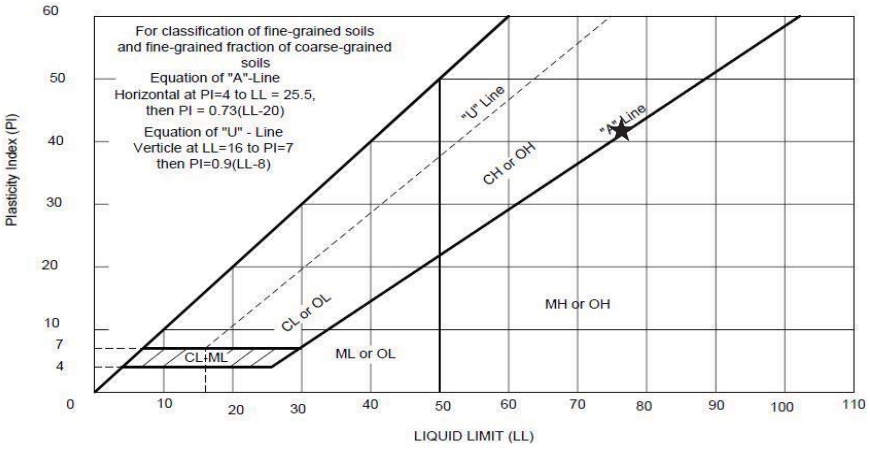
LIQUID LIMIT

Can No.	4	5	14
Wt. wet soil+can (g)	26.14	26.14	22.95
Wt. dry soil+can (g)	19.73	19.71	17.80
Wt. can (g)	11.10	11.30	11.26
Wt. mosture (g)	6.41	6.43	5.15
Wt. dry soil (g)	8.63	8.41	6.54
Water Content %	74.28	76.46	78.75
No. of Blows	35	27	19

PLASTIC LIMIT

3	10
18.37	16.65
16.52	15.23
11.23	11.15
1.85	1.42
5.29	4.08
34.97	34.80





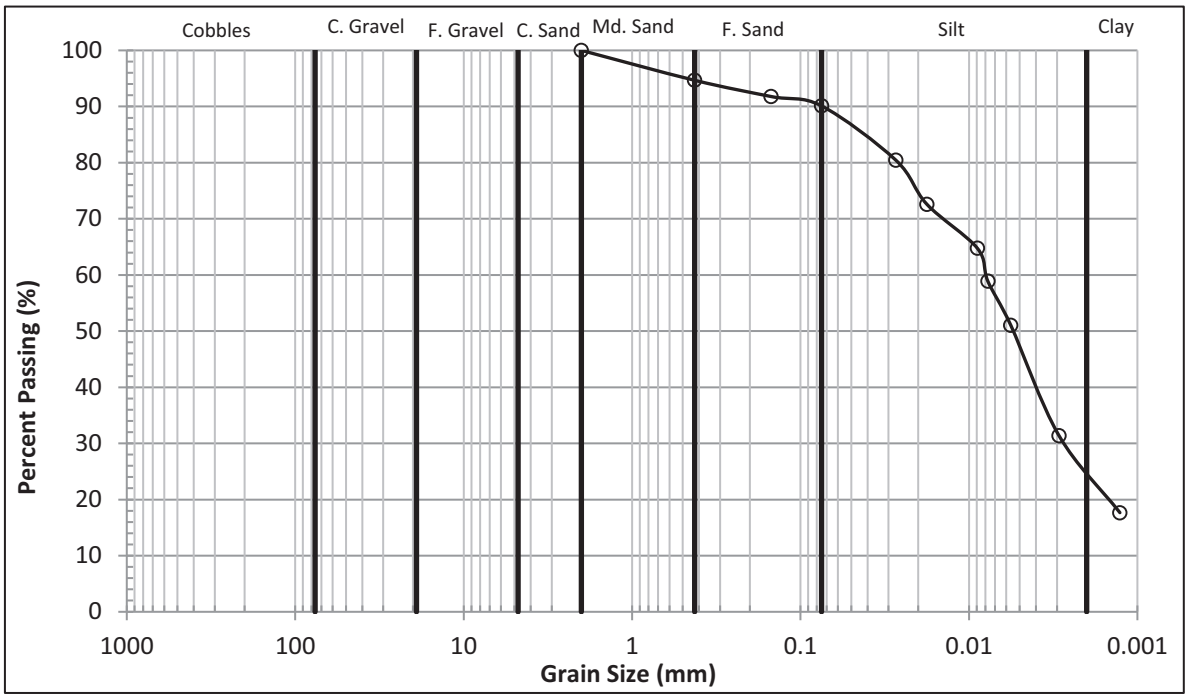
Liquid Limit (LL) 77 Plastic Limit (PL) 35 Plasticity Index (PI) 42

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: Tyler Street
Location: Santee, CA
Project No.: 1310-04
Date: 3/10/16

Excavation: BA-1
Depth: 30 '
By: H M



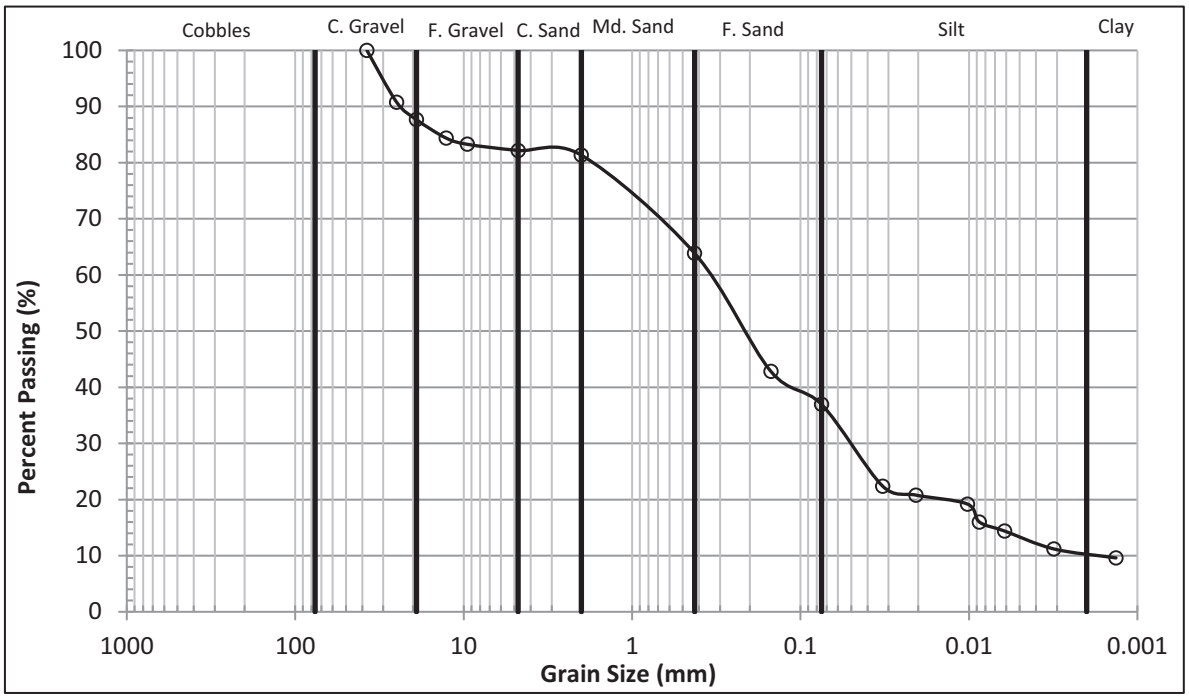
Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	94.67
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	91.79
# 200	0.075	90.11
Hydro	0.0272	80.46
Hydro	0.0178	72.61
Hydro	0.0089	64.76
Hydro	0.0077	58.88
Hydro	0.0056	51.03
Hydro	0.0029	31.40
Hydro	0.0013	17.66

Summary	
% Gravel =	0.0
% Sand =	9.9
% Silt =	65.6
% Clay =	24.5
Sum =	100.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name:	Tyler Street	Excavation:	BA-2
Location:	Santee, CA	Depth:	9 '
Project No.:	1310-04	By:	H M
Date:	10/28/15		



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	100.00
1 "	25.00	90.77
3/4 "	19.05	87.67
1/2 "	12.70	84.38
3/8 "	9.53	83.28
# 4	4.75	82.18
# 10	2.00	81.34
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	63.84
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	42.83
# 200	0.075	36.95
Hydro	0.0326	22.39
Hydro	0.0207	20.79
Hydro	0.0102	19.19
Hydro	0.0087	15.99
Hydro	0.0061	14.39
Hydro	0.0031	11.19
Hydro	0.0013	9.60

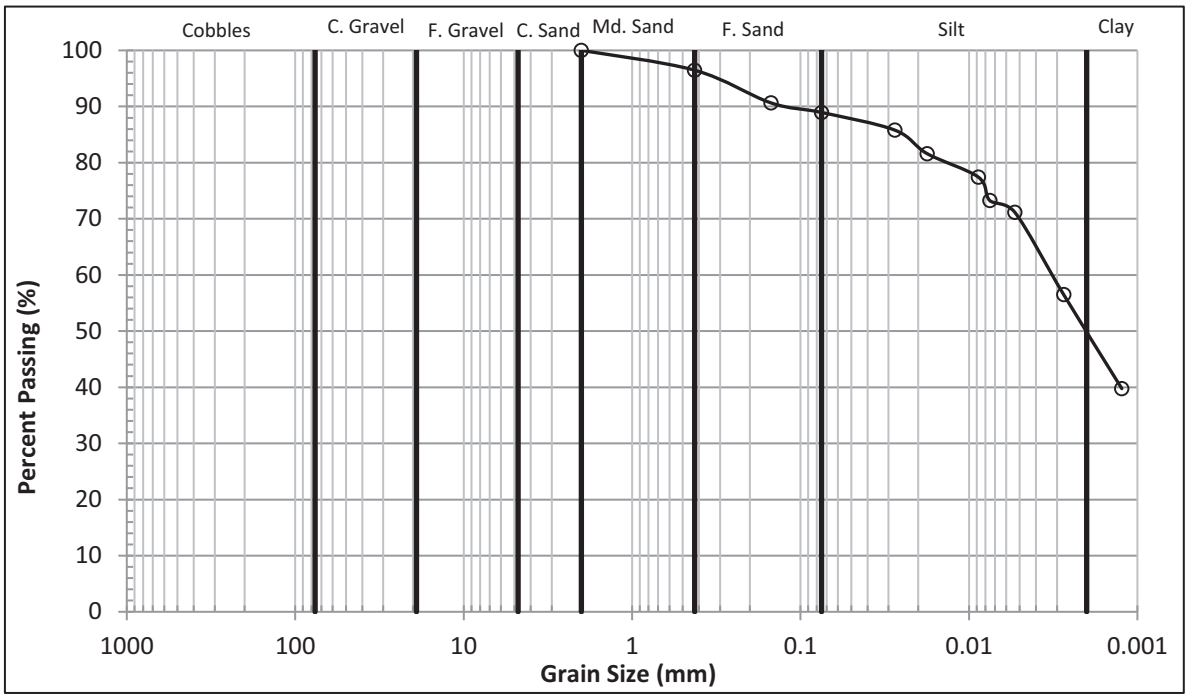
Summary	
% Gravel =	17.8
% Sand =	51.7
% Silt =	20.1
% Clay =	10.4
Sum =	100.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: Tyler Street
Location: Santee, CA
Project No.: 1310-04
Date: 3/13/16

Excavation: BA-2
Depth: 40 '
By: H M



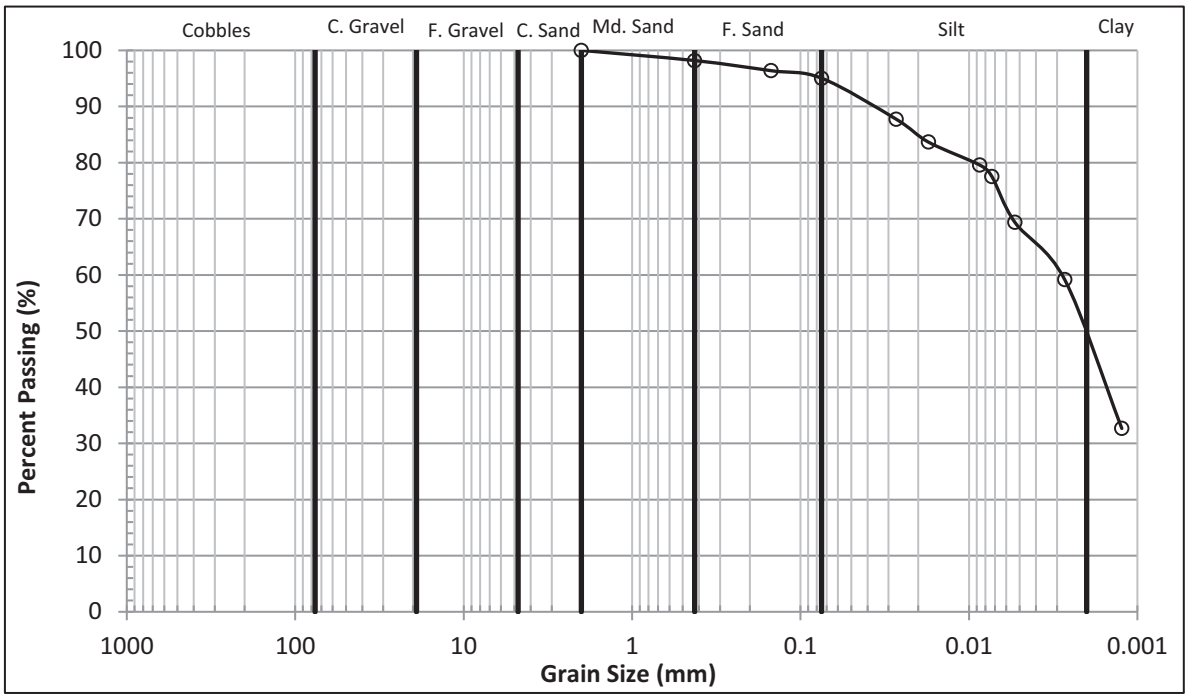
Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	96.47
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	90.66
# 200	0.075	88.95
Hydro	0.0275	85.79
Hydro	0.0177	81.61
Hydro	0.0088	77.42
Hydro	0.0075	73.24
Hydro	0.0053	71.15
Hydro	0.0027	56.50
Hydro	0.0012	39.76

Summary	
% Gravel =	0.0
% Sand =	11.1
% Silt =	40.8
% Clay =	48.1
Sum =	100.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name:	Tyler Street	Excavation:	BA-2
Location:	Santee, CA	Depth:	50 '
Project No.:	1310-04	By:	H M
Date:	3/13/16		



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	98.19
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	96.39
# 200	0.075	95.05
Hydro	0.0271	87.75
Hydro	0.0174	83.67
Hydro	0.0086	79.59
Hydro	0.0073	77.55
Hydro	0.0053	69.38
Hydro	0.0027	59.18
Hydro	0.0012	32.66

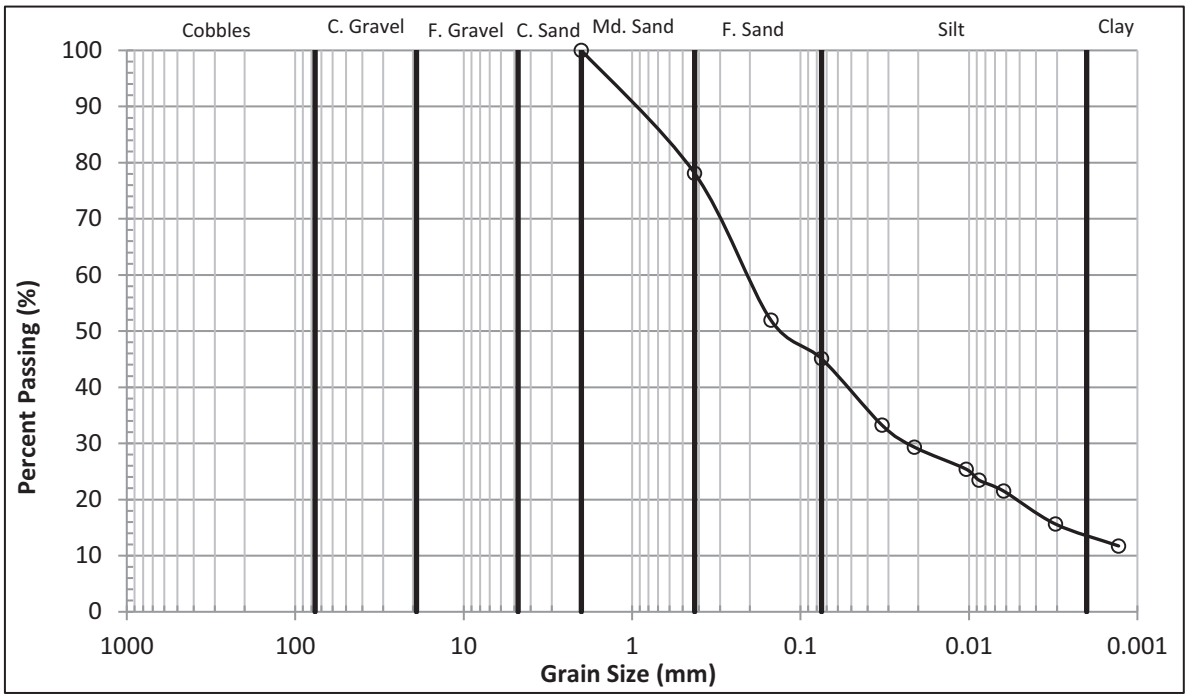
Summary	
% Gravel =	0.0
% Sand =	5.0
% Silt =	49.1
% Clay =	45.9
Sum =	100.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: Tyler Street
Location: Santee, CA
Project No.: 1310-04
Date: 3/10/16

Excavation: T-5
Depth: 1 '
By: H M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	78.10
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	51.95
# 200	0.075	45.08
Hydro	0.0328	33.24
Hydro	0.0211	29.33
Hydro	0.0104	25.42
Hydro	0.0087	23.46
Hydro	0.0062	21.51
Hydro	0.0031	15.64
Hydro	0.0013	11.73

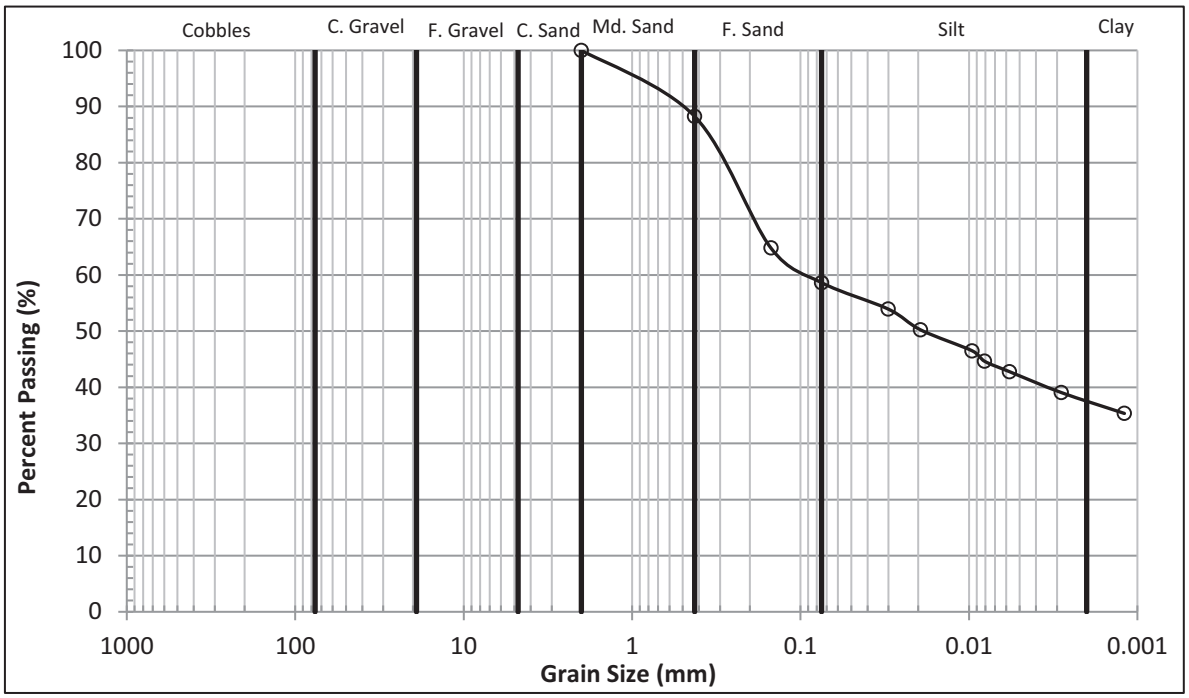
Summary	
% Gravel =	0.0
% Sand =	54.9
% Silt =	31.4
% Clay =	13.7
Sum =	100.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: Tyler Street
Location: Santee, CA
Project No.: 1310-04
Date: 3/10/16

Excavation: T-8
Depth: 8 '
By: H M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	88.24
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	64.81
# 200	0.075	58.63
Hydro	0.0302	53.93
Hydro	0.0194	50.21
Hydro	0.0096	46.49
Hydro	0.0081	44.63
Hydro	0.0057	42.77
Hydro	0.0028	39.05
Hydro	0.0012	35.34

Summary	
% Gravel =	0.0
% Sand =	41.4
% Silt =	21.4
% Clay =	37.2
Sum =	100.0

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

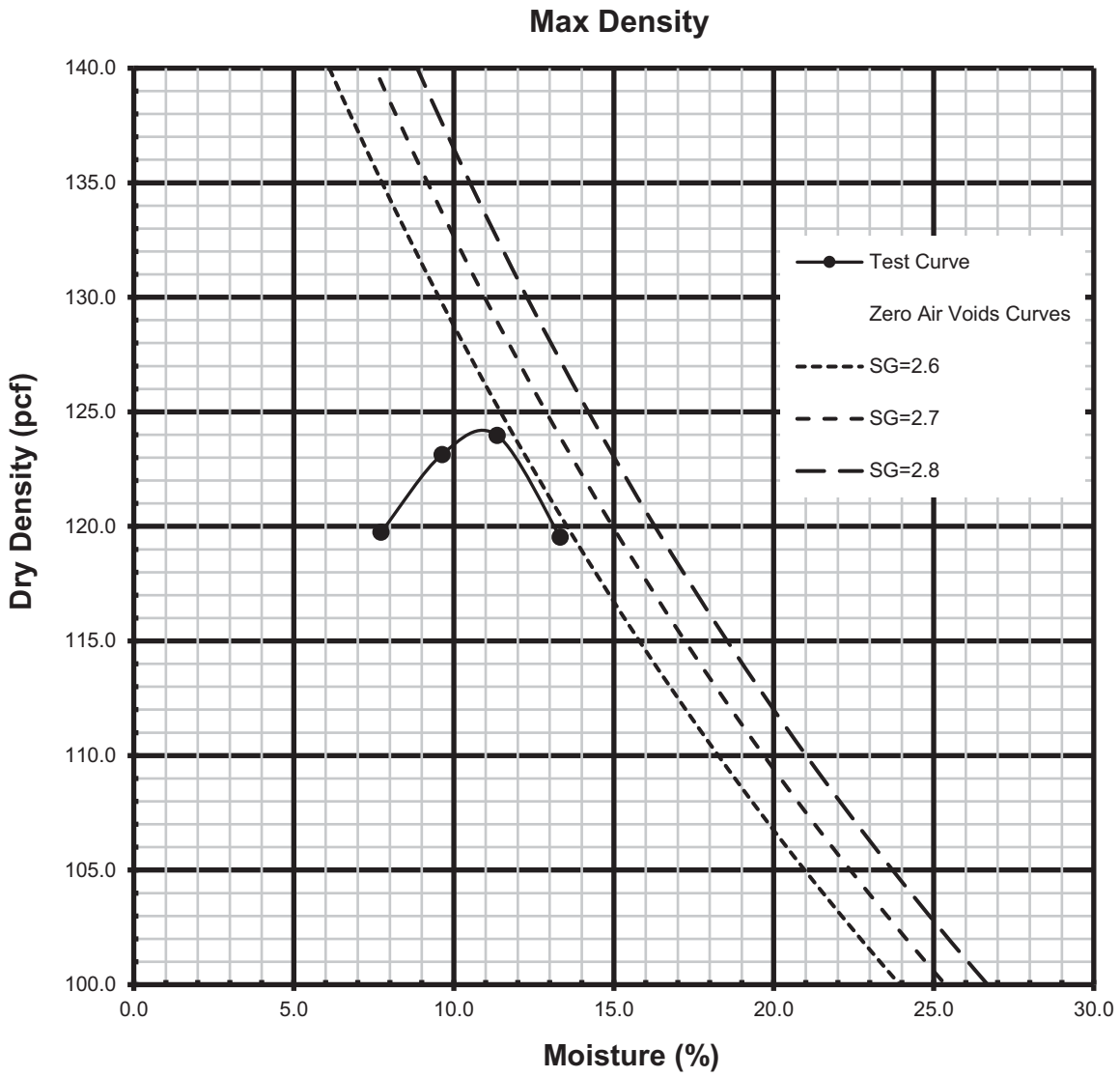
MAXIMUM DENSITY - ASTM D1557

Project Name: Tyler Street
Location: Santee, CA
Project No.: 1310-04
Date: 2/26/2016

Excavation: T-5
Depth: 1 '
Description: Dark Brown Clayey Sand
By: H-M

Method A

Test Number	1	2	3	4
Dry Density (pcf)	119.8	123.1	124.0	119.5
Moisture Content (%)	7.7	9.6	11.4	13.3



Maximum Density **124.0** pcf

Optimum Moisture **11.0** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

MAXIMUM DENSITY - ASTM D1557

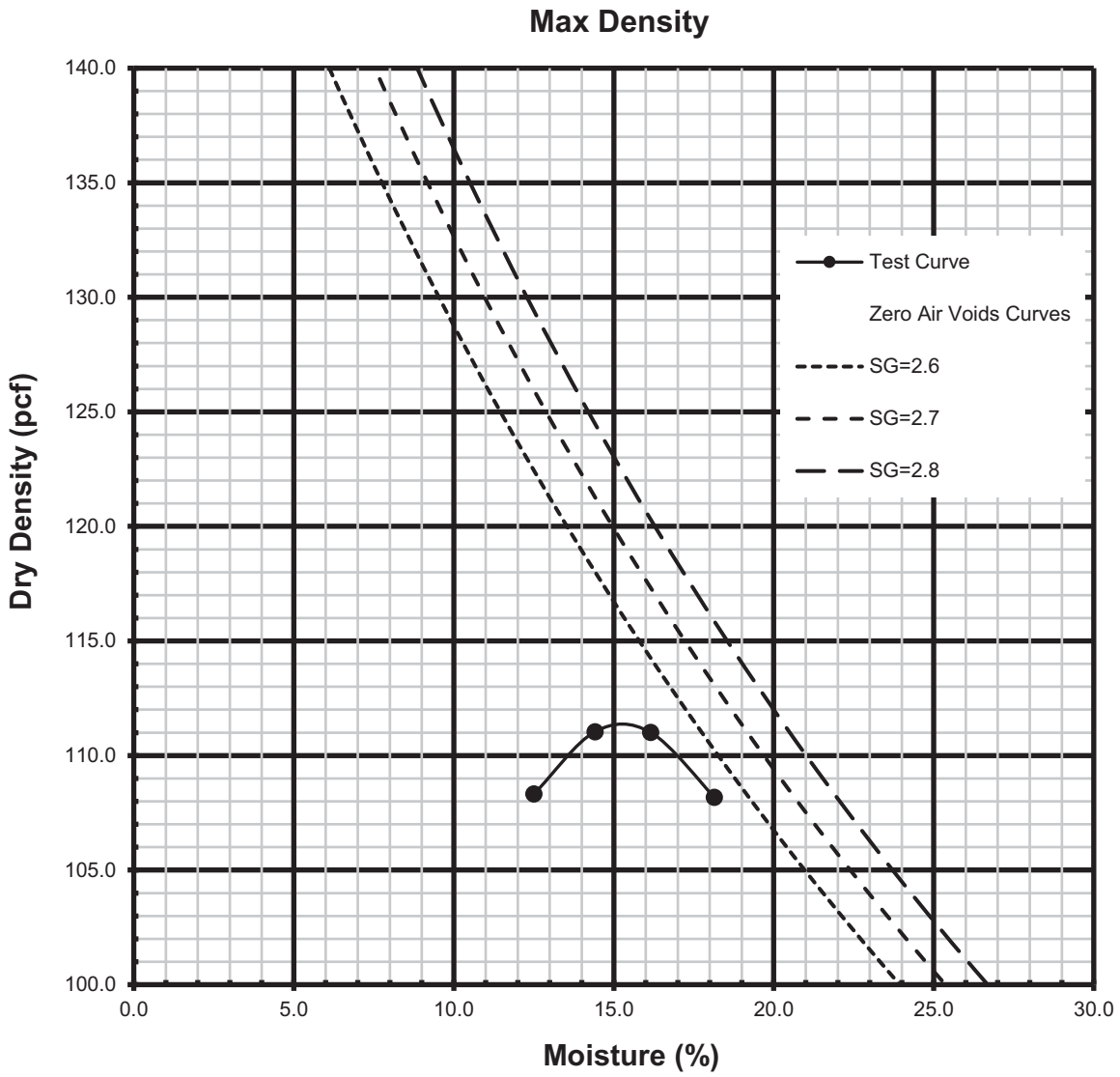
Project Name: Tyler Street
Location: Santee, CA
Project No.: 1310-04
Date: 2/26/2016

Excavation: T-8
Depth: 8 '
Description: Brown Sandy Clay

By: H-M

Method A

Test Number	1	2	3	4
Dry Density (pcf)	108.3	111.0	111.0	108.2
Moisture Content (%)	12.5	14.4	16.1	18.1



Maximum Density **111.0** pcf

Optimum Moisture **15.5** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

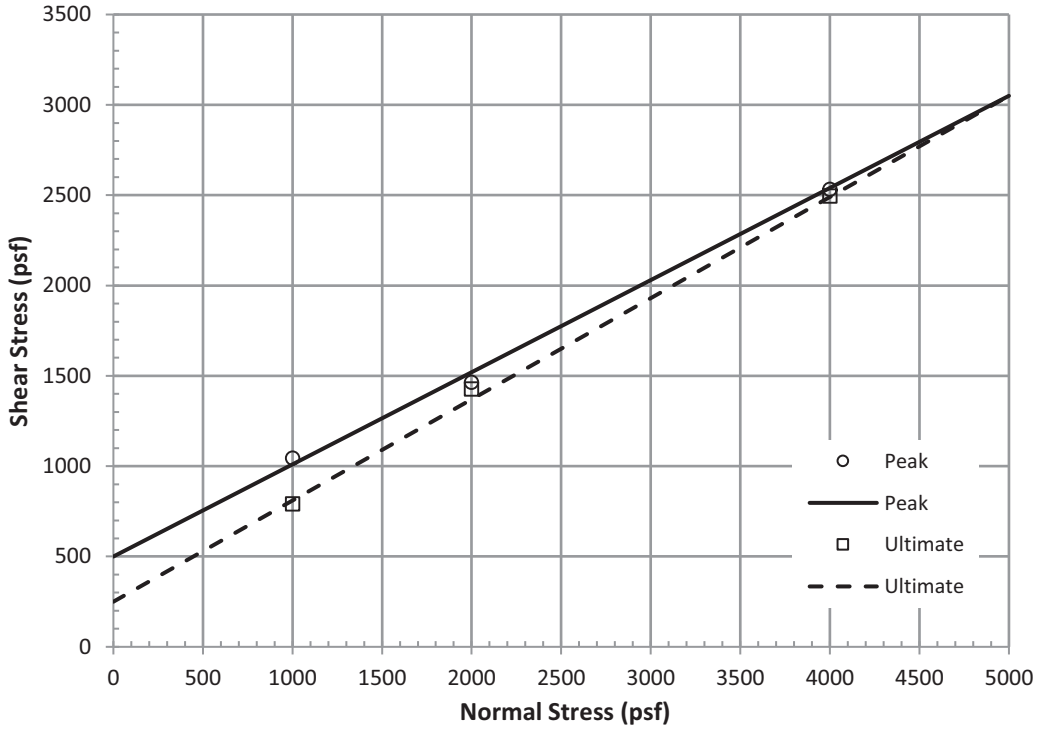
DIRECT SHEAR - ASTM D3080

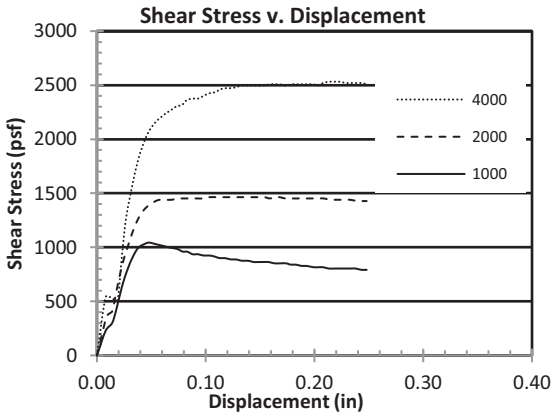
Project Name:	Tyler Street	Excavation:	T-5
Location:	Santee, CA	Depth:	1'
Project No.:	1310-04	Sample Type:	Remolded to 90%
Date:	3/16/16	By:	HM

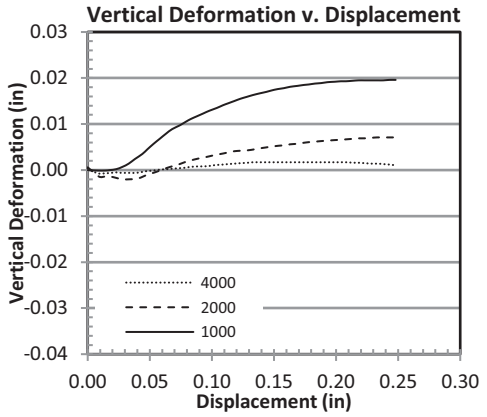
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	1044	1464	2532
Ultimate Shear Stress (psf)	792	1428	2496
Initial Moisture Content (%)	11.0	11.0	11.0
Initial Dry Density (pcf)	111.6	111.6	111.6

Method:	Drained
Consolidation:	Yes
Saturation:	Yes
Shearing Rate (in/min):	0.04

	Peak	Ultimate
Friction Angle, phi (deg)	27	29
Cohesion (psf)	500	250







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

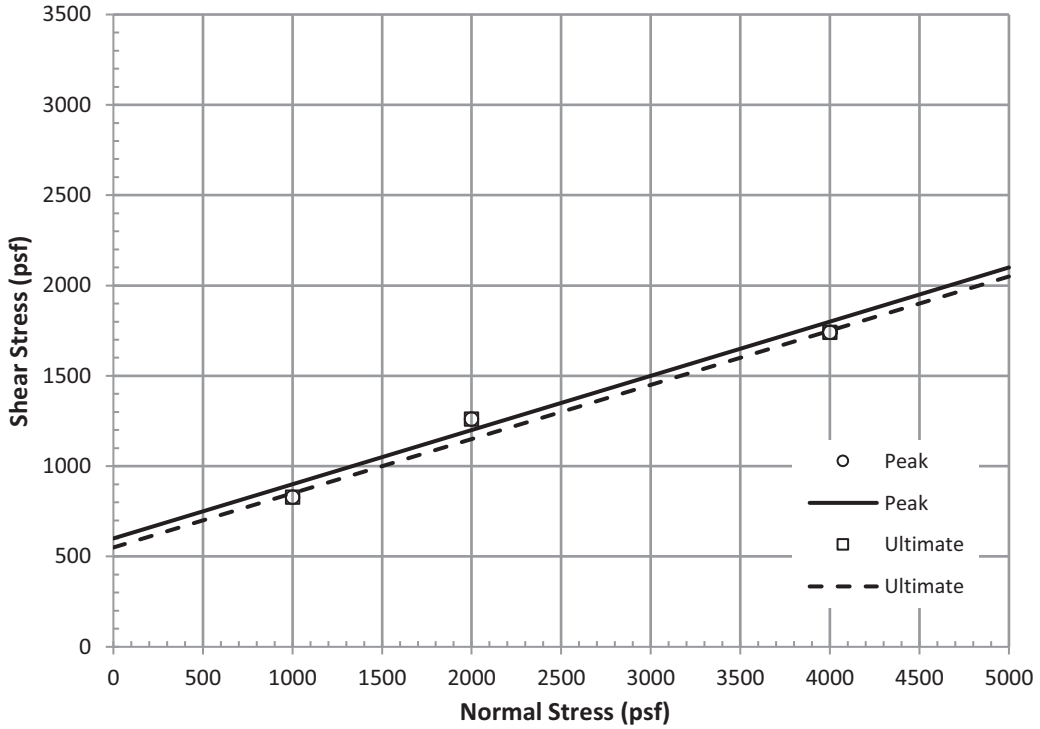
Project Name: Tyler Street
Location: Santee, CA
Project No.: 1310-04
Date: 3/18/16

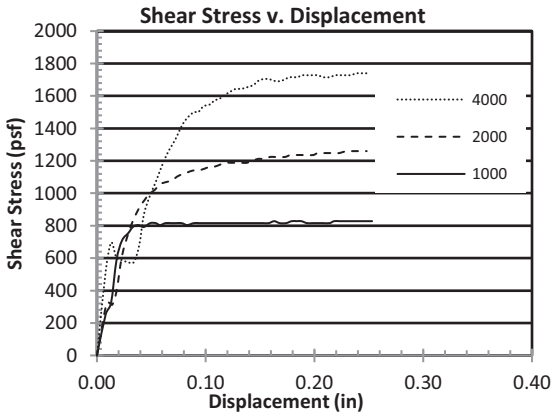
Excavation: T-8
Depth: 8'
Sample Type: Remolded to 90%
By: HM

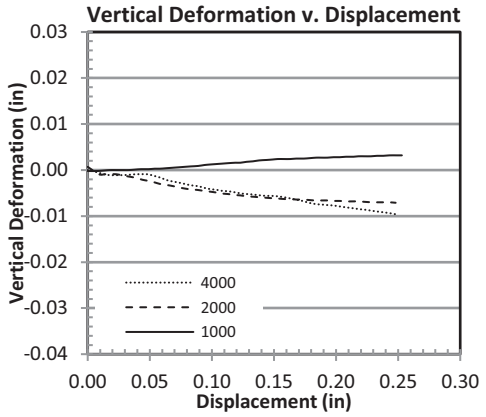
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	828	1260	1740
Ultimate Shear Stress (psf)	828	1260	1740
Initial Moisture Content (%)	15.5	15.5	15.5
Initial Dry Density (pcf)	99.9	99.9	99.9

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.04

	Peak	Ultimate
Friction Angle, phi (deg)	17	17
Cohesion (psf)	600	550







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

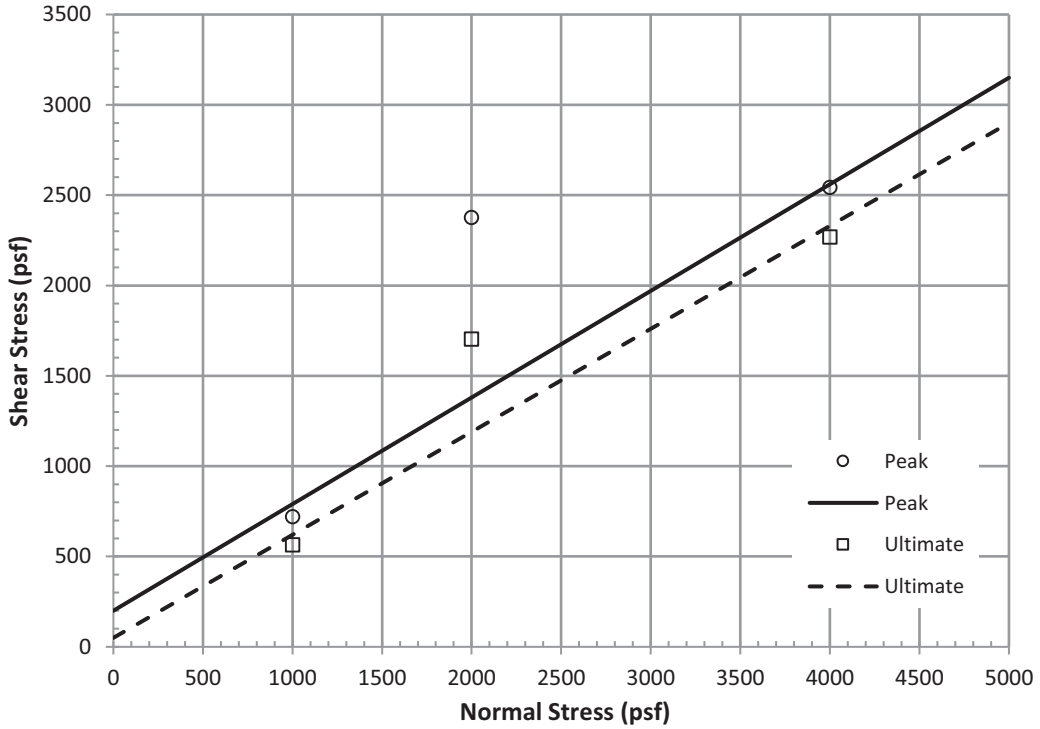
Project Name: Tyler Street
Location: Santee, CA
Project No.: 1310-04
Date: 3/11/16

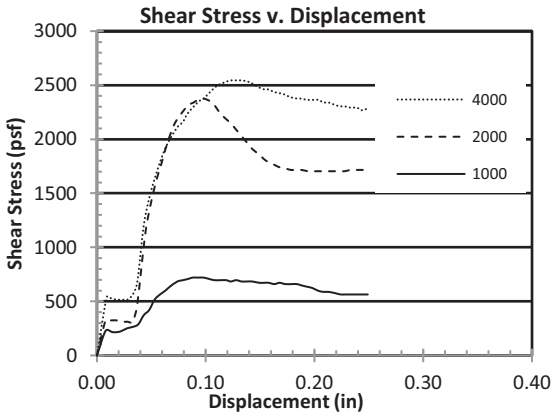
Excavation: BA-1
Depth: 10'
Sample Type: Undisturbed
By: HM

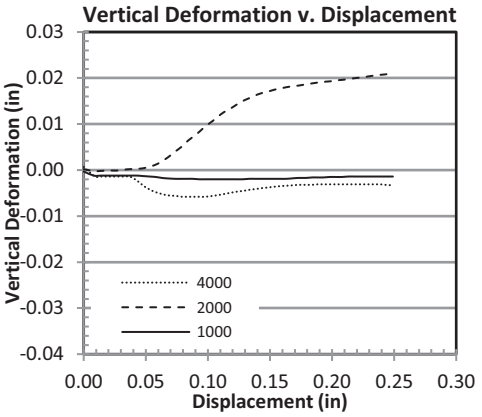
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	720	2376	2544
Ultimate Shear Stress (psf)	564	1704	2268
Initial Moisture Content (%)	11.0	11.0	11.0
Initial Dry Density (pcf)	108.8	112.4	97.3

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.04

	Peak	Ultimate
Friction Angle, phi (deg)	31	30
Cohesion (psf)	200	50







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

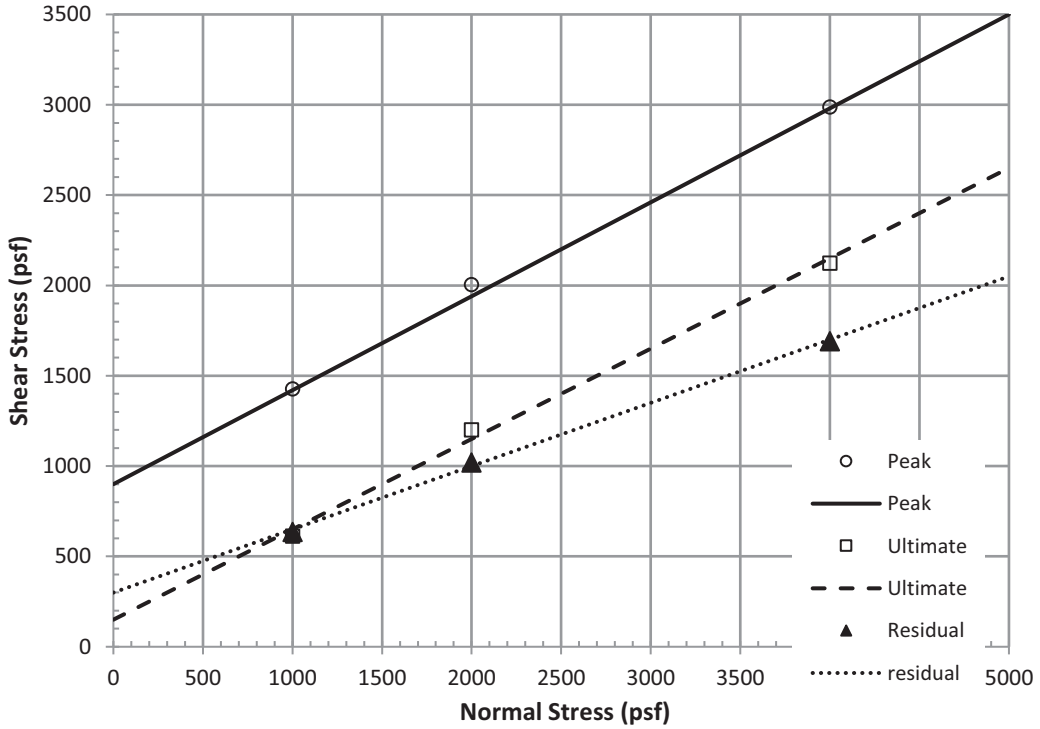
DIRECT SHEAR - ASTM D3080

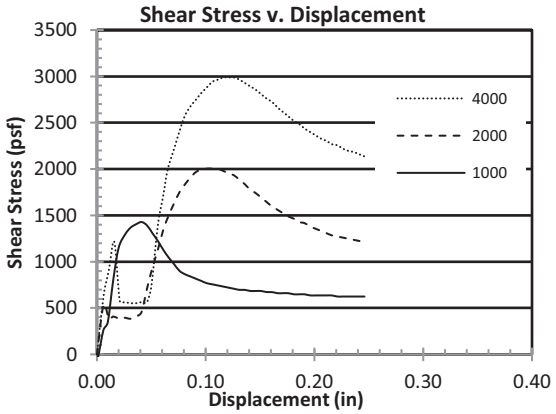
Project Name:	Tyler Street	Excavation:	BA-1
Location:	Santee, CA	Depth:	30
Project No.:	1310-04	Sample Type:	Undisturbed
Date:	3/10/16	By:	HM

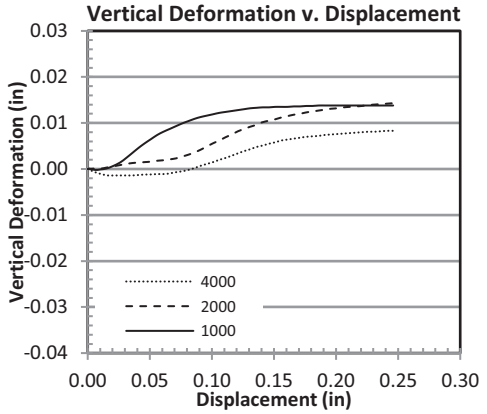
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	1428	2004	2988
Ultimate Shear Stress (psf)	624	1212	1392
Initial Moisture Content (%)	25.3	25.3	25.3
Initial Dry Density (pcf)	97.0	95.0	96.9

Method:	Drained
Consolidation:	Yes
Saturation:	Yes
Shearing Rate (in/min):	0.04

	Peak	Ultimate	Residual
Friction Angle, phi (deg)	27	27	19
Cohesion (psf)	900	150	300







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

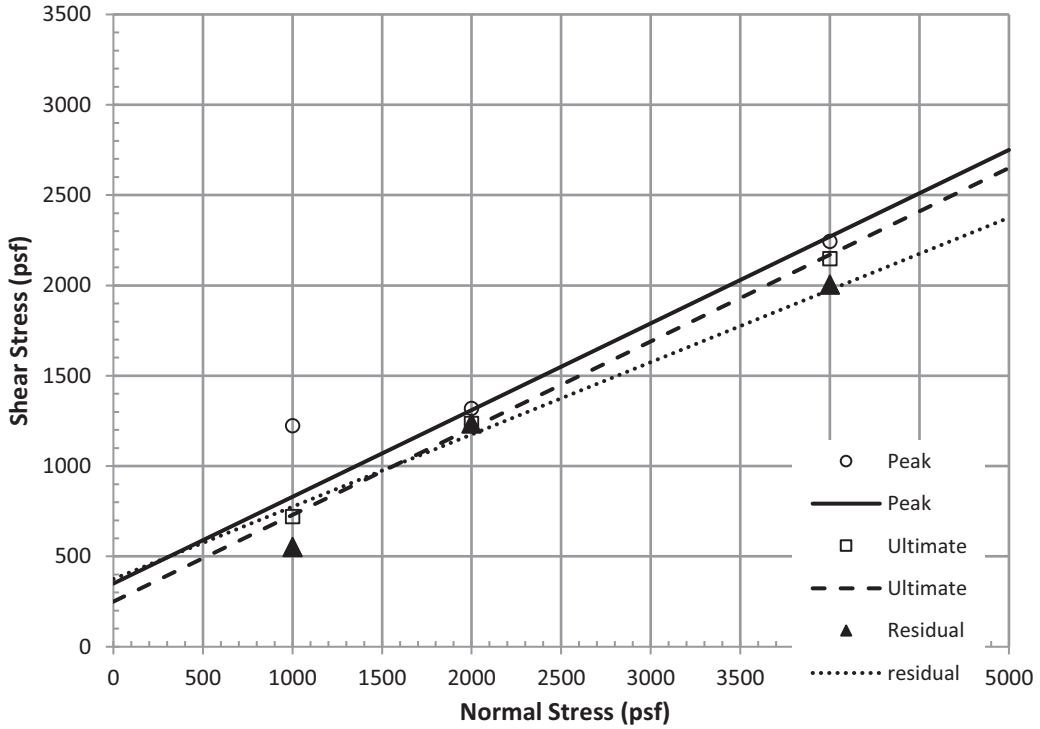
Project Name: Tyler Street
Location: Santee, CA
Project No.: 1310-04
Date: 3/13/16

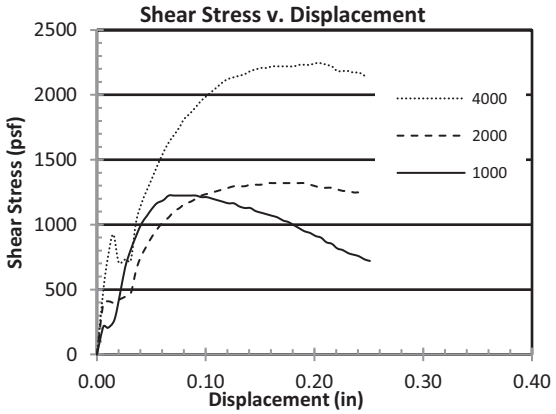
Excavation: BA-2
Depth: 40'
Sample Type: Undisturbed
By: HM

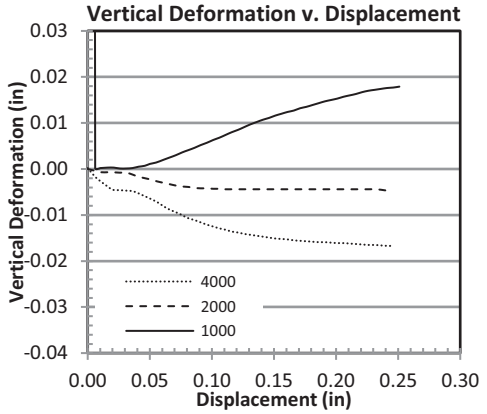
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	1224	1320	2244
Ultimate Shear Stress (psf)	720	1236	2148
Initial Moisture Content (%)	23.2	23.2	23.2
Initial Dry Density (pcf)	98.9	92.0	88.3

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.04

	Peak	Ultimate	Residual
Friction Angle, phi (deg)	26	26	22
Cohesion (psf)	350	250	375







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

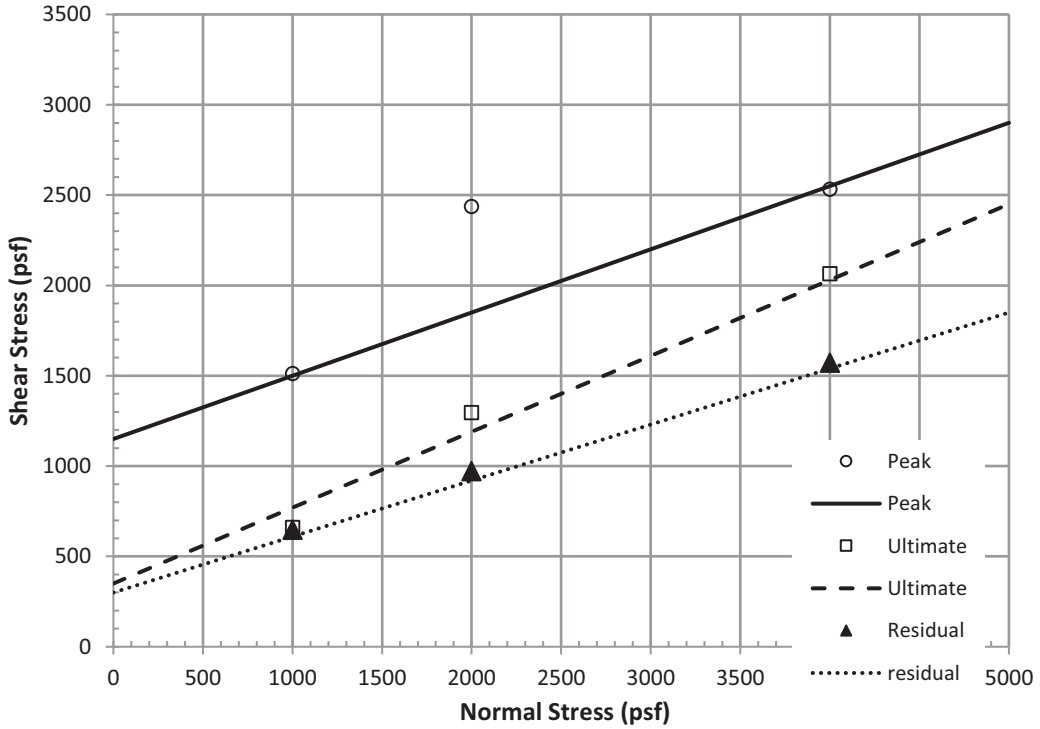
DIRECT SHEAR - ASTM D3080

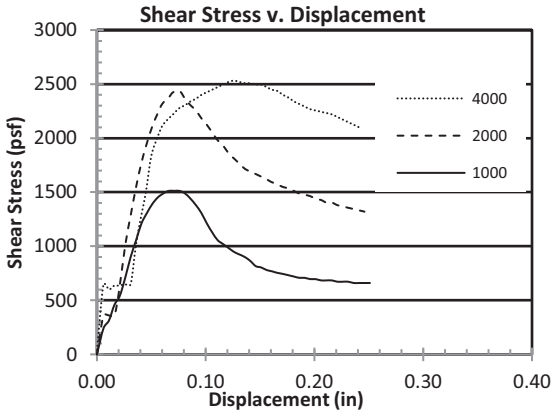
Project Name:	Tyler Street	Excavation:	BA-2
Location:	Santee, CA	Depth:	50'
Project No.:	1310-04	Sample Type:	Undisturbed
Date:	3/14/16	By:	HM

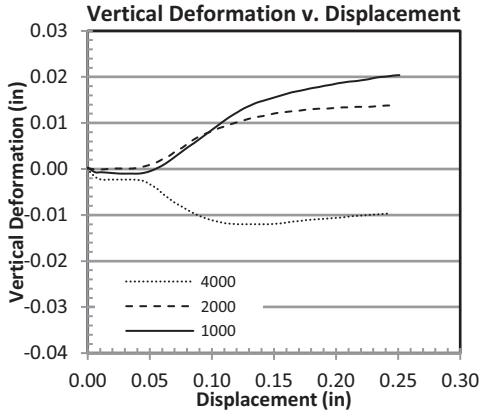
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	1512	2436	2532
Ultimate Shear Stress (psf)	660	1296	2064
Initial Moisture Content (%)	23.3	23.3	23.3
Initial Dry Density (pcf)	102.9	102.2	93.1

Method:	Drained
Consolidation:	Yes
Saturation:	Yes
Shearing Rate (in/min):	0.04

	Peak	Ultimate	Residual
Friction Angle, phi (deg)	19	23	17
Cohesion (psf)	1150	350	300







Appendix D

Slope Stability Analysis

1310-04 Tyler Street 45 ft Fill Slope

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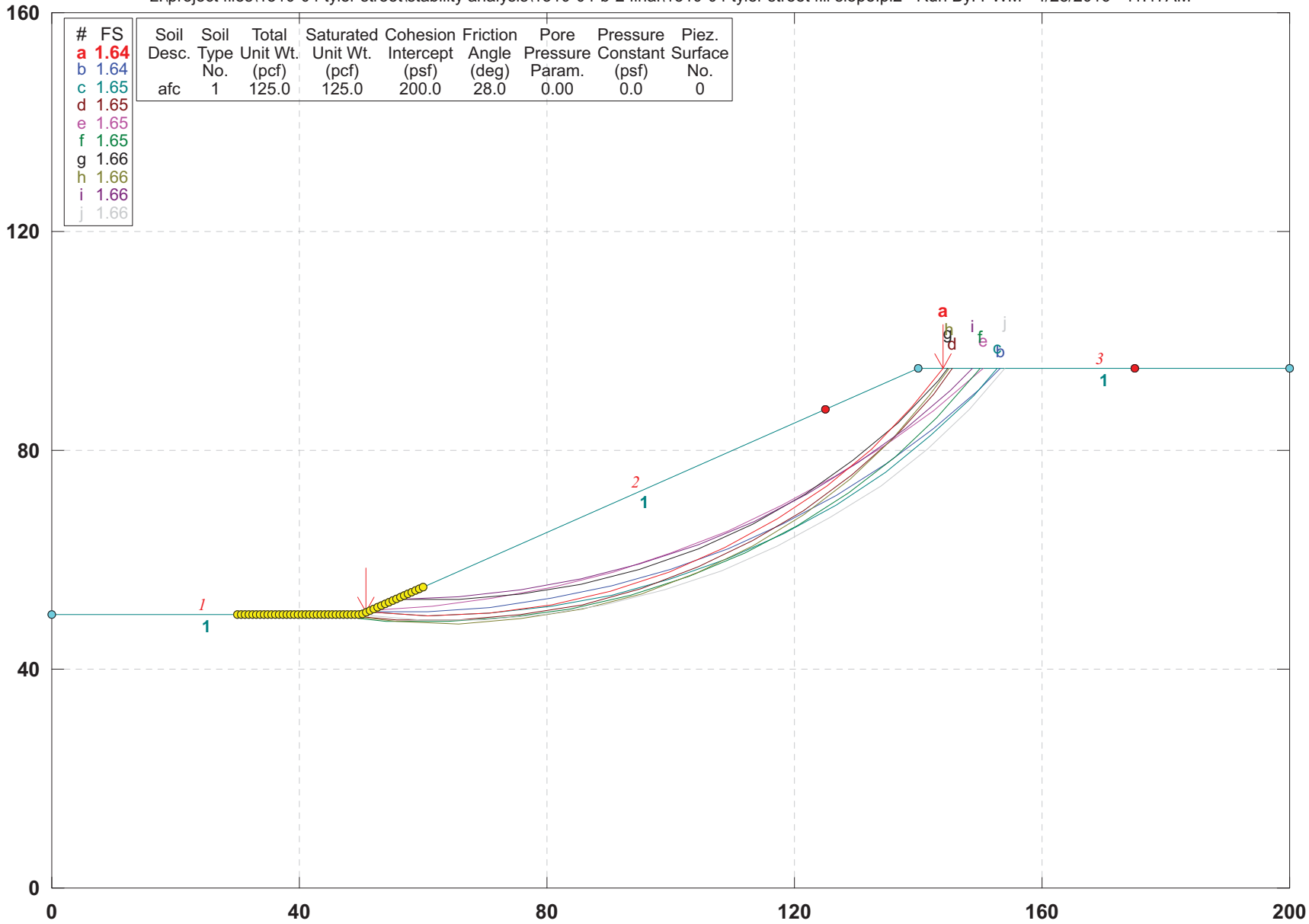

GSTABL7 v.2 FSmin=1.64

Safety Factors Are Calculated By The Modified Bishop Method

1310-04 Tyler Street 45 ft Fill Slope Pseudostatic

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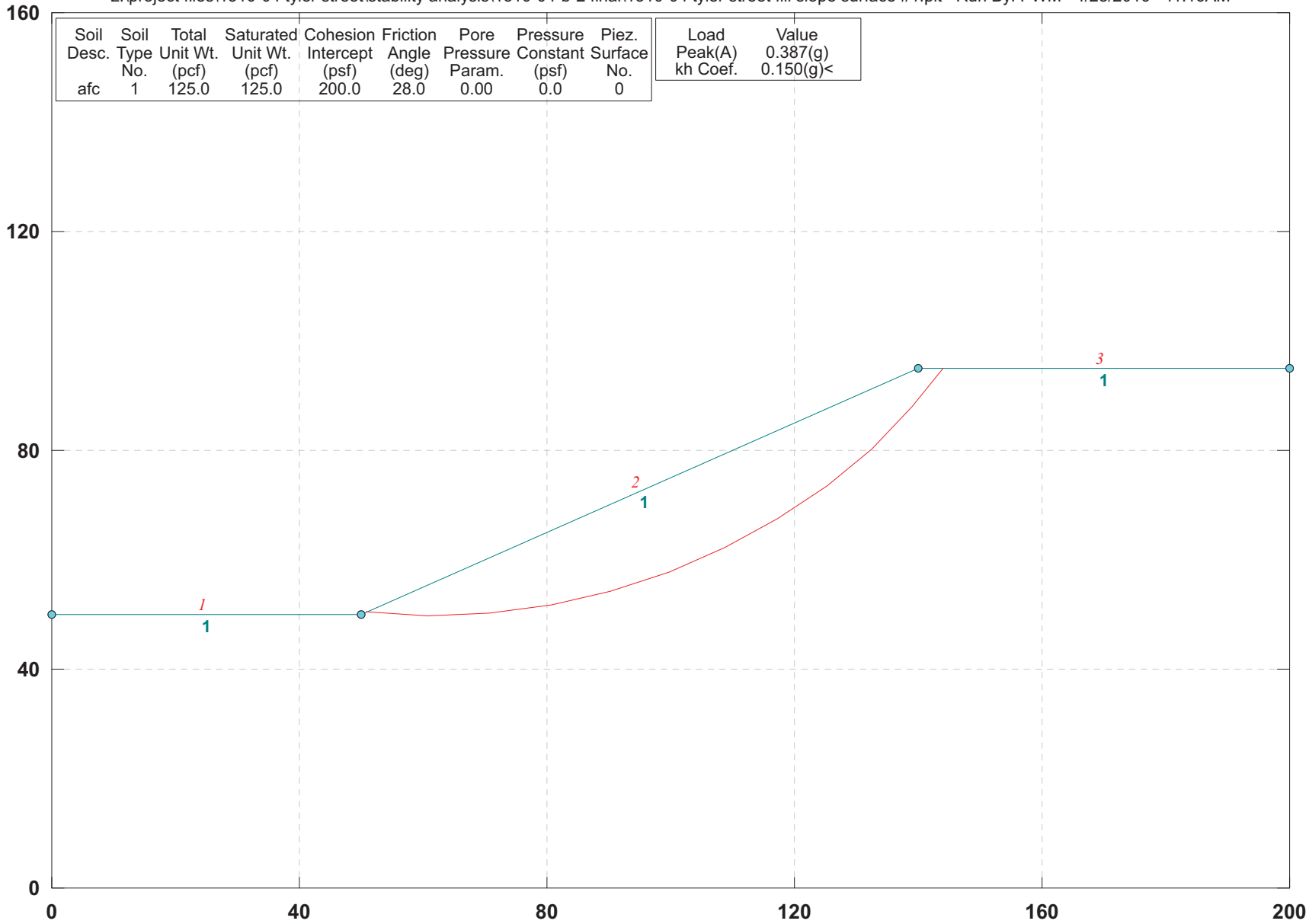

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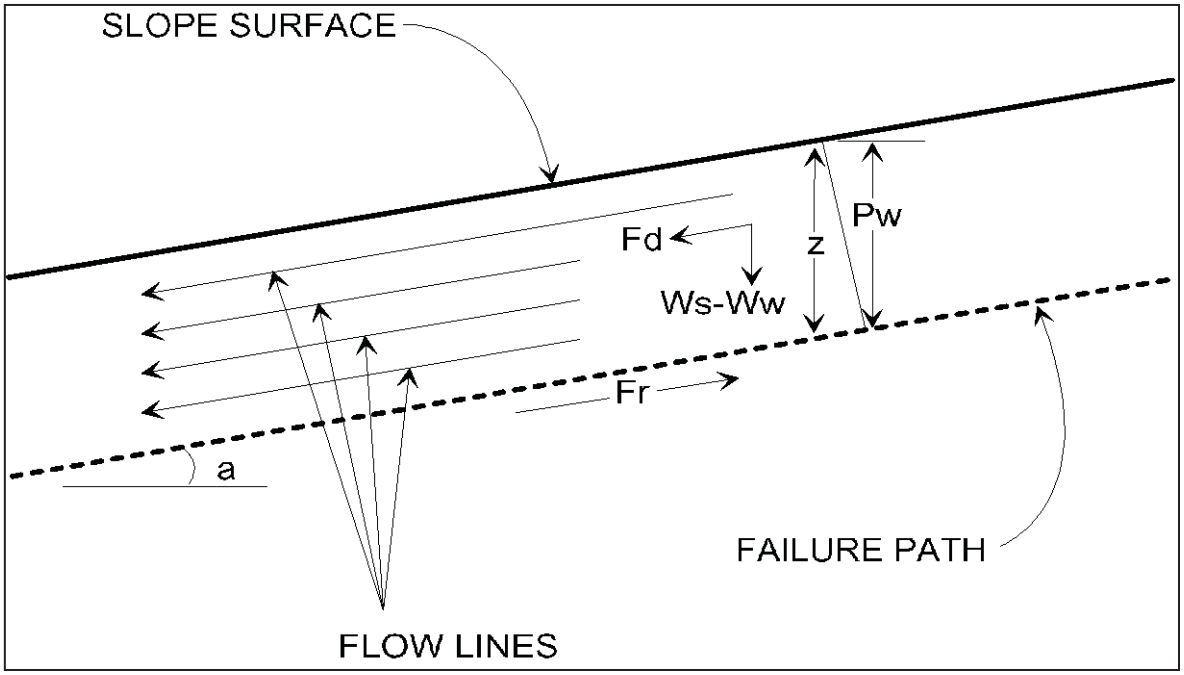
Factor Of Safety Is Calculated By The Modified Bishop Method

SURFICIAL SLOPE STABILITY - 2:1 FILL



Assume: (1) Saturation To Slope Surface
(2) Sufficient Permeability To Establish Water Flow

Pw = Water Pressure Head=(z)(cos^2(a))
Ws = Saturated Soil Unit Weight
Ww = Unit Weight of Water (62.4 lb/cu.ft.)
u = Pore Water Pressure=(Ww)(z)(cos^2(a))
z = Layer Thickness
a = Angle of Slope
phi = Angle of Friction
c = Cohesion
Fd = (0.5)(z)(Ws)(sin(2a))
Fr = (z)(Ws-Ww)(cos^2(a))(tan(phi)) + c
Factor of Safety (FS) = Fr/Fd

Given:

Ws (pcf)	z (ft)	a (degrees)	(radians)	phi (degrees)	(radians)	c (psf)
125	4	26.56505	0.463648	28	0.488692	200

Calculations:

Pw	u	Fd	Fr	**FS**
3.20	199.68	200.00	306.51	**1.53**

1310-04 Tyler Street AA 60 ft shear key

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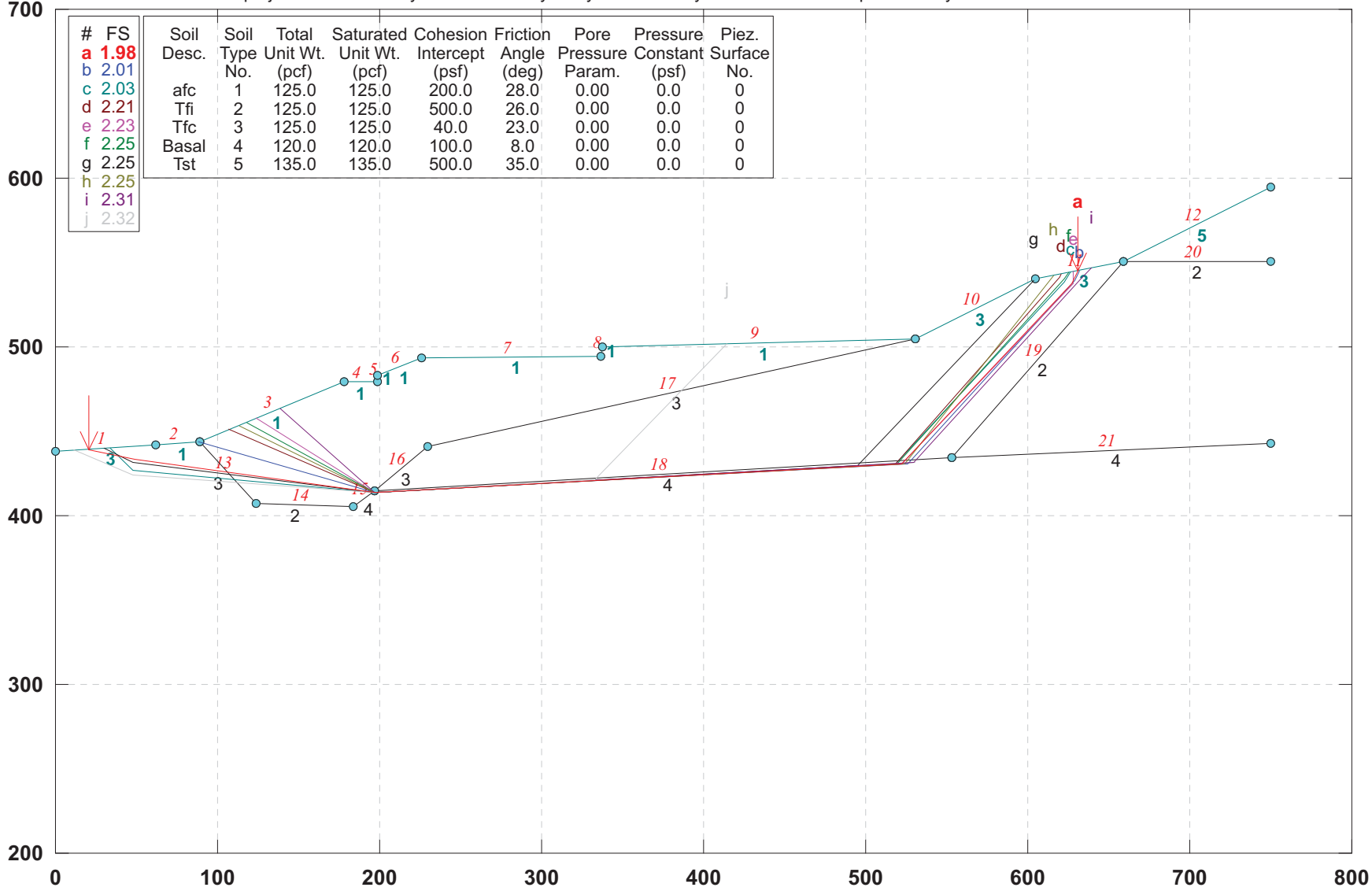

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
afc	1	125.0	125.0	200.0	28.0	0.00	0.0	0
Tfi	2	125.0	125.0	500.0	26.0	0.00	0.0	0
Tfc	3	125.0	125.0	40.0	23.0	0.00	0.0	0
Basal	4	120.0	120.0	100.0	8.0	0.00	0.0	0
Tst	5	135.0	135.0	500.0	35.0	0.00	0.0	0

GSTABL7 v.2 FSmin=1.98

Safety Factors Are Calculated By The Simplified Janbu Method

1310-04 Tyler Street BB 60 ft shear key

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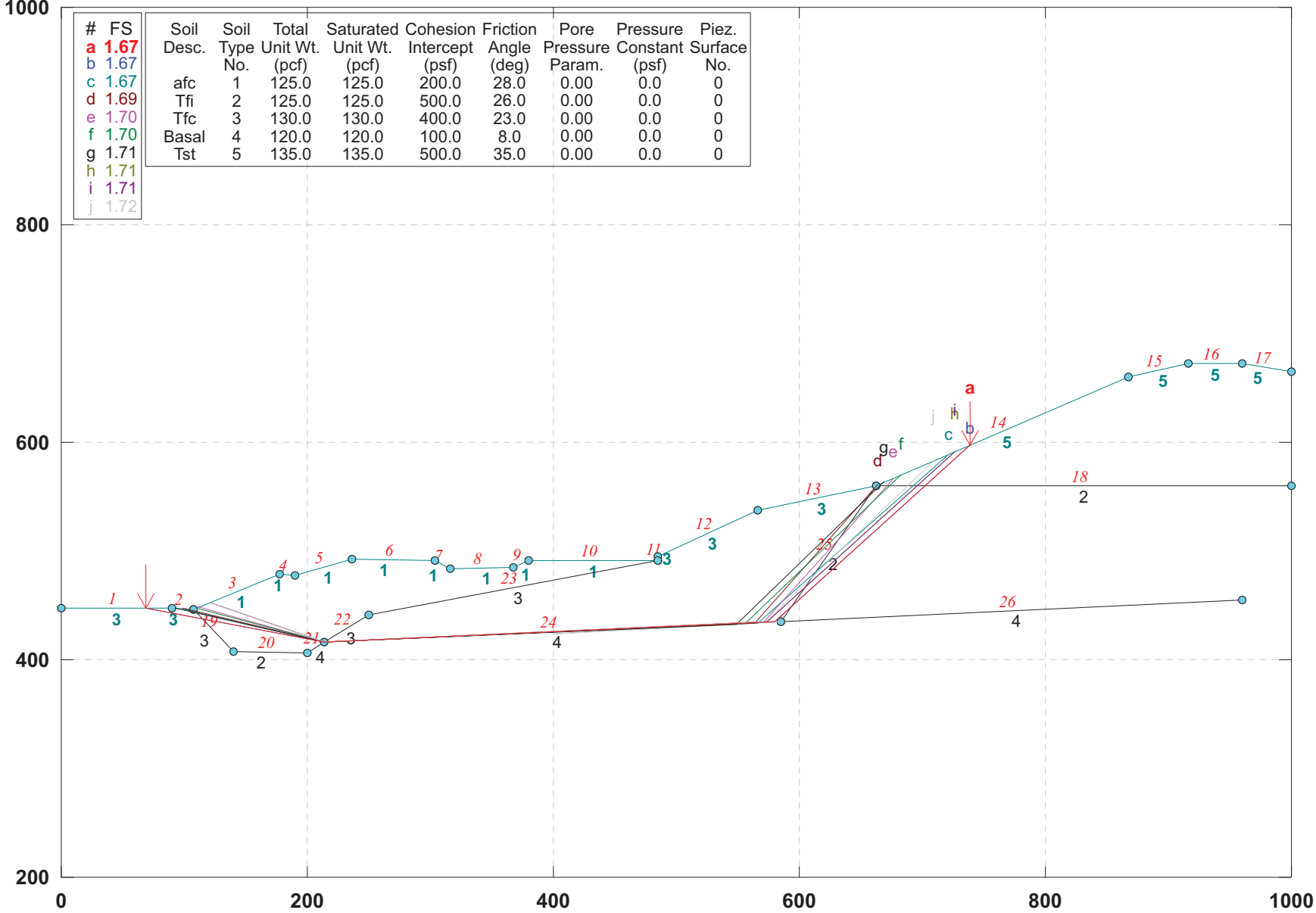

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
afc	1	125.0	125.0	200.0	28.0	0.00	0.0	0
Tfi	2	125.0	125.0	500.0	26.0	0.00	0.0	0
Tfc	3	130.0	130.0	400.0	23.0	0.00	0.0	0
Basal	4	120.0	120.0	100.0	8.0	0.00	0.0	0
Tst	5	135.0	135.0	500.0	35.0	0.00	0.0	0

GSTABL7 v.2 FSmin=1.67

Safety Factors Are Calculated By The Simplified Janbu Method

Appendix E

Earthwork Specifications and Grading Details

GENERAL EARTHWORK SPECIFICATIONS

I. General

A. General procedures and requirements for earthwork and grading are presented herein. The earthwork and grading recommendations provided in the geotechnical report are considered part of these specifications, and where the general specifications provided herein conflict with those provided in the geotechnical report, the recommendations in the geotechnical report shall govern. Recommendations provided herein and in the geotechnical report may need to be modified depending on the conditions encountered during grading.

B. The contractor is responsible for the satisfactory completion of all earthwork in accordance with the project plans, specifications, applicable building codes, and local governing agency requirements. Where these requirements conflict, the stricter requirements shall govern.

C. It is the contractor's responsibility to read and understand the guidelines presented herein and in the geotechnical report as well as the project plans and specifications. Information presented in the geotechnical report is subject to verification during grading. The information presented on the exploration logs depict conditions at the particular time of excavation and at the location of the excavation. Subsurface conditions present at other locations may differ, and the passage of time may result in different subsurface conditions being encountered at the locations of the exploratory excavations. The contractor shall perform an independent investigation and evaluate the nature of the surface and subsurface conditions to be encountered and the procedures and equipment to be used in performing his work.

D. The contractor shall have the responsibility to provide adequate equipment and procedures to accomplish the earthwork in accordance with applicable requirements. When the quality of work is less than that required, the Geotechnical Consultant may reject the work and may recommend that the operations be suspended until the conditions are corrected.

E. Prior to the start of grading, a qualified Geotechnical Consultant should be employed to observe grading procedures and provide testing of the fills for conformance with the project specifications, approved grading plan, and guidelines presented herein. All clearing and grubbing, remedial removals, clean-outs, removal bottoms, keyways, and subdrain installations should be observed and documented by the Geotechnical Consultant prior to placing fill. It is the contractor's responsibility to apprise the Geotechnical Consultant of their schedules and notify the Geotechnical Consultant when those areas are ready for observation.

F. The contractor is responsible for providing a safe environment for the Geotechnical Consultant to observe grading and conduct tests.

II. Site Preparation

A. Clearing and Grubbing: Excessive vegetation and other deleterious material shall be sufficiently removed as required by the Geotechnical Consultant, and such materials shall be

properly disposed of offsite in a method acceptable to the owner and governing agencies. Where applicable, the contractor may obtain permission from the Geotechnical Consultant, owner, and governing agencies to dispose of vegetation and other deleterious materials in designated areas onsite.

B. Unsuitable Soils Removals: Earth materials that are deemed unsuitable for the support of fill shall be removed as necessary to the satisfaction of the Geotechnical Consultant.

C. Any underground structures such as cesspoles, cisterns, mining shafts, tunnels, septic tanks, wells, pipelines, other utilities, or other structures located within the limits of grading shall be removed and/or abandoned in accordance with the requirements of the governing agency and to the satisfaction of the Geotechnical Consultant. Environmental evaluation of existing conditions is not the responsibility of the Geotechnical Consultant.

D. Preparation of Areas to Receive Fill: After removals are completed, the exposed surfaces shall be processed or scarified to a depth of approximately 8 inches, watered or dried, as needed, to achieve a generally uniform moisture content that is at or near optimum moisture content. The scarified materials shall then be compacted to the project requirements and tested as specified.

E. All areas receiving fill shall be observed and approved by the Geotechnical Consultant prior to the placement of fill. A licensed surveyor shall provide survey control for determining elevations of processed areas and keyways.

III. Placement of Fill

A. Suitability of fill materials: Any materials, derived onsite or imported, may be utilized as fill provided that the materials have been determined to be suitable by the Geotechnical Consultant. Such materials shall be essentially free of organic matter and other deleterious materials, and be of a gradation, expansion potential, and/or strength that is acceptable to the Geotechnical Consultant. Fill materials shall be tested in a laboratory approved by the Geotechnical Consultant, and import materials shall be tested and approved prior to being imported.

B. Generally, different fill materials shall be thoroughly mixed to provide a relatively uniform blend of materials and prevent abrupt changes in material type. Fill materials derived from benching should be dispersed throughout the fill area instead of placing the materials within only an equipment-width from the cut/fill contact.

C. Oversize Materials: Rocks greater than 12 inches in largest dimension shall be disposed of offsite or be placed in accordance with the recommendations by the Geotechnical Consultant in the areas that are designated as suitable for oversize rock placement. Rocks that are smaller than 8 inches in largest dimension may be utilized in the fill provided that they are not nested and are their quantity and distribution are acceptable to the Geotechnical Consultant and do not inhibit the ability to properly compact fill materials.

D. The fill materials shall be placed in thin, horizontal layers such that, when compacted, shall not exceed 6 inches. Each layer shall be spread evenly and shall be thoroughly mixed to obtain a near uniform moisture content and uniform blend of materials.

E. Moisture Content: Fill materials shall be placed at or above the optimum moisture content or as recommended by the geotechnical report. Where the moisture content of the engineered fill is less than recommended, water shall be added, and the fill materials shall be blended so that a near uniform moisture content is achieved. If the moisture content is above the limits specified by the Geotechnical Consultant, the fill materials shall be aerated by discing, blading, or other methods until the moisture content is acceptable.

F. Each layer of fill shall be compacted to the project standards in accordance to the project specifications and recommendations of the Geotechnical Consultant. Unless otherwise specified by the Geotechnical Consultant, the fill shall be compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM Test Method: D1557.

G. Benching: Where placing fill on a slope exceeding a ratio of 5 to 1 (horizontal to vertical), the ground should be keyed or benched. The keyways and benches shall extend through all unsuitable materials into suitable materials such as firm materials or sound bedrock or as recommended by the Geotechnical Consultant. The minimum keyway width shall be 15 feet and extend into suitable materials, or as recommended by the geotechnical report and approved by the Geotechnical Consultant. The minimum keyway width for fill over cut slopes is also 15 feet, or as recommended by the geotechnical report and approved by the Geotechnical Consultant. As a general rule, unless otherwise recommended by the Geotechnical Consultant, the minimum width of the keyway shall be equal to ½ the height of the fill slope.

H. Slope Face: The specified minimum relative compaction shall be maintained out to the finish face of fill and stabilization fill slopes. Generally, this may be achieved by overbuilding the slope and cutting back to the compacted core. The actual amount of overbuilding may vary as field conditions dictate. Alternately, this may be achieved by backrolling the slope face with suitable equipment or other methods that produce the designated result. Loose soil should not be allowed to build up on the slope face. If present, loose soils shall be trimmed to expose the compacted slope face.

I. Slope Ratio: Unless otherwise approved by the Geotechnical Consultant and governing agencies, permanent fill slopes shall be designed and constructed no steeper than 2 to 1 (horizontal to vertical).

J. Natural Ground and Cut Areas: Design grades that are in natural ground or in cuts should be evaluated by the Geotechnical Consultant to determine whether scarification and processing of the ground and/or overexcavation is needed.

K. Fill materials shall not be placed, spread, or compacted during unfavorable weather conditions. When grading is interrupted by rain, filing operations shall not resume until the Geotechnical Consultant approves the moisture and density of the previously placed compacted fill.

IV. Cut Slopes

A. The Geotechnical Consultant shall observe all cut slopes, including fill over cut slopes, and shall be notified by the contractor when cut slopes are started.

B. If adverse or potentially adverse conditions are encountered during grading, the Geotechnical Consultant shall investigate, evaluate, and make recommendations to mitigate the adverse conditions.

C. Unless otherwise stated in the geotechnical report, cut slopes shall not be excavated higher or steeper than the requirements of the local governing agencies. Short-term stability of the cut slopes and other excavations is the contractor's responsibility.

V. Drainage

A. Backdrains and Subdrains: Backdrains and subdrains shall be provided in fill as recommended by the Geotechnical Consultant and shall be constructed in accordance with the governing agency and/or recommendations of the Geotechnical Consultant. The location of subdrains, especially outlets, shall be surveyed and recorded by the Civil Engineer.

B. Top-of-slope Drainage: Positive drainage shall be established away from the top of slope. Site drainage shall not be permitted to flow over the tops of slopes.

C. Drainage terraces shall be constructed in compliance with the governing agency requirements and/or in accordance with the recommendations of the Civil Engineer.

D. Non-erodible interceptor swales shall be placed at the top of cut slopes that face the same direction as the prevailing drainage.

VI. Erosion Control

A. All finish cut and fill slopes shall be protected from erosion and/or planted in accordance with the project specifications and/or landscape architect's recommendations. Such measures to protect the slope face shall be undertaken as soon as practical after completion of grading.

B. During construction, the contractor shall maintain proper drainage and prevent the ponding of water. The contractor shall take remedial measures to prevent the erosion of graded areas until permanent drainage and erosion control measures have been installed.

VII. Trench Excavation and Backfill

A. Safety: The contractor shall follow all OSHA requirements for safety of trench excavations. Knowing and following these requirements is the contractor's responsibility. All trench excavations or open cuts in excess of 5 feet in depth shall be shored or laid back. Trench excavations and open cuts exposing adverse geologic conditions may require further evaluation

by the Geotechnical Consultant. If a contractor fails to provide safe access for compaction testing, backfill not tested due to safety concerns may be subject to removal.

B. Bedding: Bedding materials shall be non-expansive and have a Sand Equivalent greater than 30. Where permitted by the Geotechnical Consultant, the bedding materials can be densified by jetting.

C. Backfill: Jetting of backfill materials to achieve compaction is generally not acceptable. Where permitted by the Geotechnical Consultant, the bedding materials can be densified by jetting provided the backfill materials are granular, free-draining and have a Sand Equivalent greater than 30.

VIII. Geotechnical Observation and Testing During Grading

A. Compaction Testing: Fill will be tested and evaluated by the Geotechnical Consultant for evaluation of general compliance with the recommended compaction and moisture conditions. The tests shall be taken in the compacted soils beneath the surface if the surficial materials are disturbed. The contractor shall assist the Geotechnical Consultant by excavating suitable test pits for testing of compacted fill.

B. Where tests indicate that the density of a layer of fill is less than required, or the moisture content is not within specifications, the Geotechnical Consultant shall notify the contractor of the unsatisfactory conditions of the fill. The portions of the fill that are not within specifications shall be reworked until the required density and/or moisture content has been attained. No additional fill shall be placed until the last lift of fill is tested and found to meet the project specifications and approved by the Geotechnical Consultant.

C. If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as adverse weather, excessive rock or deleterious materials being placed in the fill, insufficient equipment, excessive rate of fill placement, results in a quality of work that is unacceptable, the consultant shall notify the contractor, and the contractor shall rectify the conditions, and if necessary, stop work until conditions are satisfactory.

D. Frequency of Compaction Testing: The location and frequency of tests shall be at the Geotechnical Consultant's discretion. Generally, compaction tests shall be taken at intervals approximately two feet in fill height.

E. Compaction Test Locations: The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of the compaction test locations. The contractor shall coordinate with the surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations. Alternately, the test locations can be surveyed and the results provided to the Geotechnical Consultant.

F. Areas of fill that have not been observed or tested by the Geotechnical Consultant may have to be removed and recompacted at the contractor's expense. The depth and extent of removals will be determined by the Geotechnical Consultant.

G. Observation and testing by the Geotechnical Consultant shall be conducted during grading in order for the Geotechnical Consultant to state that, in his opinion, grading has been completed in accordance with the approved geotechnical report and project specifications.

H. Reporting of Test Results: After completion of grading operations, the Geotechnical Consultant shall submit reports documenting their observations during construction and test results. These reports may be subject to review by the local governing agencies.

Appendix F

Homeowners Maintenance Guidelines

HOMEOWNERS MAINTENANCE GUIDELINES

Homeowners are accustomed to maintaining their homes. They expect to paint their houses periodically, replace wiring, clean out clogged plumbing, and repair roofs. Maintenance of the home site, particularly on hillsides, should be considered on the same basis, or even on a more serious basis because neglect can result in serious consequences. In most cases, lot and site maintenance can be taken care of along with landscaping, and can be carried out more economically than repair after neglect.

Most slope and hillside lot problems are associated with water. Uncontrolled water from a broken pipe, cesspool, or wet weather causes most damage. Wet weather is the largest cause of slope problems, particularly in California where rain is intermittent, but may be torrential. Therefore, drainage and erosion control are the most important aspects of home site stability; these provisions must not be altered without competent professional advice. Further, maintenance must be carried out to assure their continued operation.

As geotechnical engineers concerned with the problems of building sites in hillside developments, we offer the following list of recommended home protection measures as a guide to homeowners.

Expansive Soils

Some of the earth materials on site have been identified as being expansive in nature. As such, these materials are susceptible to volume changes with variations in their moisture content. These soils will swell upon the introduction of water and shrink upon drying. The forces associated with these volume changes can have significant negative impacts (in the form of differential movement) on foundations, walkways, patios, and other lot improvements. In recognition of this, the project developer has constructed homes on these lots on post-tensioned or mat slabs with pier and grade beam foundation systems, intended to help reduce the potential adverse effects of these expansive materials on the residential structures within the project. Such foundation systems are not intended to offset the forces (and associated movement) related to expansive soil, but are intended to help soften their effects on the structures constructed thereon.

Homeowners purchasing property and living in an area containing expansive soils must assume a certain degree of responsibility for homeowner improvements as well as for maintaining conditions around their home. Provisions should be incorporated into the design and construction of homeowner improvements to account for the expansive nature of the onsite soils material. Lot maintenance and landscaping should also be conducted in consideration of the expansive soil characteristics. Of primary importance is minimizing the moisture variation below all lot improvements. Such design, construction and homeowner maintenance provisions should include:

- Employing contractors for homeowner improvements who design and build in recognition of local building code and site specific soils conditions.
- Establishing and maintaining positive drainage away from all foundations, walkways, driveways, patios, and other hardscape improvements.

- Avoiding the construction of planters adjacent to structural improvements. Alternatively, planter sides/bottoms can be sealed with an impermeable membrane and drained away from the improvements via subdrains into approved disposal areas.
- Sealing and maintaining construction/control joints within concrete slabs and walkways to reduce the potential for moisture infiltration into the subgrade soils.
- Utilizing landscaping schemes with vegetation that requires minimal watering. Alternatively, watering should be done in a uniform manner as equally as possible on all sides of the foundation, keeping the soil "moist" but not allowing the soil to become saturated.
- Maintaining positive drainage away from structures and providing roof gutters on all structures with downspouts installed to carry roof runoff directly into area drains or discharged well away from the structures.
- Avoiding the placement of trees closer to the proposed structures than a distance of one-half the mature height of the tree.
- Observation of the soil conditions around the perimeter of the structure during extremely hot/dry or unusually wet weather conditions so that modifications can be made in irrigation programs to maintain relatively constant moisture conditions.

Sulfates

On site soils should be tested for the presence of soluble sulfates. Concrete mixes should be designed based on Code standards based on the results of the testing.

Homeowners should be cautioned against the import and use of certain fertilizers, soil amendments, and/or other soils from offsite sources in the absence of specific information relating to their chemical composition. Some fertilizers have been known to leach sulfate compounds into soils otherwise containing "negligible" sulfate concentrations and increase the sulfate concentrations in near-surface soils to "moderate" or "severe" levels. In some cases, concrete improvements constructed in soils containing high levels of soluble sulfates may be affected by deterioration and loss of strength.

Water - Natural and Man Induced

Water in concert with the reaction of various natural and man-made elements, can cause detrimental effects to your structure and surrounding property. Rain water and flowing water erodes and saturates the ground and changes the engineering characteristics of the underlying earth materials upon saturation. Excessive irrigation in concert with a rainy period is commonly associated with shallow slope failures and deep seated landslides, saturation of near structure soils, local ponding of water, and transportation of water soluble substances that are deleterious to building materials including concrete, steel, wood, and stucco.

Water interacting with the near surface and subsurface soils can initiate several other potentially detrimental phenomena other then slope stability issues. These may include expansion/contraction cycles, liquefaction potential increase, hydro-collapse of soils, ground surface settlement, earth material consolidation, and introduction of deleterious substances.

The homeowners should be made aware of the potential problems which may develop when drainage is altered through construction of retaining walls, swimming pools, paved walkways and patios. Ponded water, drainage over the slope face, leaking irrigation systems, over-watering or other conditions which could lead to ground saturation must be avoided.

- Before the rainy season arrives, check and clear roof drains, gutters and down spouts of all accumulated debris. Roof gutters are an important element in your arsenal against rain damage. If you do not have roof gutters and down spouts, you may elect to install them. Roofs, with their, wide, flat area can shed tremendous quantities of water. Without gutters or other adequate drainage, water falling from the eaves collects against foundation and basement walls.
- Make sure to clear surface and terrace drainage ditches, and check them frequently during the rainy season. This task is a community responsibility.
- Test all drainage ditches for functioning outlet drains. This should be tested with a hose and done before the rainy season. All blockages should be removed.
- Check all drains at top of slopes to be sure they are clear and that water will not overflow the slope itself, causing erosion.
- Keep subsurface drain openings (weep-holes) clear of debris and other material which could block them in a storm.
- Check for loose fill above and below your property if you live on a slope or terrace.
- Monitor hoses and sprinklers. During the rainy season, little, if any, irrigation is required. Oversaturation of the ground is unnecessary, increases watering costs, and can cause subsurface drainage.
- Watch for water backup of drains inside the house and toilets during the rainy season, as this may indicate drain or sewer blockage.
- Never block terrace drains and brow ditches on slopes or at the tops of cut or fill slopes. These are designed to carry away runoff to a place where it can be safely distributed.
- Maintain the ground surface upslope of lined ditches to ensure that surface water is collected in the ditch and is not permitted to be trapped behind or under the lining.
- Do not permit water to collect or pond on your home site. Water gathering here will tend to either seep into the ground (loosening or expanding fill or natural ground), or will overflow into the slope and begin erosion. Once erosion is started, it is difficult to control and severe damage may result rather quickly.
- Never connect roof drains, gutters, or down spouts to subsurface drains. Rather, arrange them so that water either flows off your property in a specially designed pipe or flows out into a paved driveway or street. The water then may be dissipated over a wide surface or, preferably, may be carried away in a paved gutter or storm drain. Subdrains are constructed to take care of ordinary subsurface water and cannot handle the overload from roofs during a heavy rain.
- Never permit water to spill over slopes, even where this may seem to be a good way to prevent ponding. This tends to cause erosion and, in the case of fill slopes, can eat away carefully designed and constructed sites.

- Do not cast loose soil or debris over slopes. Loose soil soaks up water more readily than compacted fill. It is not compacted to the same strength as the slope itself and will tend to slide when laden with water; this may even affect the soil beneath the loose soil. The sliding may clog terrace drains below or may cause additional damage in weakening the slope. If you live below a slope, try to be sure that loose fill is not dumped above your property.
- Never discharge water into subsurface blanket drains close to slopes. Trench drains are sometimes used to get rid of excess water when other means of disposing of water are not readily available. Overloading these drains saturates the ground and, if located close to slopes, may cause slope failure in their vicinity.
- Do not discharge surface water into septic tanks or leaching fields. Not only are septic tanks constructed for a different purpose, but they will tend, because of their construction, to naturally accumulate additional water from the ground during a heavy rain. Overloading them artificially during the rainy season is bad for the same reason as subsurface subdrains, and is doubly dangerous since their overflow can pose a serious health hazard. In many areas, the use of septic tanks should be discontinued as soon as sewers are made available.
- Practice responsible irrigation practices and do not over-irrigate slopes. Naturally, ground cover of ice plant and other vegetation will require some moisture during the hot summer months, but during the wet season, irrigation can cause ice plant and other heavy ground cover to pull loose. This not only destroys the cover, but also starts serious erosion. In some areas, ice plant and other heavy cover can cause surface sloughing when saturated due to the increase in weight and weakening of the near-surface soil. Planted slopes should be planned where possible to acquire sufficient moisture when it rains.
- Do not let water gather against foundations, retaining walls, and basement walls. These walls are built to withstand the ordinary moisture in the ground and are, where necessary, accompanied by subdrains to carry off the excess. If water is permitted to pond against them, it may seep through the wall, causing dampness and leakage inside the basement. Further, it may cause the foundation to swell up, or the water pressure could cause structural damage to walls.
- Do not try to compact soil behind walls or in trenches by flooding with water. Not only is flooding the least efficient way of compacting fine-grained soil, but it could damage the wall foundation or saturate the subsoil.
- Never leave a hose and sprinkler running on or near a slope, particularly during the rainy season. This will enhance ground saturation which may cause damage.
- Never block ditches which have been graded around your house or the lot pad. These shallow ditches have been put there for the purpose of quickly removing water toward the driveway, street or other positive outlet. By all means, do not let water become ponded above slopes by blocked ditches.
- Seeding and planting of the slopes should be planned to achieve, as rapidly as possible, a well-established and deep-rooted vegetal cover requiring minimal watering.

- It should be the responsibility of the landscape architect to provide such plants initially and of the residents to maintain such planting. Alteration of such a planting scheme is at the resident's risk.
- The resident is responsible for proper irrigation and for maintenance and repair of properly installed irrigation systems. Leaks should be fixed immediately. Residents must undertake a program to eliminate burrowing animals. This must be an ongoing program in order to promote slope stability. The burrowing animal control program should be conducted by a licensed exterminator and/or landscape professional with expertise in hill side maintenance.

Geotechnical Review

Due to the presence of an adjacent descending slope, potential for expansive soils on site, and the fact that soil types may vary with depth, it is recommended that plans for the construction of rear yard improvements (swimming pools, spas, barbecue pits, patios, etc.), be reviewed by a geotechnical engineer who is familiar with local conditions and the current standard of practice in the vicinity of your home.

In conclusion, your neighbor's slope, above or below your property, is as important to you as the slope that is within your property lines. For this reason, it is desirable to develop a cooperative attitude regarding hillside maintenance, and we recommend developing a "good neighbor" policy. Should conditions develop off your property, which are undesirable from indications given above, necessary action should be taken by you to insure that prompt remedial measures are taken. Landscaping of your property is important to enhance slope and foundation stability and to prevent erosion of the near surface soils. In addition, landscape improvements should provide for efficient drainage to a controlled discharge location downhill of residential improvements and soil slopes.

Additionally, recommendations contained in the Geotechnical Engineering Study report apply to all future residential site improvements, and we advise that you include consultation with a qualified professional in planning, design, and construction of any improvements. Such improvements include patios, swimming pools, decks, etc., as well as building structures and all changes in the site configuration requiring earth cut or fill construction.

PRELIMINARY GRADING PLAN
TYLER STREET PROJECT

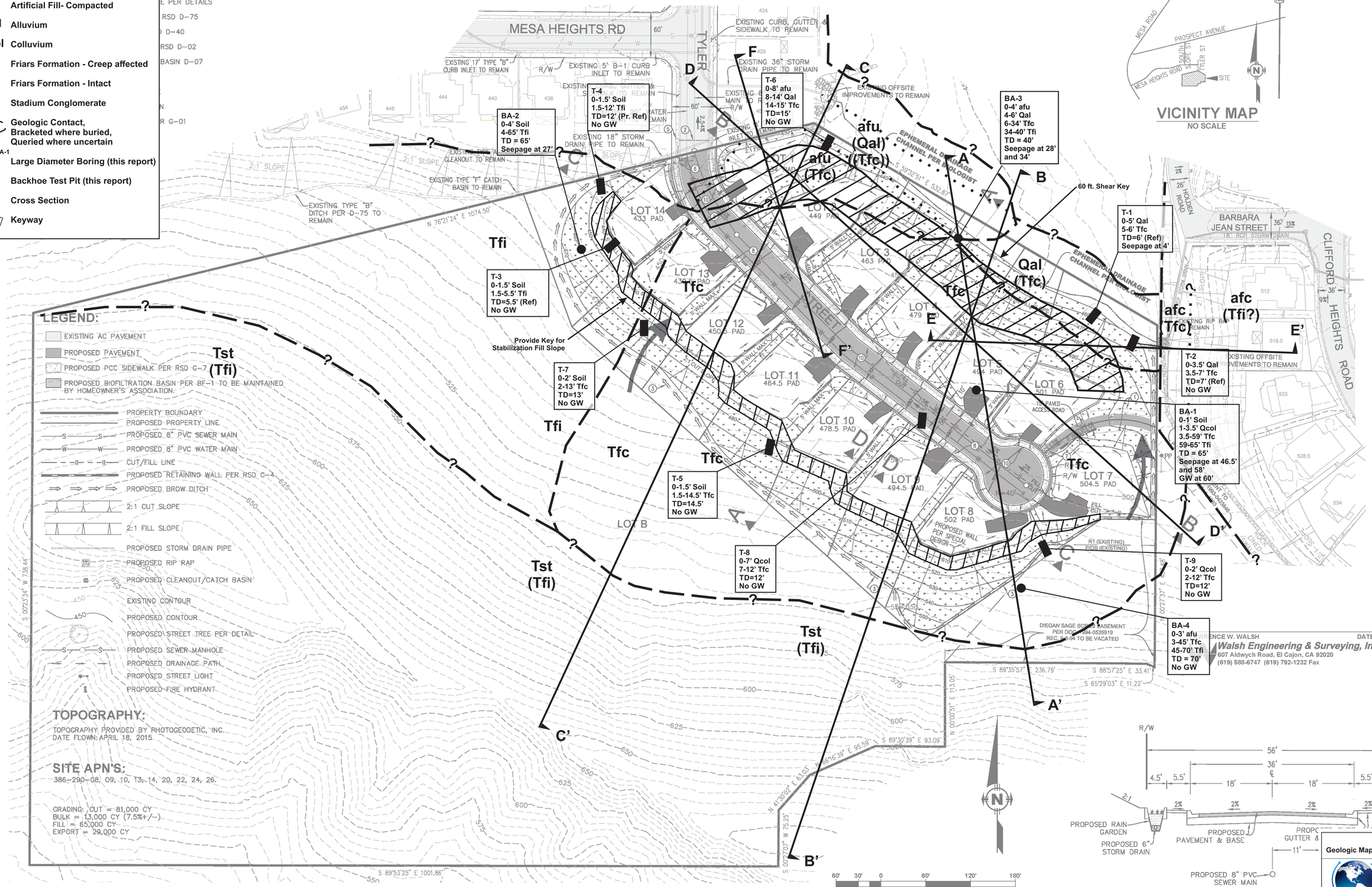

PLATE 1
Geologic Map and Exploration Location Plan

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1310-04	1310-04-B-2R	March 2019

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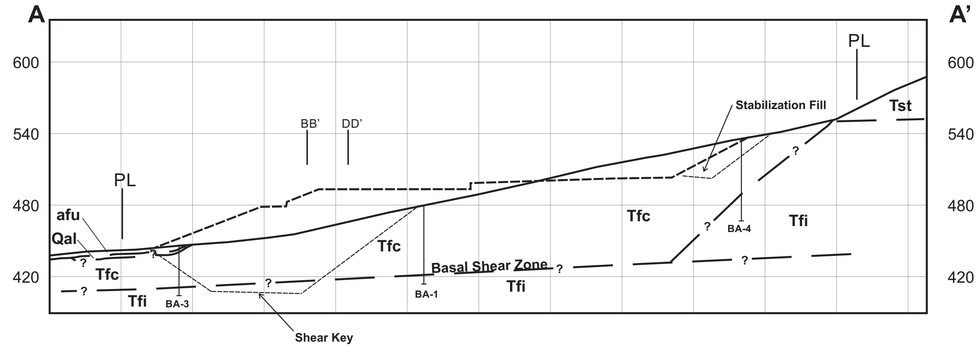

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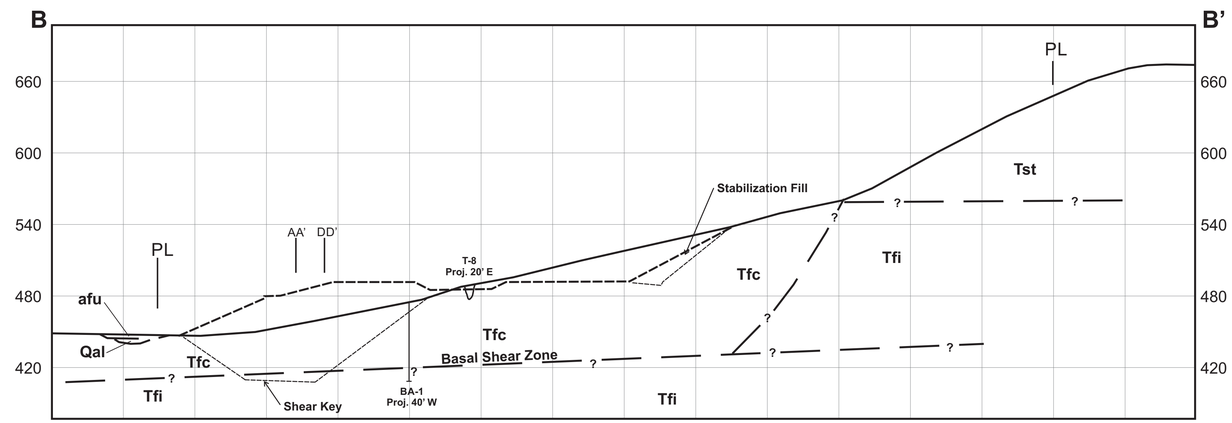

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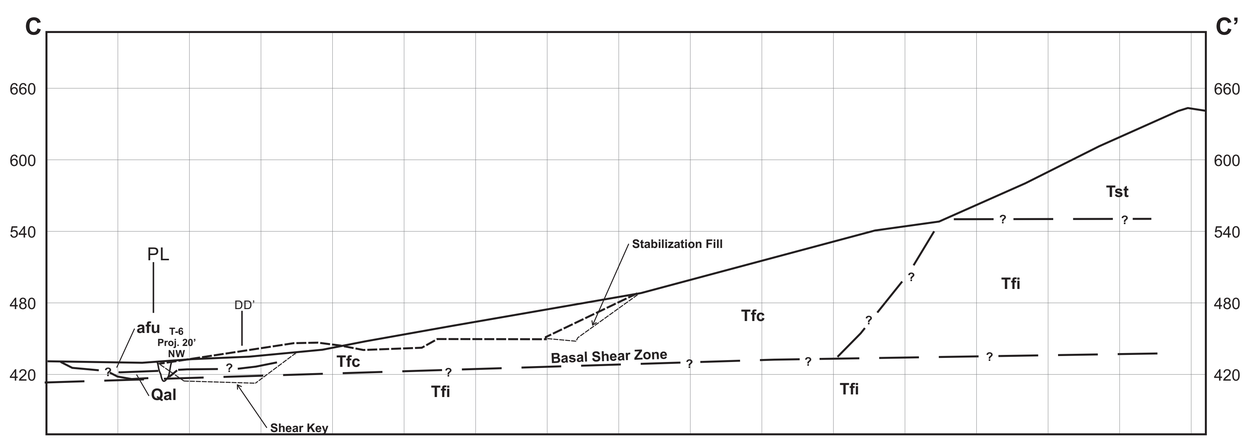


Cross Section CC'
Scale: 1"=60'

LEGEND:

- Existing Grade
- Proposed Grade
- Approximate Location of Geologic Contact; Queried where Uncertain

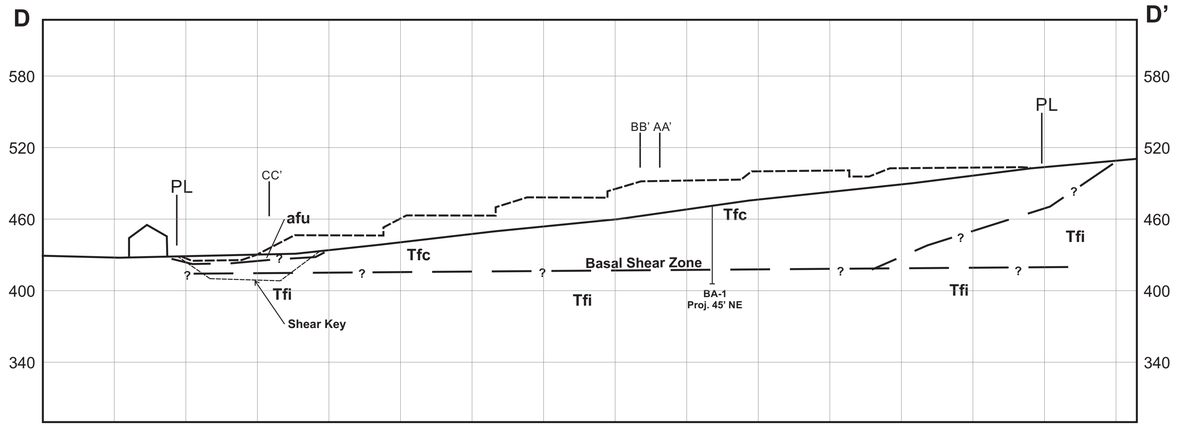
afu	Artificial Fill - Undocumented
afc	Artificial Fill - Compacted
Qal	Alluvium
Qcol	Colluvium
Tfc	Friars Formation - Creep Affected
Tfi	Friars Formation - Intact
Tst	Stadium Conglomerate

PLATE 2
Geologic Cross Sections AA'-CC'

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1310-04	1310-04-B-2R	March 2019

*See Plate 2 for Legend



Cross Section DD'
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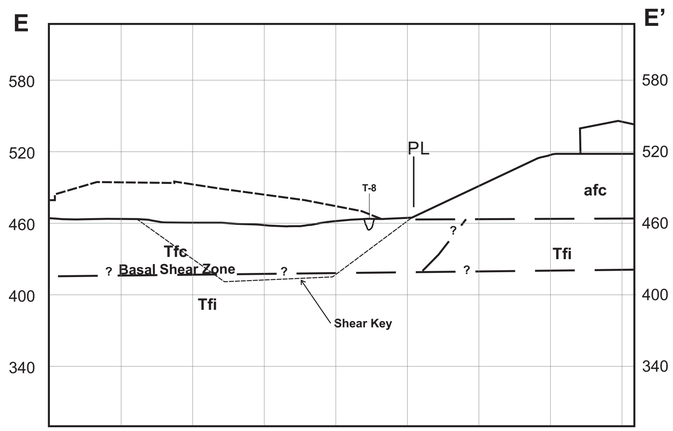

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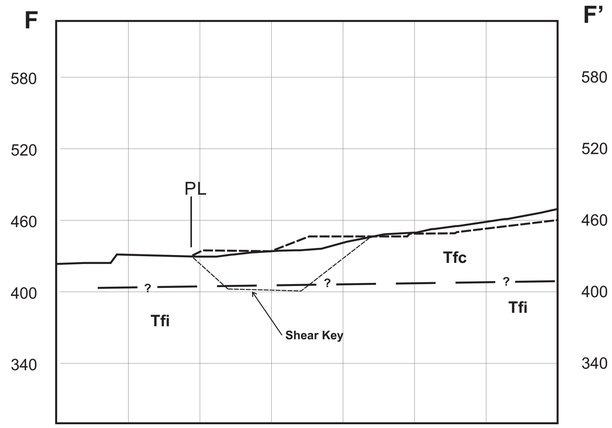

Cross Section FF'
Scale: 1"=60'

PLATE 3
Geologic Cross Sections DD'-FF'

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1310-04	1310-04-B-6	March 2019

APPENDIX F

Fire Protection Plan

Tyler Street Residential Development Project Santee, California

APRIL 2022

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Printed on 30% post-consumer recycled material.

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I OSFM Approved Vulcan - Listing_2192:0100

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AMSL	Above Mean Sea Level
BTU	British Thermal Unit
CAL FIRE	California Department of Forestry and Fire Protection
CBC	California Building Code
CEQA	California Environmental Quality Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CSA	County Service Area
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
IFC	International Fire Code
LRA	Local Responsibility Area
MPH	Miles Per Hour
NFPA	National Fire Protection Association
PDMWD	Padre Dam Municipal Water District
Project	Tyler Street 14-lot Residential Development Project
SFD	Santee Fire Department
SRA	State Responsibility Area
USGS	United States Geological Survey
VHFHSZ	Very High Fire Hazard Severity Zone
WUI	Wildland Urban Interface

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Executive Summary

This Fire Protection Plan (FPP) has been prepared for the Tyler Street 14-Lot Residential Development Project (Project) within the City of Santee, San Diego County, California. The purpose of this plan is to generate and memorialize the fire safety requirements of the City of Santee along with project-specific measures based on the site, its intended use, and its fire environment. This FPP provides measures for fire protection that meet, and in some areas 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 evaluates and identifies the potential fire risk associated with the Project's land uses and identifies requirements for water supply, fuel modification and defensible space, emergency access, building ignition and fire resistance, fire protection systems, and wildfire emergency pre-planning, among other pertinent fire protection criteria. The primary focus of this FPP is providing 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 site includes the subdivision of an approximately 27.35-acre parcel into 14 detached single-family residential home lots. The entirety of the Tyler Street Project site lies within the local responsibility area (LRA) Very High Fire Hazard Severity Zone (VHFHSZ), as designated by the SFD and CAL FIRE. Therefore, the requirements in Chapter 7A of the California Building Code (CBC) will be implemented for this development and the proposed fire protection measures for the Project will meet or under certain circumstances, exceed all applicable fire and building codes requirements, including Santee's Ordinance 570, chapter 11.18. The area is provided fire protection by Santee Fire Department (SFD). 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 7A 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. The site's fire hardened structures would be complemented by an 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.

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 standard of 100-foot-wide fuel modification zones (FMZs) would be appropriate for portions of the Proposed Project. The Project will be exposed to naturally-vegetated pockets of open space to the north, as well as to the west, south, southeast, and east, however, the northern and northeastern portions of the Project development will be directly adjacent to an existing residential community. Approximately 1,800 feet east

of the Project site is I-125 and another existing residential community, and approximately 2,600 feet south of the Project site is the Grossmont College Campus. FMZs will be provided around all new single-family development lots within the Project development that are adjacent to open space areas. All dwelling units on the Project site will be highly ignition resistant based on required construction design, materials, and methods. However, there are seven lots that cannot achieve a full 100 feet of FMZ on the Project property for various reasons, including property boundary constraints (Lots 1 through 3), being adjacent to an open space easement area (Diegan Sage Scrub Easement per document 1994-0535919 recorded 9-8-94) for the Diegan coastal sage scrub located in the southeastern portion of the Project site (adjacent to Lots 7 and 8), or an ephemeral drainage channel abuts the northeastern portion of Lots 1 through 5.

Fire hazard designations are based on topography, vegetation, and weather, amongst other factors with more hazardous sites including steep terrain, unmaintained fuels/vegetation, and WUI locations. The Project site and adjacent open space areas primarily support Diegan coastal sage scrub and pockets of non-native grasslands. Related to on-site fire risk, the growth of vegetation types/fuels models is influenced by aspect (orientation), soil constituents, soil depth, soil moisture, and weather. The vegetation occurring adjacent to the southern and western borders of the property represents the greatest potential fire threat. With that said, an open space easement (Diegan Sage Scrub Easement per document 1994-0535919 recorded 9-8-94) for the Diegan coastal sage scrub located in the southeastern portion of the Project site (adjacent to Lots 7 and 8) has been obtained and requires this area to stay in its natural state. However, in order to create the necessary fuel modification around Lots 7 and 8, the Project shall be utilizing the existing easement to conduct irrigation and thinning within the Diegan sage scrub area, and a mitigation program shall be put in place to replace the sensitive habitat that is removed. Additionally, an ephemeral drainage channel abuts the northeastern portion of the Project site (adjacent to Lots 1 through 6) and an open space easement has been obtained. The area, like all of San Diego County, is subject to seasonal weather conditions that can heighten the likelihood of fire ignition and spread, and, considering the site's terrain and vegetation, may result in fast moving and moderate-intensity wildfire.

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 Tyler Street Project would be maintained in perpetuity by the homeowner and the Project's Homeowner's Association (HOA). Maintenance would occur throughout the year and would be monitored and enforced by the HOA. The property owner would obtain an FMZ inspection and report from a qualified SFD-approved 3rd party inspector in May of each year certifying that vegetation management activities throughout the Project Site have been performed pursuant to this Letter Report, including verifying that wood bark and other combustible mulches shall not be used within the first 5 feet from the homes. A copy of the annual inspection report would be provided to the Proposed Project HOA and a copy made available to SFD, if requested.

This document provides an analysis of the site's fire environment and its potential impact on the Project as well as the Project's potential impact on the existing fire protection service in the area. Requirements and recommendations herein are based on site-specific fire environment and Project characteristics and incorporate input from the SFD, local fire personnel, area fire planning documents, site risk analysis, and standard principles of fire protection planning.

Fire service would be provided by the SFD. The anticipated Project population and number of calculated emergency calls would minimally affect the response capabilities of SFD's nearest existing station(s). The calls from the Project would not be responded to within the City's response time goals of six-minutes overall response time standard (four minutes travel time) from existing stations (City's General Plan). The closest existing Santee Fire Station can be on

site within 4 minutes and 30 seconds minutes travel time, which is consistent with National Fire Protection Association (NFPA) 1710 standard.

As determined during the analysis of this site and its fire environment, the proposed 14 detached, single-family residential development Project, in its current undeveloped condition, is considered to include characteristics that, under favorable conditions, have the potential to facilitate fire spread. Under extreme conditions, wildfires originating in the adjacent mountain side could burn erratically and aggressively and result in significant ember production. Once the Project is constructed, the on-site fire potential will be significantly lower than its current condition due to conversion of areas of wildland fuels to managed landscapes, fuel modification areas, improved accessibility to firefighting personnel and equipment, and new structures built to the latest ignition resistant codes. However, it is anticipated that fire will occasionally encroach upon the Project site and subject its structures to wildfire. This FPP contemplates wildfire encroachment and provides specific requirements that will minimize the potential for structural damage.

Early evacuation for any type of wildfire emergency near the Project Site is the preferred method of providing for resident safety, consistent with the City's current approach. As such, each property owner will be individually responsible to adopt, practice, and implement a "Ready, Set, Go!" model, which is that is widely known and encouraged by the state of California and most fire agencies. Pre-planning for emergencies, including wildfire emergencies, focuses on being prepared, having a well-defined plan, minimizing potential for errors, maintaining the site's fire protection systems, and implementing a conservative (evacuate as early as possible) approach to evacuation and site uses during periods of fire weather extremes.

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1 Introduction

This Fire Protection Plan has been prepared for the proposed Tyler Street 14-Lot residential development Project in the City of Santee (City) of San Diego County (County), California. Preparation of this FPP has been required for the Project by the Santee Fire Department (SFD). The purpose of this FPP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. This FPP provides specific measures for fire protection which meet or provide equivalent protection as 2019 California Fire and ignition-resistant Building Codes. It also identifies the fire risk associated with proposed land uses, and identifies requirements for fuel modification, building design and construction, and other pertinent development infrastructure criteria for fire protection. The purpose of this plan is to generate and memorialize the fire safety requirements of the Fire Authority Having Jurisdiction (FAHJ), namely the SFD. These requirements are based on site-specific characteristics and incorporate input from the Project's developer/applicant, planners, engineers, and architects, fire protection planners, as well as the City.

As part of the assessment, this fire protection plan has considered the property location, topography, surrounding combustible vegetation (fuel types), climatic conditions, and fire history. This FPP also addresses water supply, access, structural ignitability and fire resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. Further, this plan identifies fuel modification zones and recommends the types and methods of treatment that will protect the Project's homeowners and essential infrastructures. The FPP recommends measures that the property owner, developer, and builders will implement to reduce the probability of ignition to the structures throughout the area addressed by the plan.

The following tasks were performed toward completion of this plan:

Gather Project site specific climate, terrain, and fuel data.

Collect Project site photographs.

Process and analyze the data using the latest Geographical Information System (GIS) technology.

Predict fire behavior using scientifically based fire behavior models, comparisons with actual wildfires in similar terrain and fuels, and experienced judgment.

Analyze and guide design of proposed infrastructure.

Analyze the existing SFD emergency response capabilities and potential impacts from the Proposed Project.

Evaluating regional firefighting ad emergency medical resources.

Assess the risk associated with the Project and the Project site;

Analyzing the latest fire safety research and after-fire lessons learned; and

- Prepare this FPP detailing how fire risk will be mitigated through a system of fuel modification, homeowner education, structural ignition resistance enhancements, and fire protection delivery system upgrades.

Field observations were utilized to augment existing digital on-site data in generating the fire behavior models and formulating the recommendations presented in this FPP. Refer to Appendix A for Project site photographs of existing on-site conditions.

1.1 Intent

The intent of this FPP is to provide fire planning guidance and requirements for reducing fire risk and demand for fire protection services associated with the Project. To that end, the fire protection "system" detailed in this FPP includes redundant layering of measures, including pre-planning, fire prevention, fire protection, passive and active suppression, and related measures proven to reduce fire risk. The fire protection system planned for the Project has proven, through real-life wildfire encroachment examples throughout Southern California, to reduce the fire risk associated with this type of commercial development.

1.2 Applicable Codes and Existing Regulations

This FPP demonstrates compliance 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 Fire Code (CFC), Chapter 49, the 2019 California Building Code (CBC), Chapter 7A, 2019 California Referenced Standard Code Chapter 1-7A, and 2019 California Residential Code, Section R327 as adopted by the City of Santee. Additionally, the Proposed Project will comply with the applicable adopted codes in place at the time of construction.

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. 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 a 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 wildfire.

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 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 CBC (Chapter 7-A, Section 701A Scope, Purpose and Application; California Building Standards Commission 2019).

1.3 Tyler Street 14-Lot Residential Project Summary

1.3.1 Project Location

As depicted in Figure 1, Project Location Map, the Tyler Street 14-Lot residential Project is located in an area that is within the Santee City limits in what can be describes as southwestern Santee, approximately one mile

east/northeast of Cowles Mountain, a prominent mountain within the City limits of San Diego and also within the Mission Trails Regional Park and west of State Route 125 (SR-125). More specifically, the Project extends from the terminus of Tyler Street, which is accessed from Prospect Avenue and Mesa Heights Road, where Tyler Street will be extended to be the new public street providing access to the 14-lot subdivision. The Project site is located in Sections 32, Township 15 South, Range 1 West on the U.S. Geographical Survey (USGS), 7.5-minute Santee quadrangle map.

1.3.2 Tyler Street 14-Lot Residential Project Description

The proposed Project, currently named the Tyler Street 14-Lot Residential Project is located at the terminus of Tyler Street, in southwestern Santee, and consists of nine existing individually owned lots comprising of approximately 27.35 acres of land. The lot is currently vacant and is adjacent to open space areas primarily support Diegan coastal sage scrub and pockets of non-native grasslands. The area of development is generally flat with a north-facing hillside along the southern and western borders if the property, which represents the greatest potential fire threat. Elevations range from approximately 425 feet above mean sea level (amsl) at the northern portion of the project site to 673 feet amsl at the peak of the mountain rage southeast of the development.

The Project site is bordered on the north and portions of the east by existing residential neighborhoods accessed off Prospect Avenue and State Route 125 (SR-125) farther east; on the west by existing residential homes and Cowles Mountain, a prominent mountain within the City limits of San Diego and also within the Mission Trails Regional Park farther west; and open space, naturally vegetated areas south of the Project site with Grossmont College farther south.

The Project proposes a total of 14 detached, single-family home lots on approximately 6.67 acres (refer to Figure 2, Tyler Street Preliminary Grading Plan). The remaining, eastern 20.68 acres will be left as natural open space. Lot sizes will be varied, with a minimum lot size of 15,000 square feet and up to 27,197 square feet. The Project is accessed by Tyler Street via Prospect Avenue and Mesa Heights Road to the north. The Tyler Street road extension will be an approximately 650-foot dead-end, 36-foot wide roadway with two 10-foot wide sidewalks on each side.

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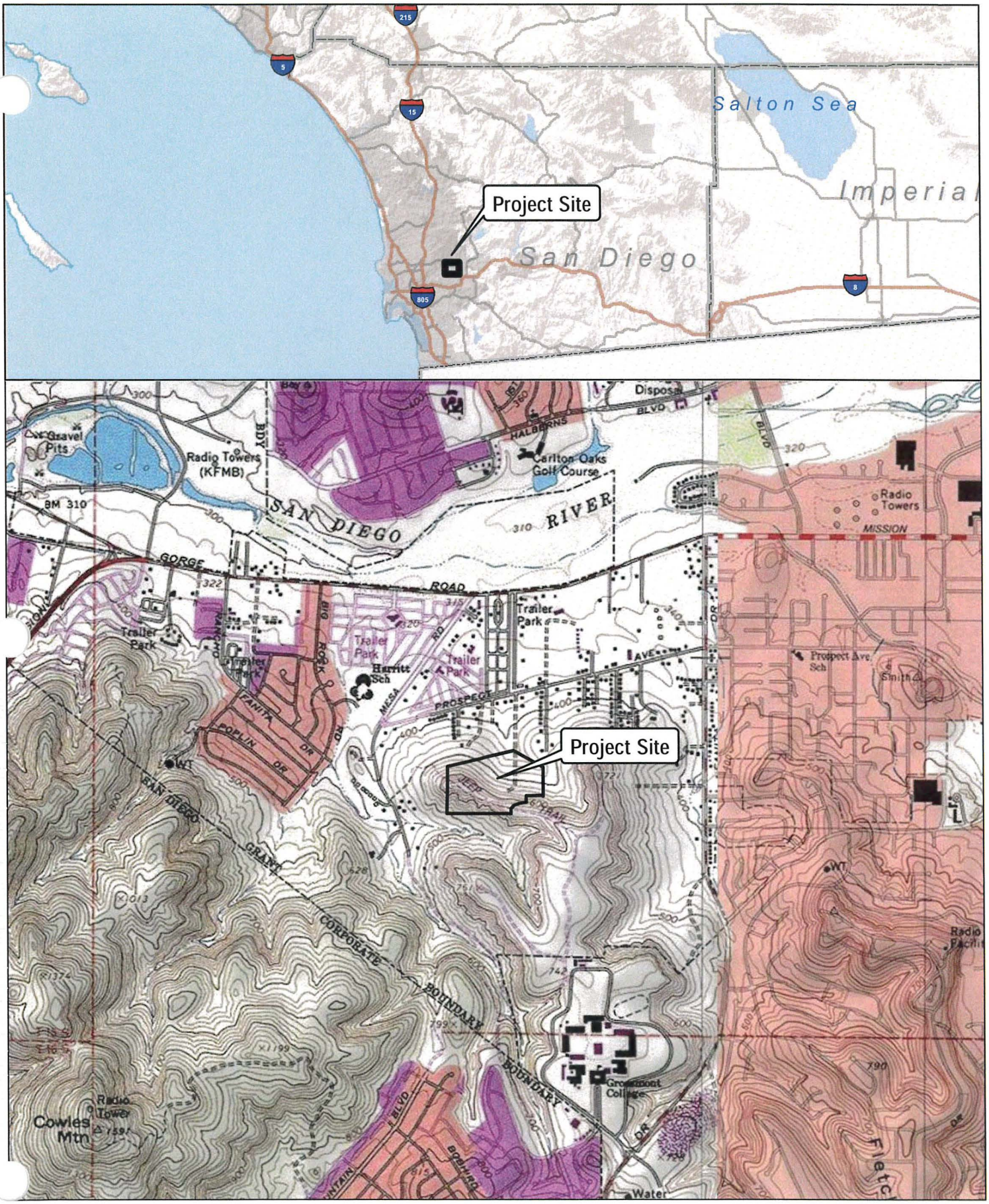

SOURCE: USGS 7.5 Minute Series. La Mesa Quadrangle
Township 15 South, Range 1 West, Section 32

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Tyler Street Fire Protection Plan

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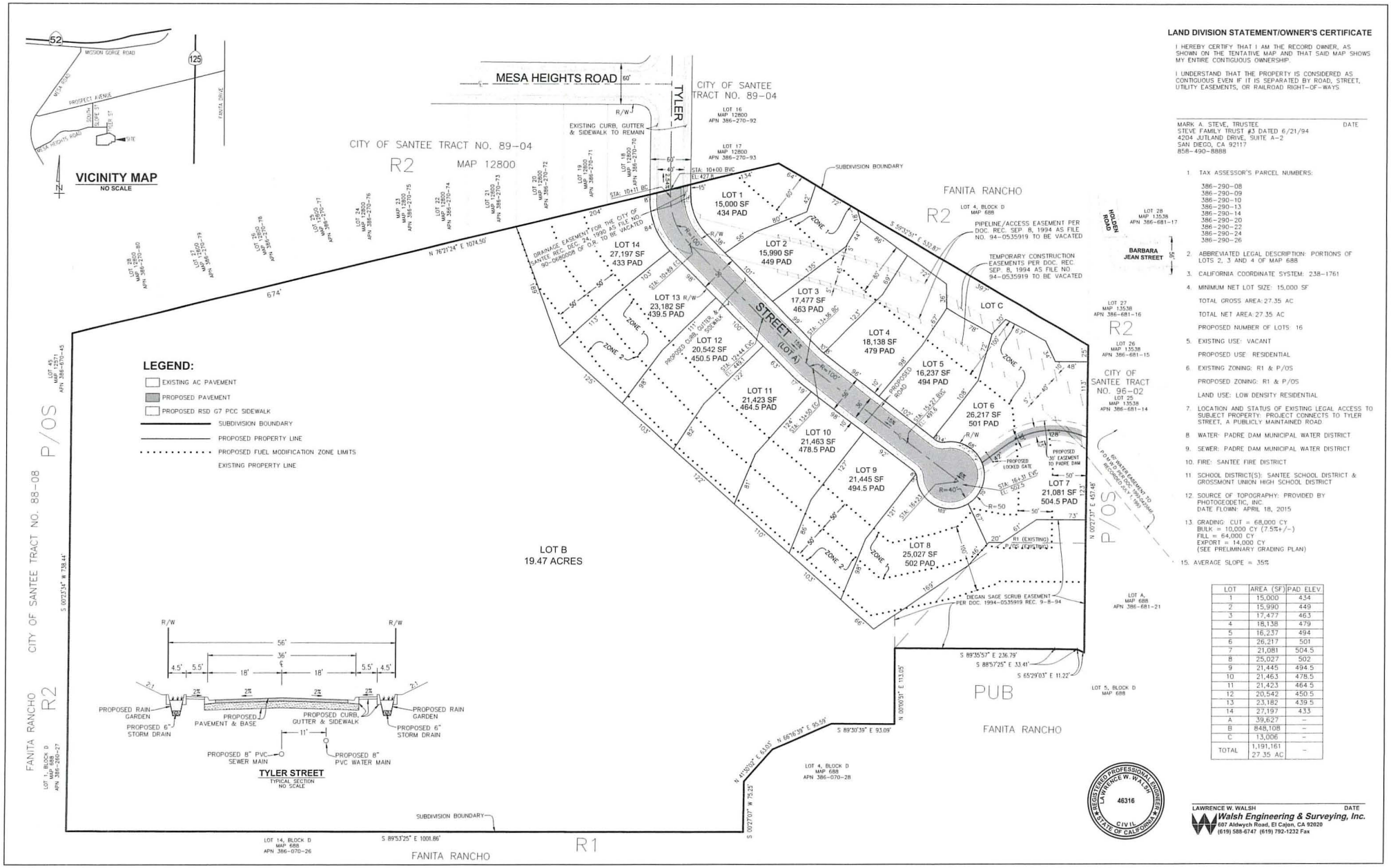

LAND DIVISION STATEMENT/OWNER'S CERTIFICATE

I HEREBY CERTIFY THAT I AM THE RECORD OWNER, AS SHOWN ON THE TENTATIVE MAP AND THAT SAID MAP SHOWS MY ENTIRE CONTIGUOUS OWNERSHIP.

I UNDERSTAND THAT THE PROPERTY IS CONSIDERED AS CONTIGUOUS EVEN IF IT IS SEPARATED BY ROAD, STREET, UTILITY EASEMENTS, OR RAILROAD RIGHT-OF-WAYS

MARK A. STEVE, TRUSTEE — DATE
STEVE FAMILY TRUST #3 DATED 6/21/94
4204 JUTLAND DRIVE, SUITE A-2
SAN DIEGO, CA 92117
858-490-8888

1. TAX ASSESSOR'S PARCEL NUMBERS:
   386-290-08
   386-290-09
   386-290-10
   386-290-13
   386-290-14
   386-290-20
   386-290-22
   386-290-24
   386-290-26
2. ABBREVIATED LEGAL DESCRIPTION: PORTIONS OF LOTS 2, 3 AND 4 OF MAP 688
3. CALIFORNIA COORDINATE SYSTEM: 238-1761
4. MINIMUM NET LOT SIZE: 15,000 SF
   TOTAL GROSS AREA: 27.35 AC
   TOTAL NET AREA: 27.35 AC
   PROPOSED NUMBER OF LOTS: 16
5. EXISTING USE: VACANT
   PROPOSED USE: RESIDENTIAL
6. EXISTING ZONING: R1 & P/OS
   PROPOSED ZONING: R1 & P/OS
   LAND USE: LOW DENSITY RESIDENTIAL
7. LOCATION AND STATUS OF EXISTING LEGAL ACCESS TO SUBJECT PROPERTY: PROJECT CONNECTS TO TYLER STREET, A PUBLICLY MAINTAINED ROAD
8. WATER: PADRE DAM MUNICIPAL WATER DISTRICT
9. SEWER: PADRE DAM MUNICIPAL WATER DISTRICT
10. FIRE: SANTEE FIRE DISTRICT
11. SCHOOL DISTRICT(S): SANTEE SCHOOL DISTRICT & GROSSMONT UNION HIGH SCHOOL DISTRICT
12. SOURCE OF TOPOGRAPHY: PROVIDED BY PHOTOGEODETIC, INC. DATE FLOWN: APRIL 18, 2015
13. GRADING: CUT = 68,000 CY
    BULK = 10,000 CY (7.5%+/-)
    FILL = 64,000 CY
    EXPORT = 14,000 CY
    (SEE PRELIMINARY GRADING PLAN)
15. AVERAGE SLOPE = 35%

LOT	AREA (SF)	PAD ELEV
1	15,000	434
2	15,990	449
3	17,477	463
4	18,138	479
5	16,237	494
6	26,217	501
7	21,081	504.5
8	25,027	502
9	21,445	494.5
10	21,463	478.5
11	21,423	464.5
12	20,542	450.5
13	23,182	439.5
14	27,197	433
A	39,627	–
B	848,108	–
C	13,006	–
TOTAL	1,191,161 27.35 AC	–

LAWRENCE W. WALSH — DATE
Walsh Engineering & Surveying, Inc.
607 Aldwych Road, El Cajon, CA 92020
(619) 588-6747 (619) 792-1232 Fax

SOURCE: WALSH ENGINEERING 2022

FIGURE 2
Preliminary Grading Plan
Tyler Street Fire Protection Plan

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2 Proposed Project Site Risk Analysis

2.1 Environmental Setting and Field Assessment

After review of available digital Study Area information, including topography, vegetation types, fire history, and the Project's Development Footprint, a Dudek Fire Protection Planner conducted a Project site evaluation on October 7, 2019, in order to confirm/acquire Project site information, document existing on-site conditions, and to determine potential actions for addressing the protection of the Project's structures. While on-site, Dudek's Fire Planner 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.
- Photograph documentation of the existing condition.
- Confirmation/verification of hazard assumptions.
- Off-site, adjacent property fuel and topography conditions.
- Surrounding land use confirmations.
- Necessary fire behavior modeling data collection.
- Ingress/egress documentation.
- Nearby Fire Station reconnaissance.

Study Area photographs were collected (refer to Appendix A, *Representative Site Photographs*), and fuel conditions were mapped using aerial images. Field observations were utilized to augment existing on-site data in generating the fire behavior models and formulating the requirements and recommendations detailed in the FPP.

2.2 Project Site Characteristics and Fire Environment

Fire environments are dynamic systems and include many types of environmental factors and Project 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 Project site.

The following sections discuss the Project site characteristics, local climate, and fire history within and surrounding the Project site. The following sections discuss the characteristics of the Project site at a regional scale. The intent of evaluating conditions at this macro-scale is providing a better understanding of the regional fire environment, which is not constrained by property boundary delineations.

2.2.1 Topography

Topography influences fire risk by affecting fire spread rates. Typically, steep terrain results in faster fire spread up-slope and slower fire spread down-slope in the absence of wind. Terrain that forms a funneling effect, such as chimneys, chutes, and 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.

Topography of the Project site consists of relatively flat areas within the Proposed development area of the Project site to a moderate to steep rugged hillside to the west and south of the Project development site that could facilitate fire spread downslope towards the southern portion of the Project site. Slope gradients range from 5% to 32% and graded slopes are assumed to be 50% (2:1 manufactured slopes). Elevations range from approximately 425 feet above mean sea level (amsl) at the northern portion of the project site to 673 feet amsl at the peak of the mountain rage southeast of the development.

2.2.2 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 2019). 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 August is around 88°F. Precipitation typically occurs between November through April with an average of 11 inches of rain per year (Weather Spark, 2020). 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.

2.2.3 Vegetation

2.2.3.1 Fuels (Vegetation)

Extensive vegetation type mapping is useful for fire planning because it enables each vegetation community to be assigned a fuel model, which is used in a software program to predict fire behavior characteristics, as discussed in Section 3.1, Fire Behavior Modeling. Vegetation types, which were derived from the field assessment for the Project site, were classified into a fuel model. This value was used in the modeling analysis for the fuel type adjacent to the site. The majority of the slopes adjacent to the site are vegetated with annual grasses and Coastal sage scrub. Based on the location of modeling scenarios, a Scott and Burgan (2005) fuel model was assigned for the

BehavePlus fire behavior modeling run for existing conditions as follows: fuel model Sh5 (High Load, Dry Climate Shrub) for sage scrub and fuel model Gr2 (Low load, dry climate grass) for the grass field to the north. Fuel models were also assigned to the perimeter fuel modification zones to illustrate post-project fire behavior changes. An irrigated and replanted area (Fuel Modification Zone 1 – FM8) with fire resistive plants that are acceptable to the Santee Fire Department and an area that will include removal of dead, dying and exotic vegetation, and keeping the native vegetation intact and grasses to be cut less than 4-inches in height (Fuel Modification Zone 2 – Gs1) were modeled for post-development. Table 1 summarizes the fuel model characteristics used in the BehavePlus fire behavior modeling analysis. *Appendix A: Fuel Type Photo Series* provides representative photographs of the fuel types and plant spacing in each fire scenario.

2.2.3.2 Vegetative Fuel Dynamics

The vegetation characteristics described above are used to model fire behavior, discussed in Section 3.0 of this FPP. 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 coastal sage scrub and mixed chaparral plant communities on site are considered to 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 of fire behavior models discussed in the 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 shrublands to grasslands or maintain grasslands, while fire exclusion tends to convert grasslands to shrublands, over time. In general, biomass and associated fuel loading will increase over time, assuming that disturbance (fire, or grading) or fuel reduction efforts are not diligently implemented. It is possible to alter successional pathways for varying plant communities through manual alteration. This concept is a key component in the overall establishment and maintenance of the proposed fuel modification zones on-site. The Project's FMZs will consist of irrigated and maintained landscapes as well as thinned native fuel zones that will be subject to regular "disturbance" in the form of maintenance and will not be allowed to accumulate excessive biomass over time, which results in reduced fire ignition, spread rates, and intensity. In contrast, conditions outside the fuel modification zones, where the wildfire threat will exist post-development, are classified as medium to heavy fuel loads due to the maturity of the vegetation, which haven't burned for many decades.

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, most vulnerable areas, significant ignition sources, and vegetation/fuel mosaics across a given landscape. Fire frequency, behavior, and ignition sources are important for fire response and planning purposes. One important use for this information is as a tool for pre-planning. It is advantageous to

know which areas may have burned recently and therefore may provide a tactical defense position, what type of fire burned on the Project site, and how a fire may spread. In turn, this understanding of why fires occur in an area and how they typically spread can then be used for pre-planning and designing defensible communities. Appendix B, Fire History Map provides a graphical representation of the quantity of times the landscape has burned in the area

Fire history represented in the FPP uses the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP) database. FRAP summarizes fire perimeter data dating to the late 1800s, but which is incomplete due to the fact that it only includes 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.

According to available data from the CAL FIRE in the FRAP database (FRAP 2019)[1] the Tyler Street 14-lot Project site has not been subject to wildfire (CAL FIRE FRAP 2019), however, the nearest wildfires to the Tyler Street Project site includes an un-named 1944 fire and the 1981 Assist #59 fire (both located in the adjacent Cowles Mountain Range). The lack of recent fires does not suggest that fire cannot occur in the vegetation that will be adjacent to the Project. However, it does suggest that due to the physical landscape features, vegetation, and ignition sources, amongst other variables, fire starts are fewer and/or larger fires have been stopped before they spread into the area. Recorded wildfires within 5 miles range from 24.6 acres (1975 unnamed Fire) to 7,310.7 acres (1989 Assist #59 Fire).

2.2.5 Analysis of Wildfire Risk from Adding New Residents

Humans (i.e., human related activities or human created features, services, 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. 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) (Harris 2019; Dudek 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, are not associated with increased vegetation ignitions. Syphard and Keeley (2015) summarize all wildfire ignitions included in the CAL FIRE 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 power line fires. Ignitions classified as equipment caused frequently resulted from exhaust or sparks from power saws or other equipment with gas or electrical motors, such

1 Based on polygon GIS data from CAL FIRE's 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 1878–2019.

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 figures 3 through 5 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 riskthan 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 the Tyler Street Project site, dominated by older, more fire-vulnerable structures, constructed before stringent fire code requirements were imposed on residential development, with varying levels of maintained fuel modification buffers. As discussed in detail throughout this FPP, the Tyler Street Development 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 Tyler Street community would not be expected to materially increase the risk of vegetation ignitions.

Figure 3. 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.

Figure 4. 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.

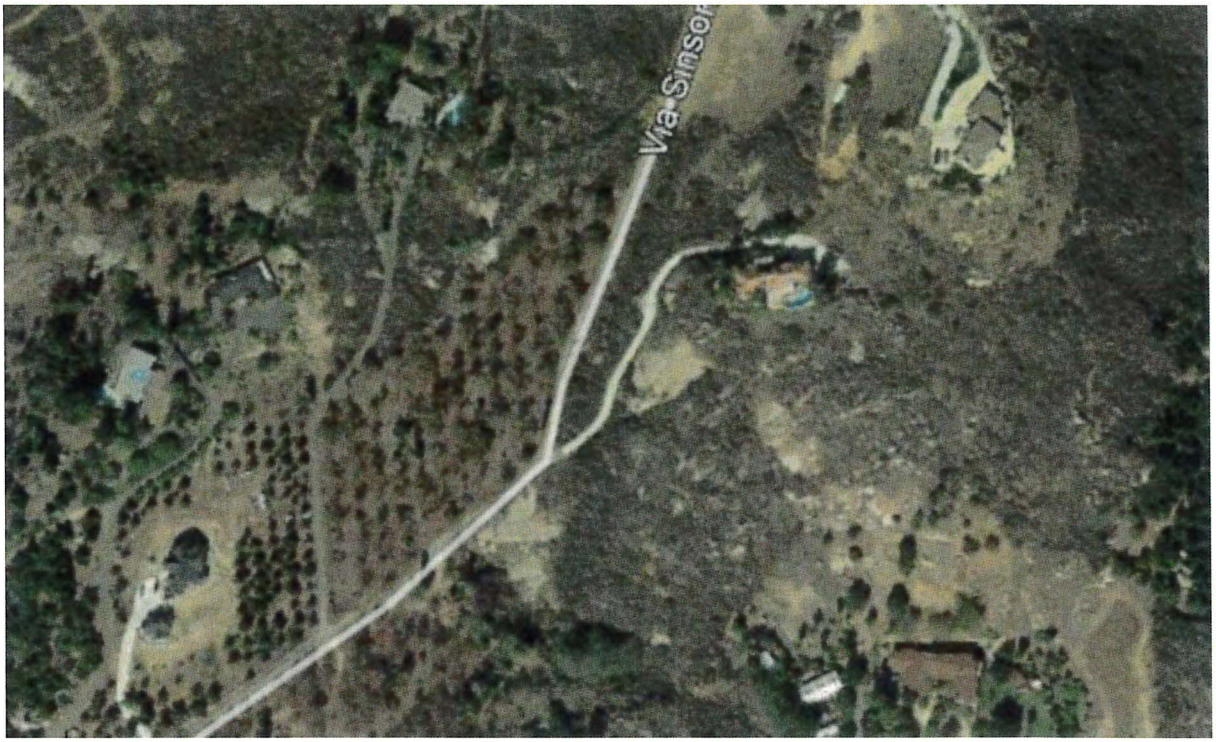

Figure 5. Example of "lower density" development where homes are interspersed amongst wildland fuels, are of varying ages, and include varying levels of fuel modification zone setbacks. Homes are exposed on most or all sides by flammable vegetation and properties rely solely on owners for maintenance, 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 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 fire spread, reduce the 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.

Trails exist today around the Tyler Street 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 Tyler Street 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 Tyler Street community with the ability to detect fires throughout the property. The quick detection and call to 911 would result in faster response from the closest SFD fire station, which can reach anywhere within the Project in under 5 minutes travel time. 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 Anticipated Fire Behavior

3.1 Fire Behavior Modeling

Following field data collection efforts and available data analysis, fire behavior modeling was conducted to document the type and intensity of the fire that would be expected adjacent to the Project site given characteristic site features such as topography, vegetation, and weather. Dudek utilized BehavePlus software package version 6 (Andrews, Bevins, and Seli 2008) to analyze potential fire behavior[2] for the wildland fuels to the north, south, southeast, and southwest of the Project site. As is customary for this type of analysis, four fire scenarios were evaluated, including three off-shore, wind-driven fires (Santa Ana conditions) approaching the northern, southern and southeastern property boundaries of the Project site and one on-shore, wind driven fire approaching the southwestern property boundary, with assumptions made for the pre-project slope and fuel conditions. The locations of the fire scenarios and summary of fire modeling inputs are presented in Figure 6, *BehavePlus Fire Behavior Analysis Map*. A summary of the fire behavior modeling runs for both pre-construction and post-construction are presented in Appendices C through E.

3.2 Fire Behavior Modeling Analysis Effort

An analysis utilizing the BehavePlus software package was conducted to evaluate fire behavior variables and to objectively predict flame lengths (feet), fireline intensities (BTU/feet/second), spotting distance (miles), and spread rates (feet/minute) for four modeling scenarios for the Tyler Street Development Project; these four fire scenarios incorporated observed fuel types representing the dominant on- and- off-site vegetation on vacant land adjacent to the proposed development, in addition to measured slope gradients, wind, and fuel moisture values derived from Remote Automated Weather Stations (RAWS) weather data sets (San Pasqual RAWS) for both the 50th percentile weather (on-shore winds) and the 97th percentile weather (off-shore winds). Modeling scenario locations were selected to better understand different fire behavior that may be experienced on or adjacent to the site.

To support the fire behavior modeling efforts conducted for this FPP, the different vegetation types observed on and adjacent to the Project site were classified into the aforementioned numeric fuel models. Dudek analyzed fire behavior for the fuels adjacent to/in close proximity to the property to the north, south, southwest, and southeast. As is customary for this type of analysis, the terrain and fuels within and adjacent to the project area were used for determining flame lengths and fire spread. It is these fuels that would have the potential to affect the project's structures from a radiant and convective heat perspective as well as from direct flame impingement. Fuel beds, including the intermix of coast sage scrub and mixed chaparral fuels (Fuel Model Sh5) with low load grass vegetation (Fuel Model Gr2) found within the development footprint and throughout the adjacent areas. These fuel types can produce flying embers that may affect the Project, but defenses have been built into the structure to prevent ember penetration. Table 1 provides a description of the two existing fuel models observed in the vicinity of the site that were subsequently used in the analysis for this project. A total of four fire modeling scenarios were completed for the Project area. These sites were selected based on the strong likelihood of fire approaching from these directions during a Santa Ana wind-driven fire event (fire scenarios 2 and 3) and an on-shore weather pattern (fire scenarios 1 and 4). Dudek also conducted modeling of the site for post-Fuel Modification Zones' (FMZ) recommendations for

[2] A summary of the fire behavior modeling runs for both pre-construction and post-construction are presented in Appendices C through E.

this project (Refer to Table 1 for post-FMZ fuel model descriptions). Fuel modification includes establishment of irrigated and thinned zones on the periphery of the residential lots as well as interior landscape requirements. For modeling the post-FMZ treatment condition, fuel model assignments were re-classified for the FMZ 1 (Fuel Model 8) and FMZ 2 (Fuel Model Gs1).

Table 1. Fuel Models Used for Fire Behavior Modeling

Fuel Model	Description	Location of Fuel Models	Fuel Bed Depth (Feet)
Existing Conditions			
Gr2	Low-load, dry climate grasses	Represented throughout the development areas and adjacent areas surrounding the Project site.	<2.0 ft.
Sh5	High Load Dry Climate Shrub	Represented throughout the development areas and adjacent areas surrounding the Project site.	<5.0 ft.
Post-Development Conditions			
FM8	Compact litter	Fuel Modification Zone 1 – irrigated, landscapes	<1.0 ft.
Gs1	Low load, Dry Climate Grass-Shrub	Fuel Modification Zone 2: removal of dead, dying, and exotic vegetation	<3.0 ft.

Table 2 summarizes the weather and wind input variables used in the BehavePlus modeling process.

Table 2. BehavePlus Fire Behavior Modeling Inputs

Model Variable	Summer Weather Condition (50th Percentile)	Peak Fall Weather Condition (97th Percentile)
Fuel Models	FM8, Gs1, and Sh5	FM8, Gs1, Gr2, and Sh5
1-hour fuel moisture	3%	2%
10-hour fuel moisture	6%	3%
100-hour fuel moisture	8%	5%
Live herbaceous moisture	60%	30%
Live woody moisture	90%	60%
20 ft. wind speed	19 mph (sustained winds)	18 mph[1] (sustained winds); wind gusts of 50 mph
Wind adjustment factor	0.4	0.4
Slope (uphill)	27%	5 to 32%

Note:
[1] mph= Miles per hour

3.3 Fire Behavior Modeling Results

The results of fire behavior modeling analysis for pre- and post-Project conditions are presented in Table 3 and Table 4, respectively. Identification of modeling run (fire scenarios) locations is presented graphically in Figure 6, *BehavePlus Fire Behavior Analysis Map*.

As presented, wildfire behavior on the Project site is expected to be primarily of moderate to high intensity throughout the non-maintained shrubs and chaparrals intermixed with surface grass dominated fuels throughout the perimeter areas of the Project site. As mentioned, the BehavePlus fire behavior modeling software package was utilized in evaluating anticipated fire behavior adjacent to the Proposed Project site. Four focused analyses were completed for both the existing project site conditions and the post project conditions, each assuming worst-case fire weather conditions for a fire approaching the project site from the north, south, southwest, and southeast. The results of the modeling effort included anticipated values for surface fires flame length (feet), rate of spread (mph), fireline intensity (Btu/ft/s), and spotting distance (miles). The aforementioned fire behavior variables are an important component in understanding fire risk and fire agency response capabilities. 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). Fireline intensity is a measure of heat output from the flaming front, and also affects the potential for a surface fire to transition to a crown fire. Fire spread rate represents the speed at which the fire progresses through surface fuels and is another important variable in initial attack and fire suppression efforts (Rothermel and Rinehart 1983). Spotting distance is the distance a firebrand or ember can travel down wind and ignite receptive fuel beds. Four fire modeling scenario locations were selected to better understand the different fire behavior that may be experienced on or adjacent the site based on slope and fuel conditions; these fire scenarios are explained in more detail below:

Fire Scenario Locations and Descriptions:

Scenario 1: A summer, on-shore fire (50th percentile weather condition) burning in high-load shrubs and chaparral dominated vegetation located in the hillside to the southwest of the Project site. The terrain is moderately steep (approximately 27% slope) with potential ignition sources from a hiker using the trails or a wildland fire originating in the non-maintained vegetated west/southwest of the Proposed Project site. This type of fire would typically spread down slope relatively slow towards the southwestern side of the development.

Scenario 2: A fall, off-shore fire (97th percentile weather condition) burning in high-load shrubs and chaparral dominated vegetation located in the hillside to the south of the Project site. The terrain is relatively steep (approximately 32% slope) with potential ignition sources from a hiker using the trails or a wildland fire originating in the non-maintained vegetated south/west/southwest of the Proposed Project site. This type of fire would typically spread down slope relatively slow towards the southern portion of the development.

Scenario 3: A fall, off-shore fire (97th percentile weather condition) burning in high-load shrubs and chaparral dominated vegetation located east of the Project site. The terrain is moderately steep (approximately 24% slope) with potential ignition sources from a car fire along SR-125 or a wildland fire originating in the non-maintained vegetated areas east of the Proposed Project site. This type of fire would typically spread down slope relatively slow towards the south/easter portion of the development.

Scenario 4: A summer, on-shore fire (50th percentile weather condition) burning in maintained grasses located north of the development. The terrain is flat (approximately 4% slope) with potential ignition sources from a house or car fire within the existing residential communities to the north of the proposed Project site. This type of fire would typically spread slowly towards the northern portion of the development.

The results presented in Tables 3 and 4 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 will be affected by many factors, including unique weather patterns, small-scale topographic variations, or changing vegetation patterns.

3.3.1 Existing Conditions

Based on the BehavePlus analysis result presented below and in Tables 3 and 4, a worst-case wildfire being fanned by 50 mph, offshore winds (fire approaching from the south) in untreated sage scrub habitat (Fuel Model Sh5) would result in a fire spreading at approximately 6.3 mph with highest flame length values reaching approximately 42 feet in specific portions of the property. Maximum spotting distance for an offshore wind-driven fire is projected to occur at 2.3 miles, downwind. Additionally, a worst-case wildfire being fanned by 19 mph sustained, on-shore winds (fire approaching from the southwest) in untreated sage scrub habitat (Fuel Model Sh5) would result in a fire spreading at approximately 1.4 mph with highest flame length values reaching approximately 19.3 feet in specific portions of the property. Maximum spotting distance for an onshore wind-driven fire is projected to occur at 0.7 miles, downwind.

Table 3: RAWS BehavePlus Fire Behavior Model Results – Existing Conditions

Fire Scenarios	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)
Scenario 1: Ave. Slope: 27%, 50th Percentile Weather Conditions (Untreated Fuels) – Fire from the SW				
Fuel Model Sh5	19.3	3,546	1.4	0.7
Scenario 2: Ave. Slope-32%, 97th Percentile Weather Conditions (Untreated Fuels) – Fire from the South				
Fuel Model Sh5	24.7 (41.6)	6,021 (18,824)	2.0 (6.3)	0.8 (2.3)
Scenario 3: Ave. Slope-24%, 97th Percentile Weather Conditions (Untreated Fuels) – Fire from the SE				
Fuel Model Sh5	24.1 (41.4)	5,737 (18,537)	1.9 (6.2)	0.8 (2.3)
Scenario 4: Flat Slope-<5%, 97th Percentile Weather Conditions (Untreated Fuels) – Fire from the North				
Fuel Model Gr2	9.0 (14.1)	681 (1,791)	1.6 (4.2)	0.4 (1.1)

3.3.2 Post-Development Conditions

As previously mentioned, Dudek conducted modeling of the site for post-fuel modification zones. Fuel modification includes establishment of irrigated (Zone 1) and removal of dead, dying, and exotics vegetation (Zone 2) zones on the periphery of the project site, beginning at the structure. For modeling the post-FMZ treatment condition, the

fuel model assignment for moderate load, dry climate grass-shrub fuels were re-classified according to the specific fuels management (e.g., irrigated, fire resistive landscaping vs. removal of dead, dying and exotic vegetation and leaving native vegetation intact) treatment.

As depicted in Table 4, the FMZ areas experience a significant reduction in flame length and intensity. The approximately 41.6-foot flame lengths predicted for scrub habitat during pre-treatment modeling for fire scenarios 1, 2, 3, and 4 are reduced to approximately 12 feet at the outer edges of the FMZ (Zone 2) and to two (2) feet by the time the inner portions of the FMZ (Zone 1) are reached (fire scenarios 1, 2, 3, and 4 Post-Construction). Lower fire intensity and spotting distances are due to the higher live and dead fuel moisture contents in Zone 1.

Note: *The results presented 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.*

Table 4: RAWS BehavePlus Fire Behavior Model Results – Post Project Conditions

Fire Scenario	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)
Scenario 1: Ave. Slope-27%, 50th Percentile Weather Conditions (Treated Fuels) – Fire from the SW				
Fuel modification zone 1 (FM8)	1.8	20	0.1	0.1
Fuel modification zone 2 (Gs1)	5.1	192	0.4	0.3
Scenario 2: Ave. Slope-32%, 97th Percentile Weather Conditions (Treated Fuels) – Fire from the South				
Fuel modification zone 1 (FM8)	2.0 (2.6)	18 (46)	0.1 (0.1)	0.1 (0.3)
Fuel modification zone 2 (Gs1)	6.9 (12.1)	377 (1,283)	0.7 (2.4)	0.3 (1.0)
Scenario 3: Ave. Slope-24%, 97th Percentile Weather Conditions (Treated Fuels) – Fire from the SE				
Fuel modification zone 1 (FM8)	1.9 (2.6)	23 (46)	0.1 (0.1)	0.1 (0.3)
Fuel modification zone 2 (Gs1)	6.7 (12.1)	358 (1,283)	0.7 (2.4)	0.3 (1.0)
Scenario 4: Flat Slope-<5%, 97th Percentile Weather Conditions (Treated Fuels) – Fire from the North				
Fuel modification zone 1 (FM8)	1.9 (2.6)	22 (46)	0.1 (0.1)	0.1 (0.3)
Fuel modification zone 2 (Gs1)	6.6 (12.1)	344 (1,283)	0.6 (2.4)	0.3 (1.0)

1 All table values in parenthesis represent peak gusts of 50 mph.

Surface Fire:

Flame Length (feet): The flame length 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.

Fireline Intensity (Btu/ft/s): Fireline intensity is the heat energy release per unit time from a one-foot-wide section of the fuel bed extending from the front to the rear of the flaming zone. Fireline intensity is a function of rate of spread and heat per unit area, and is directly related to flame length. Fireline intensity and the flame length are related to the heat felt by a person standing next to the flames.

- Surface Rate of Spread (mph): Surface rate of spread is the "speed" the fire travels through the surface fuels. Surface fuels include the litter, grass, brush and other dead and live vegetation within about 6 feet of the ground.

The information in Table 5 presents an interpretation of the outputs for five fire behavior variables as related to fire suppression efforts. The results of fire behavior modeling efforts are presented in Tables 3 and 4. Identification of modeling run locations is presented graphically in Figure 6 of this FPP.

Table 5. Fire Suppression Interpretation

Flame Length (ft)	Fireline Intensity (Btu/ft/s)	Interpretations
Under 4 feet	Under 100 BTU/ft/s	Fires can generally be attacked at the head or flanks by persons using hand tools. Hand line should hold the fire.
4 to 8 feet	100-500 BTU/ft/s	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 to 11 feet	500-1000 BTU/ft/s	Fires may present serious control problems -- torching out, crowning, and spotting. Control efforts at the fire head will probably be ineffective.
Over 11 feet	Over 1000 BTU/ft/s	Crowning, spotting, and major fire runs are probable. Control efforts at head of fire are ineffective.

3.4 Project Area Fire Risk Assessment

Given the climatic, vegetative, topographic characteristics, and local fire history of the area, the Project site, once developed, is determined to be subject to occasional wildfires. Potential for wildfire encroaching on, or showering embers on the site is considered low to moderate, but risk of ignition from such encroachments or ember showers is considered low based on the type of construction, fuel modification zones, and fire protection features that will be provided for the structures.

Therefore, it will be critical that the latest fire protection technologies, developed through intensive research and real-world wildfire observations and findings by fire professionals, for both ignition resistant construction and for creating defensible space in the ever-expanding WUI areas, are implemented and enforced. The Tyler Street 14-Lot Residential Project, once developed, would provide each structure with defensible space that would reduce projected flame lengths to levels that would be manageable by firefighting resources for protecting the site's structures, especially given the ignition resistance of the structures and the planned ongoing maintenance of the entire sites' landscapes. In addition, the 100-foot FMZ widths for the Project site (where achievable) would be approximately two times as wide as the longest calculated flame lengths during off-shore wind conditions for portions of the proposed developed area that abut coastal scrub and mixed chaparral vegetation types.

Wildland fires are a common natural hazard in most of southern California with a long and extensive history. Southern California landscapes include a diverse range of plant communities, including vast tracts of shrublands, like those found adjacent to the Project site. Wildfire in this Mediterranean-type ecosystem ultimately affects the

structure and functions of vegetation communities (Keeley 1984) and will continue to have a substantial and recurring role (Keeley and Fotheringham 2003). Supporting this are the facts that 1) native landscapes, from chaparral to grasslands, become highly flammable each fall; 2) the climate of southern California has been characterized by fire climatologists as the worst fire climate in the United States (Keeley 2004) with high winds (Santa Ana) occurring during autumn after a six-month drought period each year; and 3) homes embedded in natural and managed landscape vegetation in what may be accurately described as a wildland urban intermix. Based on this research, it can be anticipated that periodic wildfires will occur in the designated open space areas adjacent to portions of the property site.

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Table 2. BehavePlus Fire Behavior Modeling Inputs

Model Variable	97th Percentile Weather (Off-Shore Wind)	50th Percentile Weather (On-Shore Wind)
Weather		
1 h[1] fuel moisture	2%	3%
10 h fuel moisture	3%	6%
100 h fuel moisture	5%	8%
Live herbaceous moisture	30%	60%
Live woody moisture	60%	90%
20 ft. wind speed	18 mph[2] sustained winds (50 mph peak gusts)	19 mph Sustained winds
Wind adjustment factor	0.4	0.4
Terrain		
Natural Slope	24% to 32%	27%
Fuel Model		
Fuel Models	Sh5, FM 8, and Gs1	Sh5, FM 8, Gs1

Note:
[1] h=hour
[2] mph= Miles per hour

Table 3. Tyler Street BehavePlus Fire Behavior Model Results Existing Conditions[1]

Fire Scenarios	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)
Scenario 1: Average Slope-27%, 50th Percentile Weather Conditions (Untreated Fuels) – Fire from the Southwest				
Fuel Model Sh5	19.3 ft.	3,546	1.4	0.7
Scenario 2: Average Slope-32%, 97th Percentile Weather Conditions (Untreated Fuels) – Fire from the South				
Fuel Model Sh5	24.7' (41.6')	6,021 (18,824)	2.0 (6.3)	0.8 (2.3)
Scenario 3: Average Slope-24%, 97th Percentile Weather Conditions (Untreated Fuels) – Fire from the Southeast				
Fuel Model Sh5	24.1' (41.4')	5,737 (18,537)	1.9 (6.2)	0.8 (2.3)

Table 4. Tyler Street BehavePlus Fire Behavior Model Results Post-Project Conditions [1]

Fire Scenario	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)
Scenario 4: Average Slope-27%, 50th Percentile Weather Conditions (Treated Fuels) – Fire from the Southwest				
Fuel modification zone 1 (FM8)	1.8	20	0.1	0.1
Fuel modification zone 2 (Gs1)	5.1	192	0.4	0.3
Scenario 5: Average Slope-32%, 97th Percentile Weather Conditions (Treated Fuels) – Fire from the South				
Fuel modification zone 1 (FM8)	2.0 (2.6)	18 (46)	0.1 (0.1)	0.1 (0.3)
Fuel modification zone 2 (Gs1)	6.9 (12.1)	377 (1,283)	0.7 (2.4)	0.3 (1.0)
Scenario 6: Average Slope-24%, 97th Percentile Weather Conditions (Treated Fuels) – Fire from the Southeast				
Fuel modification zone 1 (FM8)	1.9 (2.6)	23 (46)	0.1 (0.1)	0.1 (0.3)
Fuel modification zone 2 (Gs1)	6.7 (12.1)	358 (1,283)	0.7 (2.4)	0.3 (1.0)

[1] All table values in parenthesis represent peak gusts of 50 mph.

SOURCE: AERIAL-BING MAPPING SERVICE 2018

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FIGURE 6
BehavePlus Analysis Map
Tyler Street Fire Protection Plan

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4 Emergency Response Service

The following sections analyze the Project in terms of current Santee Fire Department (SFD) Fire Service capabilities and neighboring fire agency resources to provide Fire Protection and Emergency Services. The analysis that follows examines the ability of the closest existing SFD fire stations to adequately serve the Project. Response times were evaluated using Project build-out conditions. It was assumed that phased construction would include an access road to the newly constructed buildings and that the shortest access route to those structures would be utilized.

4.1 Emergency Response Fire Facilities

The Project site is located within the SFD jurisdictional response area. SFD services approximately 16.5 square miles and a population of approximately 58,000 in the City of Santee (City of Santee website 2021)[3]. The Fire Department provides structural and wildland fire protection and advanced life support-level emergency medical services within the City limits. SFD operates two Fire Stations (Station 4 and 5) with 53 uniformed fire personnel. Figure 7 illustrates the location of the two fire stations. Table 6 provides fire station information for the existing SFD Stations 4 and 5, which are proximal to the Proposed Tyler Street Project 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 SFD Station 5.

As depicted in Table 6, SFD Fire Station No. 5, located at 9130 Carlton Oaks Drive, Santee is the closest SFD station that would provide services the Project site. This Station is covered by three shifts, each of which is staffed by eight (8) fulltime fire personnel. Station 5 is equipped with two (2) Type 1 Fire Engines (Engines 5 and 205) and one (1) Medic Ambulance. SFD Station 5 is approximately 2.4 miles from the entrance into the development and 2.6 miles from the most remote lots of the Project site and could respond to an incident within approximately four minutes and 30 seconds travel time. SFD Fire Station 4, which are located at 8950 Cottonwood Avenue, Santee, is the next closest SFD station that could respond to the Project site. Station 4 is located approximately 2.9 miles from the entrance into the development and 3.1 miles from the most remote lots of the Project site and is covered by three shifts, each of which is staffed by nine fulltime fire personnel. Station 4 is equipped with one (1) Type 1 Fire Engine (Engine 4), one (1) Truck company (Truck 4), one (1) Brush Engine (Brush 4), one (1) Medic Ambulance (Medic 4), and one (1) Battalion unit.

Emergency travel time for first arriving engines from each station to the Project Site are provided in Table 6. Travel distances are derived from Google road data while travel times are calculated using response speeds of 35 mph, consistent with nationally recognized National Fire Protection Association (NFPA) 1710 and Insurance Services Office (ISO) Public Protection Classification Program's Response Time Standard formula (Time=0.65 + 1.7(Distance). The ISO response travel time formula discounts speed for intersections, vehicle deceleration and acceleration, and does not include turnout time. 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.

3 https://www.cityofsanteeca.gov/government/fire-department/department-overview

Table 6. SFD Emergency Response Analysis Stations Summary

Station No.	Location	Equipment	Staffing*	Maximum Travel Distance**	Est. Travel Time***
SFD Station #4	9130 Carlton Oaks Drive, Santee, CA	(1) Type 1 Engine 4 (1) Truck 4 (1) Medic Ambulance 4 (1) Brush Engine 4 (1) Battalion Unit 2	(2) Fire Captain (2) Engineer (4) Firefighter/Paramedics (1) Battalion Chief (9 personnel/shift)	3.1 mi.	5 minutes, 19 seconds.
SFD Station #5	8950 Cottonwood Avenue, Santee, CA	(1) Type 1 Engine 5 (1) Type 1 Engine 205 (1) Medic Ambulance 5	(2) Fire Captain (2) Engineer (4) Firefighter/Paramedic (8 personnel/shift)	2.6 mi.	4 minutes, 30 seconds.

* Stations are staffed 24/7 by three rotating shifts.
** Distance measured to farthest portion of Project site
*** Assumes travel at 35 mph travel speed and does not include donning turnout gear and fire dispatch time. Actual travel speeds are likely to be closer to 45 mph speed limits

4.1.1 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 within 6 minutes, 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 6 and Figure 7, 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 4 minutes 10 seconds to the entrance of the Tyler Street site and 4 minutes 30 seconds to the furthest lots at the end of Tyler Street. The second engine to the site is estimated to arrive within approximately 4 minutes 59 seconds travel time to the entrance and 5 minutes and 19 seconds to the furthers lots of the Project site. 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 fully comply with the City's response time standards from existing fire stations and may require provisions for additional resources, however, the Project is consistent with National Fire Protection Association (NFPA) 1710 standard.

In addition, there are automatic aid agreements and dropped boundary agreements on first alarm or greater emergency calls with surrounding communities, ensuring that the closest unit will be dispatched, regardless of jurisdictional boundaries. The SPD is also part of both the San Diego County and State of California Master Mutual Aid Agreements.

4.2 Estimated Calls and Demand for Service from the Project

Determining the potential impact associated with the Project's estimated population increase is required in order to compare how many additional calls may be realized and determine what effects they may have on the available response resources. The estimated incident call volume of the Project is based on a conservatively calculated estimate from the maximum potential number of additional persons that would be expected on site. 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.

During 2019, SFD documented a response to 5,791 total incident calls (Santee Fire Department, 2019a) that were generated by a City-wide service area total population of approximately 58,000 persons. The City's per capita annual call volume is approximately 100 calls per 1,000 persons. The resulting per capita call volume is 0.100.

As previously described, the Project's proposed development plan includes the construction of 14 detached single-family lots with an average unit occupancy of 2.85 people per dwelling unit for this type of community (U.S. Census Bureau 2021), which calculates to a total population of approximately 40 people (2.85 x 14 SFUs = 39.9 persons). The Project's estimated 40 residents would generate roughly 4 calls per year, most of which are expected to be medical-related calls; consistent with typical emergency call statistics (see Table 7). The estimated incident call volume at buildout from the Project is based on a conservative estimate of the maximum potential number of persons on site at any given time (considered a "worst case" scenario).

Service level requirements are not expected to be significantly impacted with the increase of approximately 4 calls per year or 0.011 calls per day for a station (SFD Station 5) that currently responds to roughly 8 calls per day in its primary service area[4]. For perspective, a typical station averages five calls per day and a busy station responds to about ten calls per day. With the currently average call volume at Stations 4 and 5, the additional approximately 4 calls per year associated with build out can be absorbed and still result in acceptable emergency response coverage. Therefore, the Project is not expected to cause a significant decline in SFD's emergency response times.

Table 7. Calculated Call Volume Associated with the Project

Emergency Calls per 1,000 (County Data)	Number of Residents	Avg. No. Calls per Year (40\1,000)x100	Avg. No. Calls per Day (4/365)
100	+/-40	4	0.011

4.3 Cumulative Impacts on Fire Response

The available firefighting and emergency medical resources in the vicinity of the Project site include an assortment of fire apparatus and equipment considered capable of responding to the type of fires and emergency medical services potentially occurring within the Project site. The Project, which includes the construction of 14 detached single-family residential lots and its proposed usage by up to 40 residents is an increase in potential service demand of approximately 4 calls per year, well within the capacity of the existing Fire Stations that will service the Tyler Street Project. Other future projects in the vicinity of Stations 4 and 5 are not known at the time of this FPPs preparation, but when considered cumulatively, the potential impact of multiple projects is considered less than significant, mitigated by increased funding available from each project to the SFD through property taxes and other fees associated with each project, including the Tyler Street Project. In addition, the Project would enter into a mutually

[4] This number is based on the department total of 5,791 calls annually split between the two stations, which averages to approximately 16 calls per day for the entire service area or roughly 8 calls per day per station.

agreed Fire Service Agreement or equivalent with the SFD, to be completed at later stages of project planning. This funding would be utilized to maintain or enhance fire response capabilities.

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SOURCE: AERIAL-Google Maps 2021

DUDEK

FIGURE 7
SFD Station Location Map
Tyler Street Fire Protection Plan

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5 Fire Safety Requirements - Buildings, Infrastructure, and Defensible Space

The City of Santee's Municipal Code and Ordinance No. 570 (Refer to Section 1.2 of this FPP for code references) governs the building, infrastructure, and defensible space requirements detailed in this FPP. The Project will meet applicable codes or will provide alternative materials and/or methods that will be approved by the SFD prior to their implementation. While these standards will provide a high level of protection to structures for the Project site, there is no guarantee that compliance with these standards will prevent damage or destruction of structures by fire in all cases.

The following summaries highlight important fire protection features. Prior to bringing combustible materials onto the site, all underground utilities shall be in place, hydrants operational, water mains, curbs, gutters, sidewalks, and an approved all-weather roadway in place, and interim fuel modification zones established and approved. All items listed here shall meet approval by the SFD.

5.1 Fire Apparatus Site Access

Site access, including fire lane, driveway, and entrance road widths, primary access, turnarounds, dead end lengths, signage, surface, and other requirements will comply with the requirements of the 2019 or most recently adopted CFC and City Ordinance No. 570, and the 2019 California Building Code, Chapter 7A (Municipal Code Chapter 6, Article 3). Fire access will be reviewed and approved by SFD prior to construction.

The developer shall provide a response map update in a format acceptable with current department mapping to the SFD (Section 505.5).

5.1.1 Fire Apparatus Access Roads

The Project will be accessible by a public roadway and would involve the construction of new single-family residential structures, driveways, and would generate new trips to and from the Project site. The primary Project access will be via an extension of Tyler Street via Prospect Avenue and Mesa Heights Road to the north. The primary circulation element within the Project is a proposed 36-foot wide, two-land public road, dead-end road, and will provide internal circulation to all lots in the proposed Project. Site access, including road widths and connectivity, will comply with the City's development review process, as well as compliance with applicable emergency access standards that would facilitate emergency vehicle access during project construction and operation. Additionally, an adequate water supply and approved paved access roadways shall be installed prior to any combustibles on site and will include:

Primary access throughout the Project site will be provided via an extension of Tyler Street. Primary circulation within the Project is a proposed 36-foot wide, two-land public road. Tyler Street shall comply with two-way access road standards of not less than 26 feet exclusive of shoulders and are capable of supporting an imposed load of at least 75,000 pounds.

Tyler Street is considered a common or primary roadway for traffic flow through the site and for fire department access.

Any dead-end roads and/or driveways serving new buildings that exceed 150 feet shall 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.

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).

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.

Public streets shall meet all project approved fire code requirements and/or mitigated exceptions for maximum allowable dead-end distance, paving, and fuel management prior to combustibles being brought to the site.

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.
- The angles of approach and departure for fire apparatus access roads shall not exceed 7 degrees (12%) for the first 30 feet or as approved by a fire code official (Section 503.2.8).
- The developer shall provide a response map update in a format acceptable with current department mapping to the SFD (Section 505.5).

5.1.2 Road Widths and Circulation

All on-site road widths would be constructed according to the Specific 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.

5.1.3 Dead-Ends

Tyler Street is the Project's main access road and is a dead-end road, and will consistent with Section 503.2.5 of the CFC, which states that dead-end fire access road in excess of 150 feet in length shall be provided with an approved area for turning around emergency apparatus. 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."

5.1.4 Grade

The proposed internal road grades will comply with Section 503.2.7 of the 2019 CFC. The grade for proposed fire apparatus access roadway or driveway shall not exceed 15% within the Project and shall be capable of supporting the dynamic weight of a 75,000-pound fire apparatus (Section 503.2.3).

The angles of approach and departure for fire apparatus access roads shall not exceed 7 degrees (12%) for the first 30 feet or as approved by a fire code official (Section 503.2.8).

5.1.5 Surface

All on-site fire access and vehicle roadways shall be constructed and maintained to support the imposed loads of fire apparatus (not less than 75,000 lbs.) and shall be provided with an approved surface as described above. Access roads would be completed and paved prior to issuance of building permits and prior to the occurrence of combustible construction. All underground utilities, hydrants, water mains, curbs, gutters and sidewalks must be installed, and the drive surface shall be approved by SFD prior to combustibles being brought on site.

5.1.6 Vertical Clearance

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.

5.1.7 Premise Identification

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

1. 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.
2. 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.
3. If the structure is 100 feet from the roadway, structure identification should also be located at the entrance to the driveway.

5.2 Ignition Resistant Construction and Fire Protection Systems

Each of the proposed 14 single-family residential structures will be constructed to 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 and Building Codes (Chapter 7A) as amended by the City of Santee. These requirements address roofs, eaves, exterior walls, vents, appendages, windows, and doors and result in hardened structures that have been proven to perform at high levels (resist ignition) during the typically short duration of exposure to burning vegetation from wildfires. While these standards will provide a high level of protection to structures in this development and should reduce the potential for ordering evacuations in a wildfire, there is no guarantee that compliance with these standards will prevent damage or destruction of structures by fire in all cases. It should be noted, 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.

There are three primary concerns for structure ignition: 1) radiant and/or convective heat, 2) burning embers, and 3) direct flame contact (NFPA 1144 2008, Ventura County Fire Protection District 2011, IBHS 2008, and others). 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 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 mitigation 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 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. Application of Chapter 7A, ignition resistant building requirements.
2. 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 7A: 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.

3. 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.
4. There would be no use of paper-faced insulation or combustible installation in attics or other ventilated areas.
5. 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
6. New class-A fire rated roof and associated assembly. With the proposed class-A fire rated roof, there will be attic or void spaces requiring ventilation to the outside environment. The attic spaces will require either ember-resistant roof vents or a minimum 1/16-inch mesh (smaller sizes restrict air flow) and shall not exceed 1/8-inch mesh for side ventilation (recommend BrandGuard, O'Hagin or similar vents). Minimum vent size is provided as smaller mesh may result in ventilation issues. All vents used for this project will be approved by SFD.
7. Multi- pane glazing with a minimum of one tempered pane, fire-resistance rating of not less than 20 minutes when tested according to NFPA 257 (such as SaftiFirst, SuperLite 20-minute rated glass product), or be tested to meet the performance requirements of State Fire Marshal Standard 12-7A-2.
8. 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.
9. Automatic, Interior Fire Sprinkler System to code for all habitable, detached, single-family residential dwellings and garages
10. Modern infrastructure, access roads, and water delivery system.

5.3 Infrastructure and Fire Protection Systems Requirements

The following infrastructure components are made in order to comply with the SFD and City of Santee requirements, which has adopted and amended the 2019 California Fire Code, and nationally accepted fire protection standards, as well as additional requirements to assist in providing reasonable on-site fire protection.

5.3.1 Water Supply

The Project will be served by the Padre Dam Municipal Water District (PDMWD). The water system shall be a public system designed and installed by PDMWD and will be consistent with SFD requirements which follows the water flow requirements of the 2019 CFC, Section 507.2 and 507.2.3 based on Appendix B. The public water system will be through connections to existing water mains running along Tyler Street. The system will provide reliable fire service providing 2,500 gallons per minute at 20 pounds per square inch (PSI) for a 2-hour duration.

5.3.2 Fire Hydrants

Hydrants are subject to SFD approval. Hydrants to be located on the normal fire apparatus response side of the road, 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 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 along Tyler Street 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.

5.3.3 Automatic Fire Sprinkler Systems

All structures within the Project site will include the installation of an automatic, residential interior fire sprinkler system. Automatic internal sprinkler systems shall be in accordance with the National Fire Protection Association (NFPA) 13-D and City of Santee installation requirements as appropriate, that are consistent with Section R313.3 of the 2019 California Residential Code, Chapter 9, Section 903 of the 2019 California Fire Code, and Section 602 of the Urban-Wildland Interface Code. The requirements for NFPA 13-D systems are two-fold. First, a one-hour vertical separation is required between individual living units from floor level to underside of roof. Secondly, each unit must have its own dedicated and properly sized water meter for the NFPA 13-D system. The sprinkler system will be remotely supervised by an approved 24/7 central-station (NFPA 71). Fire sprinkler monitoring plans for each building will be submitted to SFD for approval before installation.

5.3.4 Fire Alarm Systems and Residential Hazard Detectors

All residential units shall have electric-powered, hard-wired smoke detectors in compliance with SFD Fire Code Ordinance, including the 2019 CFC and CBC requirements.

5.4 Ongoing Building and Infrastructure Maintenance

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

5.5 Pre-Construction Requirements

Prior to bringing combustible materials onto the site, all utilities and site improvements within the active development shall be in place, fire hydrants operational, an approved all-weather roadway in place, and fuel modification zones established and approved.

5.6 Defensible Space and Vegetation Management

5.6.1 Defensible Space and Fuel Modification Zone (FMZ)

WUI fire protection requires a systems approach, which includes the components of infrastructure and water, structural safeguards (addressed in the FPP), and adequate defensible space setbacks. This section provides defensible space details for the Tyler Street 14-Lot Residential Development Project.

An important component of a fire protection system for this Project is the provision for ignition-resistant landscapes, modified vegetation buffers, and the installation of six-foot heat deflecting walls. FMZs are typically designed to provide vegetation buffers that gradually reduce fire intensity and flame lengths from advancing fire by strategically placing thinning zones and irrigated zones adjacent to each other on the perimeter of the WUI exposed structure(s). FMZs are arguably more important when situated adjacent to older structures that were built prior to the latest ignition resistant codes and interior sprinkler requirements. The Project will be exposed to naturally-vegetated pockets of open space to the north, as well as to the west, south, southeast, and east, however, the northern and northeastern portions of the Project development will be directly adjacent to an existing residential community. Approximately 1,800 feet east of the Project site is I-125 and another existing residential community, and approximately 2,600 feet south of the Project site is the Grossmont College Campus. FMZs will be provided around all new single-family development lots within the Project development that are adjacent to open space areas. All dwelling units on the Project site will be highly ignition resistant based on required construction design, materials, and methods. There are seven lots that cannot achieve a full 100 feet of FMZ on the Project property for various reasons, including property boundary constraints (Lots 1 through 3), being adjacent to an open space easement area (Diegan Sage Scrub Easement per document 1994-0535919 recorded 9-8-94) for the Diegan coastal sage scrub located in the southeastern portion of the Project site (adjacent to Lots 7 and 8), or an ephemeral drainage channel abuts the northeastern portion of Lots 1 through 5. To mitigate for the reduced FMZs on Lots 1 through 6, the Project's applicant will apply for a 1602 Permit, which is a Lake and Streambed Alteration Program by the CA Department of Fish and Wildlife that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within these Drainage areas and by doing so, allowing Lots 3 through 6

to achieve a full 100 feet of fuel modification, Additionally, a 6-foot concrete masonry unit (CMU) fire wall will be installed along the property boundary adjacent to Lots 1 through 3 and code exceeding construction and landscape alternatives are proposed for Lots 1 through 3.

Finally, in order to mitigate and provide the remaining FMZ along the southern and southeastern sides of Lots 7 and 8 within the Diegan Sage Scrub easement areas, a program has been put in place by the Project's biologist that would allow for irrigating (Zone 1) and 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within this Diegan Sage Scrub easement area. By doing so, Lots 7 and 8 will be able to provide a full 100 feet of FMZ in all directions, including a full 50-foot irrigated Zone 1 and a full 50-foot Zone 2. Zone 1 BMZ impacts are considered significant and if required, additional on-site mitigation would be required at a 2:1 mitigation ratio; this mitigation would be completed onsite within the proposed open space areas along the western side of the development. Zone 2 BMZ impacts are considered impact neutral and not considered a significant biological impact. As a result, no compensatory mitigation is required for Zone 2 impacts, including offsite Zone 2 BMZ impacts. Additional code exceeding construction and landscape alternatives that provide the same practical effect as the 100 feet FMZ will also be provided for Lots 7 and 8.

Cohen (1995) performed structure ignition fire research studies that suggest, as a rule-of-thumb, larger flame lengths and widths require wider fuel modification zones to reduce structure ignition. For example, valid Structure Ignition Assessment Modeling results indicate that a 20-foot-high flame has minimal radiant heat to ignite a structure (bare wood) beyond 33 feet (horizontal distance). Whereas, a 70-foot-high flame requires about 130 feet of clearance to prevent structure ignitions from radiant heat (Cohen and Butler 1996). For this fire study example, bare wood was used, which is more combustible than the ignition resistant exterior walls that will be used to build the single-family residences of the Tyler Street Project. For the Tyler Street Project, assuming 42-foot flame lengths, reduced fuel modification zones are justifiable for the limited building areas.

A minimum 100-foot-wide FMZ is required by the SFD (Santee Municipal Code Chapter 11.18.020, Section 4907.2, Title 14, and PRC 4290-4291) for defensible space in areas adjacent to naturally vegetated, open space lands. Based on the site plan, the majority the lots within the Project site achieve 100 feet or more of on-site FMZ, which includes a minimum 50-foot wide Zone 1 (irrigated and re-planted with SFD approved fire resistive, less flammable plant species) and a 50-foot wide Zone 2 (no more than 30% of the dead and dying vegetation material remain within the square footage of the planted area). However, as stated above, conceptual building footprints partially protrude into the 100 feet FMZ along the northern boundary, more specifically Lots 1 through 3 are constrained to providing between 50 to 100 feet of achievable on-site fuel modification. The remaining on-site fuel modification is restricted in the north by an ephemeral drainage easement (adjacent to Lots 1 through 5) and to the south and southeast by a Diegan coastal sage scrub easement (adjacent to Lots 7 and 8), which require the existing natural vegetation in these areas to remain undisturbed and in their natural state, unless mitigated for or a 1602 Permit is obtained. By providing a mitigation program and obtaining a 1602 Permit, the Project would be allowed to remove dead, dying and exotic vegetation, and keep the native vegetation intact and grasses to be cut less than 4-inches in height within these areas. Figure 8 illustrates the configuration of the FMZs for the development footprint and the areas where the additional required irrigated Zone 1 and Zone 2 would occur within the drainage areas adjacent to Lots 1 through 6 and within the Diegan Sage Scrub area adjacent to Lots 7 and 8. In addition to thinning out the dead and dying materials within these areas above, Dudek and the Project's applicant are proposing additional code exceeding fire protection mitigation measures for the lots achieving less than 100 feet on-site FMZ, including the construction of a 6-foot CMU fire wall adjacent to Lots 1 through 3. These measures are analyzed to result in adequate separation and radiant wildfire heat protection as supported by scientific research and successful

application of these mitigations for many other projects throughout southern California, including in numerous San Diego County fire agency jurisdictions.

This section provides standard Santee Fire Department FMZ requirements. These requirements will be applicable to all portion of the Project site. Areas where the Project cannot achieve a full 100 feet of on-site FMZ, the Project proposes a minimum six-foot non-combustible heat-deflecting fire wall as a fire protection feature providing same practical effect as FMZ. Further information about the construction of a non-combustible minimum six-foot heat deflecting fire wall can be found in Section 7 below.

5.6.1.1 City of Santee 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 Figure 8 and vary in their configuration (Zones 1 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 F 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 1 and interior portions 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. An automatic irrigation system would be installed in Zone 1 to maintain hydrated plants without over-watering, allowing for run-off, or attracting nuisance pests. In Zone 2, no more than 30% of the dead and dying vegetation material remain within the square footage of the planted area, as described below.

The Project would also hire a qualified SFD-approved 3rd party FMZ inspector to provide annual inspections, unless SFD prefers to conduct the inspections, as detailed in the following sections.

5.6.1.2 Zone 1 – Irrigated Zone (minimum 50 feet wide)

Zone 1 is minimum 50 feet of the rear- or side-yard from the furthest projection of the structure (e.g., the outer edge of the eave) to the property line adjacent to Lots 1 and 2, the drainage channel adjacent to Lots 3 through 6, of Zone 2 adjacent to Lots 7 through 14. 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 1 would be planted with drought-tolerant, fire resistant plant material and would be maintained by the property owner.

Zone 1 includes the following key components:

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. 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. Tree spacing of a minimum 10 feet between canopies or as specified in Table 8 for steeper slopes.
5. No tree limb encroachment within 10 feet of a chimney, including outside propane or natural gas barbecues or fireplaces.
6. Highly flammable trees, including but not limited to conifers, eucalyptus, cypress, junipers, palms, and pepper trees are not allowed within this zone.
7. Tree maintenance includes limbing-up (canopy raising) 6 feet above ground or one-third the height of mature tree, whichever is greater.
8. All structures, including habitable buildings, patio covers, gazebos, decks, arbors, etc., would require plan review approval by SFD.
9. Trees and tree form shrub species that naturally grow to heights that exceed 10 feet would be vertically pruned to prevent ladder fuel.
10. Grasses would be cut to 4 inches in height.
11. 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[5] area that has been shown to be a potential vulnerability for fire impingement from burning ground cover.
12. 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[6].
13. No permanent or portable fire pits, outdoor fireplaces, or flame-generating devices that burn wood are allowed within Zone 1. 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.
14. 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.
15. Homeowners would be responsible for ensuring that rear- or side-yard landscaping is maintained for annual inspection.

Table 8. 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)

5 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.
6 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.

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

Zone 2 reduces the fuel load of a wildland area adjacent to Zone 1, and thereby, reduces heat and ember production from wildland fires, slows fire spread, and reduces fire intensity as it approaches the Zone 1. Zone 2 adjoins Zone 1 on its outer edge and measures 50 to 100 feet in width. In this Zone, areas outside of the riparian area within the Project Site require a minimum 70% thinning or removal of plants, focus on removing the most flammable species, and dead and dying plant material, while creating a mosaic of shrub groupings. The Zone 2 areas within the riparian area with native wetland trees, will include a minimum 30% thinning of only the dead and dying vegetation material. Zone 2 requries periodic inspection and maintenance by the HOA.

Zone 2 areas outside of the riparian area includes the following key components:

1. Zone 2 areas outside of the riparian area within the Project site requires no more than 30% of the dead and dying vegetation material remain within the square footage of the planted area, while creating a mosaic of shrub groupings.
2. Zone 2 consists of low-growing, fire resistant shrubs and groundcovers with an average height less than 24 inches.
3. Grasses between shrub groupings would be cut to 4 inches in height.
4. Ground cover between shrub groupings to be maintained less than 6 inches high.
5. Trees and tree-form shrub species that naturally grow to heights that exceed 4 feet would be vertically pruned to prevent ladder fuels.
6. Maintenance including ongoing removal and thinning of dead/dying shrubs.

5.6.2 Other Vegetation Management

5.6.2.1 Vacant Parcels and Lots

1. A Fuel Modification Phasing/Development Plan shall be drafted and implemented for the phasing of the Tyler Street 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.

5.6.2.2 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 Tyler Street Project's managed and maintained FMZs are designed to be included within portions of environmentally sensitive areas, specifically, within the drainage channel along the northern property boundary as well as within the Diegan Sage Scrub Easement area adjacent to Lots 7 and 8.

5.6.2.3 Private Lots

None of the plant materials listed in Appendix G (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). The Tyler Street HOA 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.

5.6.2.4 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 G) 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).

5.6.2.5 Fuel Modification Maintenance

All fuel modification area vegetation management shall be completed annually by May 1 of each year and more often as needed for fire safety, as determined by the SFD. The project HOA shall be responsible for all vegetation

management throughout the common areas of the project site, in compliance with the requirements detailed herein and SFD requirements. Additionally, private lot owners will be responsible for installing their irrigated fuel modification zones. Prior to establishment of the irrigated fuel modification zone, the entire required irrigated fuel modification zone will be mowed to 4-inch stubble height until such time that the homeowner installs the irrigated fuel modification zone, which will be required to be in place within 6 months of structure occupancy. The residents shall maintain fuel modification zone(s) on their properties. Furthermore, the community CC&R's shall require the HOA to inspect rear yards along the perimeter and require owners to maintain their property in accordance with this Letter Report. Should owner not comply, HOA shall notify the SFD and the SFD will provide inspections per their internal standards.

5.6.2.6 FMZ Compliance Inspections

The property owner would obtain an FMZ inspection and report from a qualified SFD-approved 3rd party inspector in May of each year certifying that vegetation management activities throughout the Project Site have been performed pursuant to this Letter Report, including verifying that wood bark and other combustible mulches shall not be used within the first 5 feet from the homes. A copy of the annual inspection report would be provided to the Proposed Project HOA and a copy made available to SFD, if requested.

5.6.2.7 Pre-Construction Requirements

- Perimeter fuel modification areas must be implemented and approved by the SFD prior to combustible materials being brought on site.
- Existing flammable vegetation shall be reduced by 70% on vacant lots upon commencement of construction.
- Dead fuel, ladder fuel (fuel which can spread fire from ground to trees), and downed fuel shall be removed and trees/shrubs shall be properly limbed, pruned, and spaced per this plan.
- Private lot owners will be responsible for installing their irrigated fuel modification zones. Prior to establishment of the irrigated fuel modification zone, the entire required irrigated fuel modification zone will be mowed to 4-inch stubble height until such time that the homeowner installs the irrigated fuel modification zone, which will be required to be in place within 6 months of structure occupancy.

5.6.2.8 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.

- 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.

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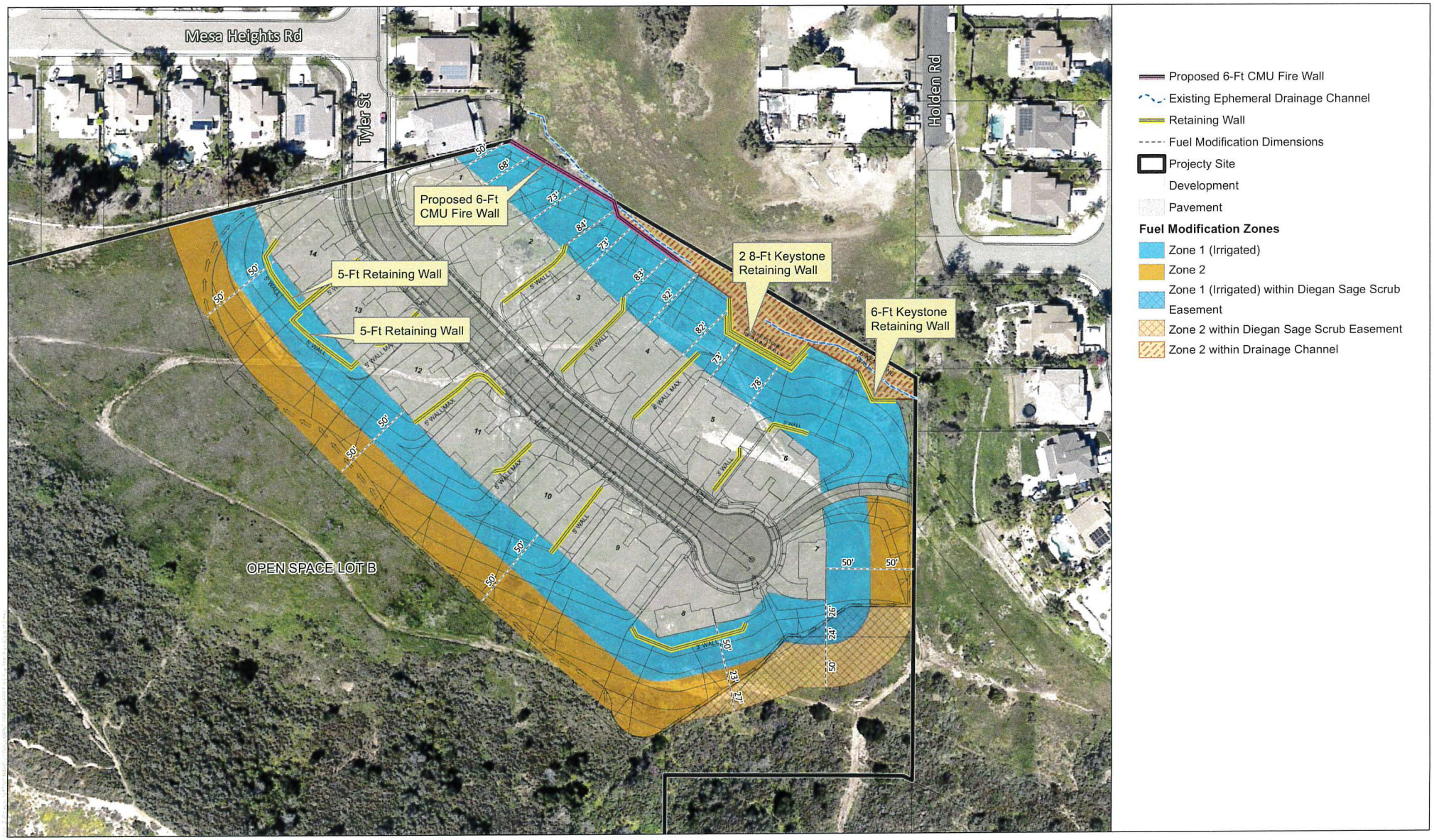

SOURCE: AERIAL-SANGIS 2017; DEVELOPMENT-WALSH ENGINEERING 2021

DUDEK

0 50 100 200 Feet

FIGURE 8
Fuel Modification Zone Map
Tyler Street Fire Protection Plan

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6 Alternative Materials and Methods for Non-Conforming Fuel Modification

As previously mentioned, due to site constraints, it is not possible to achieve a full 100 feet FMZ width for every Project lot. As such, this Preliminary Fire Assessment Summary Letter provides both City and State fire and building code required elements for constructing a residential structure in a very high fire hazard severity area, as well as enhanced, code exceeding mitigation measures for the lots with non-conforming fuel modifications zones. The code exceeding mitigation measures are customized for this Project site based on the fire behavior modeling analysis results and site fire environment evaluation and focus on meeting or exceeding the fire safety provided by a City defined, full 100 feet of fuel modification zone.

As indicated in this report, the FMZs and additional fire protection measures proposed for the Project provide equivalent wildfire buffer but are not standard zones. Rather, they are based on a variety of analysis criteria including predicted flame length, fire intensity (Btu), site topography and vegetation, extreme and typical weather, the position of structures on pads, position of roadways, adjacent fuels, fire history, current vs. proposed land use, neighboring communities relative to the proposed Project, and type of construction. The fire intensity research conducted by Cohen (1995), Cohen and Butler (1996), and Cohen and Saveland (1997), and Tran et al. (1992) supports the fuel modification alternatives proposed for this Project.

6.1 Additional Structure Protection Measures and Justification

The following **are City and State fire and building code required measures for** building in wildland urban interface areas.

1. The proposed Tyler Street 14-lot single-family residential subdivision achieves a minimum 50 feet of on-site FMZ for every lot, and Lots 9 through 14 achieve a full 100 feet of FMZ (50 feet irrigated Zone 1 and 50 feet of a Zone 2) without the need to provide additional mitigation. Lots 1 through 8 are unable to achieve a full 100 feet of FMZ within the property limits for various reasons; these lots are able to achieve between 50 and 100 feet of FMZ and will be required to implement the **code exceeding mitigation measures** described below.

2. Each of the new single-family residential structures within the proposed Tyler Street 14-lot subdivision site will be code compliant, ignition resistive, and fully-sprinklered in compliance with applicable portions of the City of Santee Municipal Code, as well as with the 2019 edition of the California Building Code (CBC), Chapter 7A (or then current edition); 2019 edition of the California Fire Code (CFC), Chapter 49 (or then current edition); and 2019 edition of the California Residential Code (CRC), Section 237 (or then current edition), as adopted by the City;

3. All rooms and enclosed spaces within each of the new single-family residences, including within the garages, will be provided with an NFPA 13D fire sprinkler system with additional coverage. The NFPA 13D system is required:
   a) To be designed by a licensed fire protection engineer or SFD-approved sprinkler contractor.
   b) To provide fire inspector's test value five feet above grade. To install a fire sprinkler box in garage with wrench and three heads of each type used in design of fire sprinkler system;
   c) To provide sufficient water supply as determined by fire sprinkler hydraulic calculations, which may require increased meter and piping size. If fire flow is insufficient for the designed system, alternative options, such as a fire pump designed to boost fire flow, may be considered, to the approval of SFD. Alternative options will be submitted to SFD for approval before installation;
   d) Automatic or self-closing doors shall be installed and conform to the exterior door assembly standards addressed in Chapter 7 of the CBC;

4. A fire alarm system shall be installed in accordance with NFPA 72, *Fire Protection Signaling System* and SFD requirements, for monitoring the flow switch and inter-connection with the dwellings' smoke detectors. The fire alarm system will be supervised by a third-party alarm company. The system will be tested annually, or as needed, with test results provided to SFD;

5. Zone 1 requires a minimum 50 feet of irrigated landscape planted with drought-tolerant, fire resistive plants. No undesirable, highly flammable plant species shall be planted. The landscaping will be routinely maintained and will be watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would prevent ignition by embers from a wildfire;

6. The new residential design also provides an unimpeded, all-weather pathway (minimum three feet wide) on all sides of the residential structures for firefighter access around the entire perimeter of the structure;

The following **code exceeding mitigation measures** are being provided for nonconforming **lots unable to achieve a full 100 feet of fuel modification (Lots 1 through 8).** These code exceeding mitigations were found to meet or exceed the code required 100 feet fuel modification zones through science and application and were accepted by numerous fire agencies throughout California:

1. To mitigate for the reduced FMZs on Lots 1 through 6, the Project's applicant will apply for a 1602 Permit, which is a Lake and Streambed Alteration Program by the CA Department of Fish and Wildlife that would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within these Drainage areas and by doing so, allowing Lots 3 through 6 to achieve a full 100 feet of fuel modification.

2. To mitigate and provide the remaining FMZ along the southern and southeastern sides of Lots 7 and 8 within the Diegan Sage Scrub easement areas, a program has been put in place by the Project's biologist that would allow for irrigating (Zone 1) and 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within this Diegan Sage Scrub easement area. By doing so, Lots 7 and 8 will be able to provide a full 100 feet of FMZ in all directions, including a full 50-foot irrigated Zone 1 and a full 50-foot Zone 2. Zone 1 BMZ impacts are considered significant and if required,

additional on-site mitigation would be required at a 2:1 mitigation ratio; this mitigation would be completed onsite within the proposed open space areas along the western side of the development. Zone 2 BMZ impacts are considered impact neutral and not considered a significant biological impact. As a result, no compensatory mitigation is required for Zone 2 impacts, including offsite Zone 2 BMZ impacts. Additional code exceeding construction and landscape alternatives that provide the same practical effect as the 100 feet FMZ will also be provided for Lots 7 and 8 (refer to Project's Biological Report for more information on mitigation).

3. Lots 1 through 6 will be required to be maintained as an extended irrigated Zone 1 FMZ landscape with drought-tolerant, fire resistive plants. The Zone 1 FMZ will extend up to the drainage channel adjacent to Lots 1 through 6. The extended irrigated Zone 1 landscape will include no undesirable, highly flammable plant species shall be planted, that will be routinely maintained and watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would prevent ignition by embers from a wildfire;

4. Because of property boundary constraints, Lots 1 through 3 are unable to achieve a full 100 feet of FMZ onsite. To mitigate for the reduced FMZ, a 6-foot high non-combustible CMU fire wall will be constructed along the rear lot line behind Lots 1 through 3 will be constructed. The fire wall will be installed to function as heat-deflecting walls.

5. In addition to the construction of a 6-foot high CMU wall, the Project proposes to provide exterior glazing in windows (and sliding glass doors, garage doors, or decorative or leaded glass doors) facing the open space and naturally vegetated areas to be dual pane with both panes tempered glass to mitigate for the reduced FMZ within Lots 1 through 3. Dual pane, one pane tempered glass has been shown during testing and in after fire assessments to significantly decrease the risk of breakage and ember entry into structures. Therefore, requiring code-exceeding dual pane, both panes tempered is anticipated to be an important safety measure that provides enhanced structure protection and provides mitigation for reduced fuel modification zones and limited setbacks from adjacent structures. *The window upgrade also exceeds the requirements of Chapter 7A of the CBC and providing additional protection for the structure's most vulnerable, exterior side* **(CODE EXCEEDING MITIGATION MEASURE);**

6. Wildland exposed sides of the structures on Lots 1 through 3 shall also include 5/8-inch Type X fire rated gypsum sheathing applied behind the exterior covering or cladding (stucco or exterior siding) on the exterior side of the framing, from the foundation to the roof for a facade facing the open space and naturally vegetated areas. 5/8-inch Type X fire rated gypsum sheathing is required to be manufactured in accordance with established ASTM standards defining type X wallboard sheathing as that which provides not less than one-hour fire resistance when tested in specified building assemblies and has been tested and certified as acceptable for use in a one-hour fire rated system. CertainTeed Type X Gypsum Board has a Flame Spread rating of 15 and Smoke Developed rating of 0, in accordance with ASTM E 84, (UL 723, UBC 8-1, NFPA 255, CAN/ULC-S102); UL classified for Fire Resistance (ANSL/UL 263; ASTM E119) and listed under UL File No. CKNX.R3660 (Certainteed, 2021). Please refer to the specification in Appendix H for a more

detailed description of CertainTeed 5/8-inch Type X Fire Rated Gypsum sheathing (or similar product) **CODE EXCEEDING MITIGATION MEASURE;**

7. Areas requiring ventilation to the outside environment will require ember-resistant vents such as Brandguard, Vulcan, or O'Hagin brands. These vents exceed the code requirement of a minimum 1/16-inch not to exceed 1/8-inch openings. All vents used for this project will be approved by SFD. Please refer to the specification in Appendices I and J for a more detailed description of Brandguard, Vulcan, and O'Hagin ventilation brands. These use of these ember resistant vents are a **CODE EXCEEDING MITIGATION MEASURE;**

8. Non-combustible fencing shall be required to be installed for areas within Fire Hazard Severity Zones and/or Wildland Urban Interface Areas, including within five feet of every structure and along the side yards of each residence (Santee Municipal Code, Chapter 11.18.020, Section 4908.1). Dudek agrees with the requirements for avoiding wood/combustible fences on perimeter lots that abut unmaintained open space areas. However, the use of **Kroy Vinyl Fencing** (see *Appendix K – Kroy Vinyl Fencing Fire Rating*) or fire retardant treated lumber, such as **Hoover's lumber product**, are considered acceptable fencing materials to use for the proposed interior 6-foot high fencing (see Appendix L – OSFM Approved Hoover X);

9. No eave overhangs. By requiring no eaves instead of the code required boxed eaves, the structure eliminates the ability of capturing hot air and embers that may circulate under a boxed eave and instead allows the hot air to either bounce off the side of the structure or fly over the structure entirely (**CODE EXCEEDING MITIGATION MEASURE);**

10. Annual FMZ Inspections. Yearly fuel modification maintenance shall be required by the Project's HOA and each individual property owner. The communities HOA as well as individual property owners, shall be responsible for obtaining an FMZ inspection and report from a qualified SFD-approved 3rd party inspector in May of each year certifying that vegetation management activities throughout the Project site and within each individual lot have been performed pursuant to this Fire letter. This includes verifying that wood bark and other combustible mulches shall not be used within the first 5 feet from the homes. See details regarding the fuel modification zone vegetation maintenance program below **(CODE EXCEEDING MITIGATION MEASURE).**

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7 Justification for Reduced Fuel Modification Zones

As presented in this FPP, the FMZs provided for the proposed Tyler Street Project are not standard FMZs. Rather, Lots 1 through 8 cannot achieve the required 100 feet of FMZ due to lot constraints and Project boundary limitations. However, by applying for a 1602 Permit, which would allow for 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within the Drainage areas along the northern property boundary, Lots 3 through 6 would ultimately be able to achieve a full 100 feet of fuel modification, Additionally, the construction of a 6-foot CMU fire wall along the rear property boundary adjacent to Lots 1 through 3, will function as heat-deflecting wall and stop the progression of a ground fire from advancing into the rear yards of these lots. Furthermore, to mitigate and provide the remaining FMZ along the southern and southeastern sides of Lots 7 and 8 within the Diegan Sage Scrub easement areas, a program has been put in place by the Project's biologist that would allow for irrigating (Zone 1) and 30% thinning (Zone 2) of the dead and dying material or mowing non-native grasses to lower than 4-inches (if present) within this Diegan Sage Scrub easement area. By doing so, Lots 7 and 8 will be able to provide a full 100 feet of FMZ in all directions, including achieving a full 50-foot irrigated Zone 1 and a full 50-foot Zone 2. Zone 1 BMZ impacts are considered significant and if required, additional on-site mitigation would be required at a 2:1 mitigation ratio; this mitigation would be completed onsite within the proposed open space areas along the western side of the development. Zone 2 BMZ impacts are considered impact neutral and not considered a significant biological impact. As a result, no compensatory mitigation is required for Zone 2 impacts, including offsite Zone 2 BMZ impacts. Additional code exceeding construction and landscape alternatives that provide the same practical effect as the 100 feet FMZ will also be provided for Lots 7 and 8 (refer to Project's Biological Report for more information on mitigation.

An important component of a fire protection system for this Project is the provision for ignition-resistant construction and modified vegetation buffers. The structure ignition resistance standards detailed in the 2019 California Fire Code and Chapter 7A of the 2019 California Building code will enable the new single-family residential structures to withstand the type of wildfire that may occur in the fuels outside the development footprint. Fuel modification zone requirements, including a minimum 50 feet of fully irrigated landscapes with drought-tolerant, fire resistive plantings (Zone 1) and a 50-foot zone (Zone 2), will provide a reasonable level of wildfire protection to the ignition resistant structure. Additionally, undesirable, highly flammable plant species shall not be planted in fuel modification zones. For Lots 1 through 3 that are unable to achieve the full 100-foot FMZ, windows (and sliding glass doors, garage doors, or decorative or leaded glass doors) facing the open space and naturally vegetated areas will be required to be dual pane with both panes tempered glass. Additionally, the exposed sides of structures shall include 5/8-inch Type X fire rated gypsum sheathing applied behind the exterior covering or cladding (stucco or exterior siding) on the exterior side of the framing, from the foundation to the roof for a facade facing the open space and naturally vegetated areas. The installation of the 5/8-inch Type X fire rated gypsum sheathing increases a wall's fire rating to a minimum of 1 hour, from the 30-minute rating for standard ½-inch drywall. Also, yearly fuel modification maintenance shall be required for all 14 lots by the Project's HOA and each individual property owner. The communities HOA as well as individual property owners, shall be responsible for obtaining an FMZ inspection and report from a qualified SFD-approved 3rd party inspector in May of each year. Dudek has found that the code exceeding mitigation measures provided have been used for many other similar successful projects and demonstrate that they meet or exceed the code required 100 feet fuel modification zone. Fire behavior modeling, as previously presented, was used to predict flame lengths and was not intended to determine sufficient fuel modification zone 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. With that said, it is anticipated that the proposed structures will be able to withstand the short duration, low to moderate intensity fire and ember shower that is projected from off-site, adjacent fuels based on several factors, as discussed below.

7.1 Structure Ignition

There are two primary concerns for structure ignition: 1) radiant and/or convective heat and 2) burning embers (NFPA 1144 2008, IBHS 2008, and others). 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 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 for the Tyler Street Project are required by the City of Santee and State codes but are worth listing because they have been proven effective for minimizing structural vulnerability to wildfire and, with the inclusion of required interior sprinklers (required in the 2013 Building/Fire Code update), 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 mitigation measures for buildings in WUI areas, because they were known to reduce structure vulnerability to wildfire. These measures performed so well, they were adopted into the code. The following project features are required for this 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. Application of Chapter 7A, ignition resistant building requirements
2. Minimum 1-hour rated exterior walls and doors
3. Multi- pane glazing with a minimum of one tempered pane, fire-resistance rating of not less than 20 minutes when tested according to NFPA 257, or be tested to meet the performance requirements of State Fire Marshal Standard 12-7A-2. For lots unable to achieve the full 100 feet of FMZs (Lots 1 through 5, 7 and 8) dual pane dual tempered glass windows will be installed on the exposed sides of the new residential structures. Dual pane, one pane tempered glass has been shown during testing and in after fire assessments to significantly decrease the risk of breakage and ember entry into structures. Therefore, requiring code-exceeding dual pane, both panes tempered is anticipated to be an important safety measure that provides enhanced structure protection and provides mitigation for reduced fuel modification zones and limited setbacks from adjacent structures. *The window upgrade also exceeds the requirements of Chapter 7A of the CBC and providing additional protection for the structure's most vulnerable, exterior side.*
4. Ember resistant vents (recommend BrandGuard or similar vents)
5. Automatic, interior fire sprinkler system to code for occupancy type.

7.2 Fuel Separation

As experienced in numerous wildfires, including the most recent fire storms in San Diego County (2003 and 2007), homes in the WUI are potential fuel. The distance between the wildland fire that is consuming wildland fuel and the

home ("urban fuel") is the primary factor for structure ignition (not including burning embers). 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 et al. 1998). Construction materials and methods can prevent or minimize ignitions. Similar case studies indicate that with nonflammable roofs and vegetation modification from 10 to 18 meters (roughly 32 to 60 feet) in southern California fires, 85% to 95% of the homes survived (Howard et al. 1973, Foote and Gilless 1996). Similarly, 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). Damage to the structures built to the latest codes is likely from flammable landscape plantings or objects next to structures or open windows or doors (Hunter 2008).

These results support Cohen's (2000) findings that if a community's homes have a sufficiently low home ignitability, the community can survive exposure to wildfire without major fire destruction. This provides the option of mitigating the wildland fire threat to homes/structures at the residential location without extensive wildland fuel reduction. Cohen's (1995) studies suggest, as a rule-of-thumb, larger flame lengths and widths require wider fuel modification zones to reduce structure ignition. For example, valid SIAM results indicate that a 20-foot-high flame has minimal radiant heat to ignite a structure (bare wood) beyond 33 feet (horizontal distance). Whereas, a 70-foot-high flame requires about 130 feet of clearance to prevent structure ignitions from radiant heat (Cohen and Butler 1996). This study utilized bare wood, which is more combustible than the ignition resistant exterior walls for structures built today. Obstacles, including steep terrain and non-combustible fire walls can block or deflect all or part of the radiation and heat, thus making narrower fuel modification distances possible. Fires in ravines, chutes, coves, v-drainages, and steep-sided canyons can, under specific conditions, result in an upward draft, similar to a fireplace chimney. Chimneys on the landscape are created when air is drawn in from lower elevations, creating strong upslope drafts. The result can be acceleration of radiant and convective heat as well as actual fire spread, similar to opening the damper in a fireplace chimney. Areas where the terrain includes a restriction or narrowing can result in this type of acceleration. The terrain features adjacent the Project site include few mild examples of these "chimneys" that are not expected to significantly alter fire behavior.

7.3 Heat Deflecting Walls

The reduced lot sizes of Lots 1 through 3 which are adjacent to a vacant property to the north are areas of concern and provide an opportunity to place a non-combustible, six-foot tall, heat-deflecting wall (lower 1 to 2 feet block wall and upper 4 to 5 feet dual pane, one pane tempered glazing or a six-foot high CMU block wall) to provide additional deflection for these lots to compensate for the reduced fuel modification zones. Walls like these have proven to deflect heat and airborne embers on numerous wildfires in San Diego, Orange, Los Angeles, Ventura, and Santa Barbara County. Rancho Santa Fe Fire Protection District, Laguna Beach Fire Department, Orange County Fire Authority, and others utilize these walls as Alternative methods based on observed performance during wildfires. This has led to these agencies approving use of non-combustible landscape walls as mitigations for reduced fuel modification zones and reduced setbacks at top of slope. These walls are consistent with NFPA 1144 Standard for Reducing Structure Ignition Hazards from Wildland Fire – 2008 Edition, Section 5.1.3.3 and A.5.1.3.3 and

International Urban Wildland Interface Code (ICC 2012). NFPA 1144, A.5.1.3.3 states: "Noncombustible walls and barriers are effective for deflecting radiant heat and windblown embers from structures." These walls and barriers are usually constructed of noncombustible materials (concrete block, bricks, stone, stucco) or earth with emergency access openings built around a development where 30 feet (9 meters) of defensible space is not available.

7.4 Non-Combustible Fencing

The side yard fencing is proposed to use vinyl fencing. The fence returns to the structure (the portion of the fence that attaches to the house and extends perpendicular to the house until it attaches to the property line fencing) would be of a non-combustible material, possibly including masonry, steel, fire retardant-treated wood, or other fire department-approved materials. This fencing arrangement conforms with best practices to minimize the likelihood that fencing material enables fire a pathway to the structure by 1) using non-combustible materials at the wildland interface, 2) ensuring that the fence return to the structure is non-combustible, and 3) utilizing a vinyl product, separated from both the wildland fuels and the structure, that has been fire rated and shown to not sustain burning. Although there are no current Office of the State Fire Marshal (OSFM)-approved listings for vinyl fencing materials, the Kroy CertainTeed Bufftech vinyl fencing proposed by Cornerstone Communities includes a fire rating indicating that it has been fire tested to ASTM standards and performed well and that it exhibits no sustained burn, and can be considered self-extinguishing

Dudek has evaluated the use of exterior fire-retardant treated lumber for the rear- or side-yard fencing on perimeter residential lots within the Tyler Street residential community Project. Dudek has determined that the ignition resistant construction requirements for structures remain applicable and valid. However, fire retardant treated lumber, such as Hoover's lumber product, can be used to substitute for solid block, solid masonry or solid steel in areas designated as a high fire hazard. Per the Office of the State Fire Marshal (OSFM) website, Listing Number 2520-1701:0100 – Hoover Treated Lumber with Exterior Fire X is an approved building material listing product for high fire hazard areas (See Appendix L – OSFM Approved Listing 2520-1701:0100). It should be noted that there currently is not an OSFM approved listing for vinyl fencing materials.

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8 Homeowner's Wildfire Education Program

Early evacuation for any type of wildfire emergency at the Project site is the preferred method of providing for resident safety, consistent with the SFD's current approach within San Diego County. As such, the Project's Homeowner's Association (HOA) would formally adopt, practice, and implement a "Ready, Set, Go!" pre-planning approach to evacuation[7]. The "Ready, Set, Go!" concept is widely known and encouraged by the State of California and most fire agencies. Pre-planning for emergencies, including wildfire emergencies, focuses on being prepared, having a well-defined plan, minimizing the potential for errors, maintaining the Project site's fire protection systems, and implementing a conservative (evacuate as early as possible) approach to evacuation and Project area activities during periods of fire weather extremes.

The Project's residents will be provided a proactive educational component disclosing the potential wildfire risk and this report's requirements as part of their purchase documents. Property owner will be required to sign notice of receiving this information during escrow. 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.

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

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9 Conclusion

This FPP has been prepared for the Tyler Street 14-Lot Residential Project. It is submitted in compliance with requirements of the SFD and applicable portions of the City of Santee Municipal Code. The recommendations in this document meet 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 14 detached single-family residential lots adjacent the WUI in order to protect human life based on the best available science and code requirements. The Project's fire protection system includes a redundant layering of protection materials, measures, and methods that have been shown through post-fire damage assessments to reduce risk of structural ignition. Based upon Dudek's analysis of the Project, the enhanced building features along with along with the additional proposed fire protection measures would provide a level of safety equal to or greater than a 100-foot wide FMZ.

Ultimately, it is the intent of this FPP to guide, through code and other project specific requirements, the construction of structures that are defensible from wildfire and, in turn, do not represent significant threat of ignition source for the adjacent native habitat. It must be noted that during extreme fire conditions, there are no guarantees that a given structure will not burn. Fire safety precautions and measures identified in this report are designed to reduce the likelihood that fire would impinge upon the proposed structures. There's no guarantee that wildfires will not occur in the area that could damage property or harm persons. However, implementation of the required enhanced construction features provided by the applicable codes and the mitigating fuel modification requirements provided in this FPP will accomplish the goal of this FPP to assist firefighters in their efforts to defend these structures and reduce the risk associated with this project's WUI location. For maximum benefit, the developer, contractors, engineers, and architects are responsible for proper implementation of the concepts and requirements set forth in this report. Homeowners and HOA are responsible to maintain their structures and landscaping as required by this report, the applicable Fire Code, and the SFD.

This FPP recommends that the Project maintains a conservative approach to fire safety. This approach must include maintaining the landscape and structural components according to the appropriate standards and embracing a "Ready, Set, Go!" stance on evacuation. Although the proposed development and landscape will be significantly improved in terms of ignition resistance, it should not be considered a shelter-in-place community, but this approach to public safety may be utilized by incident managers as a contingency to an unsafe evacuation. Accordingly, evacuation of the site and the area should occur according to pre-established evacuation decision points, or as soon as notice to evacuate is received, which may vary depending on many environmental and other factors, whichever is more conservative. Fire is a dynamic and somewhat unpredictable occurrence and it is important for anyone living at the Project to educate themselves on practices that will improve their home survivability and their personal safety.

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10 Limitations

This FPP does not provide a guarantee that all residents and visitors will be safe at all times because of the enhanced fire protection features it requires. There are many variables that may influence overall safety. This FPP provides requirements and recommendations for implementation of the latest fire protection features that have proven to result in reduced wildfire related risk and hazard. Even then, fire can compromise the fire protection features through various, unpredictable ways. The goal is to reduce the likelihood that the system is compromised through implementation of the elements of this FPP and a regular occurring maintenance program.

For maximum benefit, the developer, contractors, engineers, and architects are responsible for proper implementation of the concepts and requirements set forth in this report. Homeowners are responsible to maintain their structures and lots as required by this report, the applicable City Fire and Building Codes.

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Appendix A

Tyler Street Site Photograph Log

Tyler Street Fire Protection Plan Project Photo Series

OCTOBER 2019

Appendix A

Tyler Street Fire Protection Plan Project
Fuels Photo Series

Photograph 1. Photograph illustrates the terrain and fuels modeled in fire scenario numbers 1, 2, and 3 on the east side of the proposed residential development site. Photograph taken facing southeast.

Photograph 2. Photograph illustrates the terrain and fuels modeled in fire scenario numbers 1, 2, and 3 on the western side of the proposed residential development site. Photograph taken facing southwest.

Tyler Street Fire Protection Plan Project
Fuels Photo Series

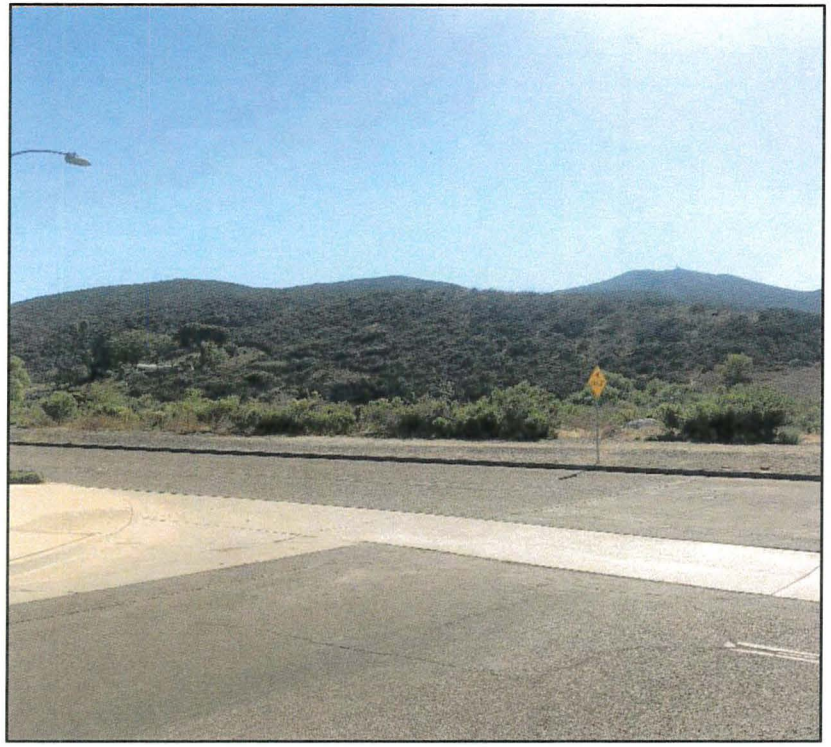
Photograph 3. Photograph illustrates the terrain and fuels modeled in fire scenario numbers 1, 2, and 3 on the east side of the proposed residential development site. Photograph taken facing east. Note existing residential homes that boarder the northern and eastern portions of the project site.

Photograph 4. Photograph illustrates the terrain and fuels modeled in fire scenario numbers 1, 2, and 3 on the west side of the proposed residential development site. Photograph taken facing west. Note existing residential homes that boarder the northern and western portions of the project site.

Tyler Street Fire Protection Plan Project
Fuels Photo Series

Photograph 5. Photograph illustrates the existing residential community along Tyler Street that borders the northern portion of the project site. Photograph taken facing north.

Photograph 6. Photograph illustrates the terrain standing at the end of Tyler Street, facing south towards the project site.

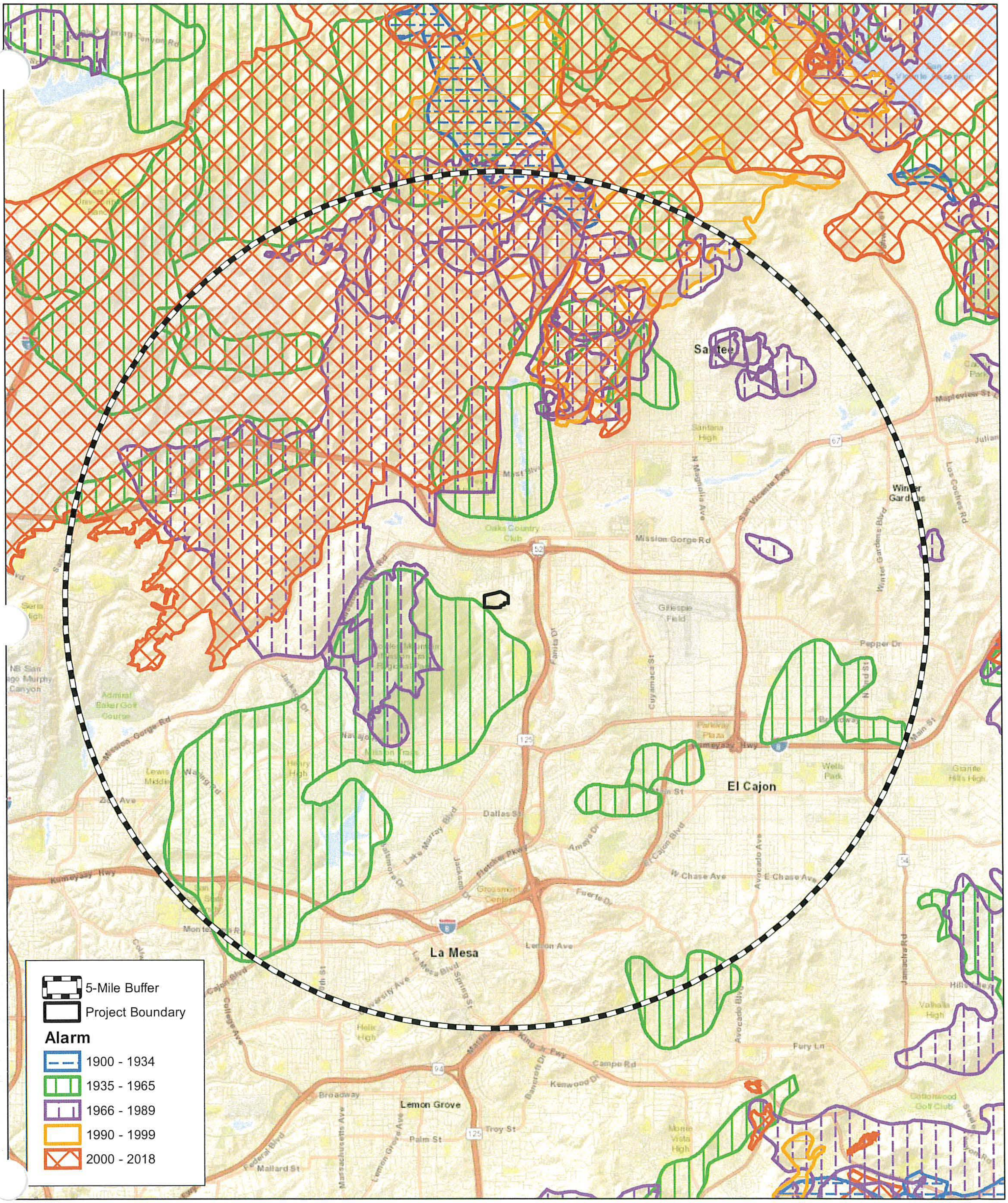


Photograph 7. Photograph illustrates the northeastern side of Cowles Mountain, standing at the intersection of Mesa Road and Mesa Heights Road. Photograph taken facing southwest.

Photograph 8. Photograph illustrates the northeastern side of Cowles Mountain, standing on Mesa Road facing south.

Appendix B

Fire History Map



SOURCE: BASE- ESRI; FIRE DATA-CALFIRE 2018

DUDEK

0 1 2 Miles

APPENDIX B

Fire History Map

Tyler Street Fire Protection Plan

Appendix C

BehavePlus Modeling Runs (97th Percentile Weather)

Inputs: SURFACE, SPOT

Description		Scenario 2: 97th Percentile Peak Weather

Fuel/Vegetation, Surface/Understory

Fuel Model		sh5

Fuel/Vegetation, Overstory

Downwind Canopy Height	ft	4
Downwind Canopy Cover		Open

Fuel Moisture

1-h Fuel Moisture	%	2
10-h Fuel Moisture	%	3
100-h Fuel Moisture	%	
Live Herbaceous Fuel Moisture	%	
Live Woody Fuel Moisture	%	60

Weather

20-ft Wind Speed	mi/h	18, 50
Wind Adjustment Factor		0.4
Direction of Wind Vector (from upslope)	deg	0

Terrain

Slope Steepness	%	32
Ridge-to-Valley Elevation Difference	ft	154
Ridge-to-Valley Horizontal Distance	mi	.14
Spotting Source Location		VB

Run Option Notes

Maximum effective wind speed limit IS imposed [SURFACE].

Fire spread is in the HEADING direction only [SURFACE].

Wind is in specified directions [SURFACE].

Wind and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Output Variables

Surface Fire Rate of Spread (mi/h) [SURFACE]

Surface Fireline Intensity (Btu/ft/s) [SURFACE]

Surface Fire Flame Length (ft) [SURFACE]

Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

Input Worksheet (continued)

Notes

Scenario 2: 97th Percentile Peak Weather

Head Fire

20-ft Wind Speed mi/h	Surface Fire Rate of Spread mi/h	Surface Fireline Intensity Btu/ft/s	Surface Flame Length ft	Surface Fire Spot Dist mi
18	2.0	6021	24.7	0.8
50	6.3	18824	41.6	2.3

Discrete Variable Codes Used
Scenario 2: 97th Percentile Peak Weather

Fuel Model

145	sh5	High load, dry climate shrub (S)

Downwind Canopy Cover

Open	Open

Spotting Source Location

VB	Valley Bottom

Inputs: SURFACE, SPOT

Description		Scenario 3: 97th Percentile Peak Weather

Fuel/Vegetation, Surface/Understory

Fuel Model		sh5

Fuel/Vegetation, Overstory

Downwind Canopy Height	ft	4
Downwind Canopy Cover		Open

Fuel Moisture

1-h Fuel Moisture	%	2
10-h Fuel Moisture	%	3
100-h Fuel Moisture	%	
Live Herbaceous Fuel Moisture	%	
Live Woody Fuel Moisture	%	60

Weather

20-ft Wind Speed	mi/h	18, 50
Wind Adjustment Factor		0.4
Direction of Wind Vector (from upslope)	deg	315

Terrain

Slope Steepness	%	24
Ridge-to-Valley Elevation Difference	ft	183
Ridge-to-Valley Horizontal Distance	mi	0
Spotting Source Location		VB

Run Option Notes

Maximum effective wind speed limit IS imposed [SURFACE].

Fire spread is in the HEADING direction only [SURFACE].

Wind is in specified directions [SURFACE].

Wind and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Output Variables

Surface Fire Rate of Spread (mi/h) [SURFACE]

Surface Fireline Intensity (Btu/ft/s) [SURFACE]

Surface Fire Flame Length (ft) [SURFACE]

Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

Input Worksheet (continued)

Notes

Scenario 3: 97th Percentile Peak Weather

Head Fire

20-ft Wind Speed mi/h	Surface Fire Rate of Spread mi/h	Surface Fireline Intensity Btu/ft/s	Surface Flame Length ft	Surface Fire Spot Dist mi
18	1.9	5737	24.1	0.8
50	6.2	18537	41.4	2.3

Discrete Variable Codes Used
Scenario 3: 97th Percentile Peak Weather

Fuel Model

145	sh5	High load, dry climate shrub (S)

Downwind Canopy Cover

Open	Open

Spotting Source Location

VB	Valley Bottom

Appendix D

BehavePlus Modeling Run (50th Percentile Weather)

Inputs: SURFACE, SPOT

Description		Scenario 1: 50th Percentile Summer Weather

Fuel/Vegetation, Surface/Understory

Fuel Model		sh5

Fuel/Vegetation, Overstory

Downwind Canopy Height	ft	4
Downwind Canopy Cover		Open

Fuel Moisture

1-h Fuel Moisture	%	3
10-h Fuel Moisture	%	6
100-h Fuel Moisture	%	
Live Herbaceous Fuel Moisture	%	
Live Woody Fuel Moisture	%	90

Weather

20-ft Wind Speed	mi/h	19
Wind Adjustment Factor		0.4
Direction of Wind Vector (from upslope)	deg	45

Terrain

Slope Steepness	%	27
Ridge-to-Valley Elevation Difference	ft	195
Ridge-to-Valley Horizontal Distance	mi	0
Spotting Source Location		VB

Run Option Notes

Maximum effective wind speed limit IS imposed [SURFACE].

Fire spread is in the HEADING direction only [SURFACE].

Wind is in specified directions [SURFACE].

Wind and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Output Variables

Surface Fire Rate of Spread (mi/h) [SURFACE]

Surface Fireline Intensity (Btu/ft/s) [SURFACE]

Surface Fire Flame Length (ft) [SURFACE]

Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

Input Worksheet (continued)

Notes

Scenario 1: 50th Percentile Summer Weather

Head Fire

Surface Fire Rate of Spread	1.4	mi/h
Surface Fireline Intensity	3546	Btu/ft/s
Surface Fire Flame Length	19.3	ft
Spot Dist from a Wind Driven Surface Fire	0.7	mi

Discrete Variable Codes Used
Scenario 1: 50th Percentile Summer Weather

Fuel Model

145	sh5	High load, dry climate shrub (S)

Downwind Canopy Cover

Open	Open

Spotting Source Location

VB	Valley Bottom

Appendix E

BehavePlus Modeling Runs (Post Construction)

Inputs: SURFACE, SPOT

Description		Scenario 4: 50th Percentile Summer Weather (Post Const

Fuel/Vegetation, Surface/Understory

Fuel Model		8, gs1

Fuel/Vegetation, Overstory

Downwind Canopy Height	ft	4
Downwind Canopy Cover		open

Fuel Moisture

1-h Fuel Moisture	%	3
10-h Fuel Moisture	%	6
100-h Fuel Moisture	%	8
Live Herbaceous Fuel Moisture	%	60
Live Woody Fuel Moisture	%	90

Weather

20-ft Wind Speed	mi/h	19
Wind Adjustment Factor		0.4
Direction of Wind Vector (from upslope)	deg	45

Terrain

Slope Steepness	%	27
Ridge-to-Valley Elevation Difference	ft	195
Ridge-to-Valley Horizontal Distance	mi	0
Spotting Source Location		VB

Run Option Notes

Maximum effective wind speed limit IS imposed [SURFACE].

Fire spread is in the HEADING direction only [SURFACE].

Wind is in specified directions [SURFACE].

Wind and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Output Variables

Surface Fire Rate of Spread (mi/h) [SURFACE]

Surface Fireline Intensity (Btu/ft/s) [SURFACE]

Surface Fire Flame Length (ft) [SURFACE]

Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

Input Worksheet (continued)

Notes

Scenario 4: 50th Percentile Summer Weather (Post)

Head Fire

Fuel Model	Surface Fire Rate of Spread mi/h	Surface Fireline Intensity Btu/ft/s	Surface Flame Length ft	Surface Fire Spot Dist mi
8	0.1	20	1.8	0.1
gs1	0.4	192	5.1	0.3

Discrete Variable Codes Used
Scenario 4: 50th Percentile Summer Weather (Post)

Fuel Model

8	8	Short needle litter
121	gs1	Low load, dry climate grass-shrub (D)

Downwind Canopy Cover

Open	Open

Spotting Source Location

VB	Valley Bottom

Inputs: SURFACE, SPOT

Description		Scenario 5: 97th Percentile Peak Weather (Post Const.)

Fuel/Vegetation, Surface/Understory

Fuel Model		8, gs1

Fuel/Vegetation, Overstory

Downwind Canopy Height	ft	4
Downwind Canopy Cover		open

Fuel Moisture

1-h Fuel Moisture	%	2
10-h Fuel Moisture	%	3
100-h Fuel Moisture	%	5
Live Herbaceous Fuel Moisture	%	30
Live Woody Fuel Moisture	%	60

Weather

20-ft Wind Speed	mi/h	18, 50
Wind Adjustment Factor		0.4
Direction of Wind Vector (from upslope)	deg	0

Terrain

Slope Steepness	%	32
Ridge-to-Valley Elevation Difference	ft	154
Ridge-to-Valley Horizontal Distance	mi	.14
Spotting Source Location		VB

Run Option Notes

Maximum effective wind speed limit IS imposed [SURFACE].

Fire spread is in the HEADING direction only [SURFACE].

Wind is in specified directions [SURFACE].

Wind and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Output Variables

Surface Fire Rate of Spread (mi/h) [SURFACE]

Surface Fireline Intensity (Btu/ft/s) [SURFACE]

Surface Fire Flame Length (ft) [SURFACE]

Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

Input Worksheet (continued)

Notes

Scenario 5: 97th Percentile Peak Weather (Post Const.)

Head Fire

Surface Fire Rate of Spread (mi/h)

Fuel Model	20-ft Wind Speed mi/h	
	18	50
8	0.1	0.1
gs1	0.7	2.4

Scenario 5: 97th Percentile Peak Weather (Post Const.)

Head Fire

Surface Fireline Intensity (Btu/ft/s)

Fuel Model	20-ft Wind Speed mi/h	
	18	50
8	24	46
gs1	377	1283

Scenario 5: 97th Percentile Peak Weather (Post Const.)

Head Fire

Surface Fire Flame Length (ft)

Fuel Model	20-ft Wind Speed mi/h	
	18	50
8	2.0	2.6
gs1	6.9	12.1

Scenario 5: 97th Percentile Peak Weather (Post Const.)

Head Fire

Spot Dist from a Wind Driven Surface Fire (mi)

Fuel Model	20-ft Wind Speed mi/h	
	18	50
8	0.1	0.3
gs1	0.3	1.0

Discrete Variable Codes Used
Scenario 5: 97th Percentile Peak Weather (Post Const.)

Fuel Model

8	8	Short needle litter
121	gs1	Low load, dry climate grass-shrub (D)

Downwind Canopy Cover

Open	Open

Spotting Source Location

VB	Valley Bottom

Inputs: SURFACE, SPOT

Description		Scenario 6: 97th Percentile Peak Weather (Post Const.)

Fuel/Vegetation, Surface/Understory

Fuel Model		8, gs1

Fuel/Vegetation, Overstory

Downwind Canopy Height	ft	4
Downwind Canopy Cover		open

Fuel Moisture

1-h Fuel Moisture	%	2
10-h Fuel Moisture	%	3
100-h Fuel Moisture	%	5
Live Herbaceous Fuel Moisture	%	30
Live Woody Fuel Moisture	%	60

Weather

20-ft Wind Speed	mi/h	18, 50
Wind Adjustment Factor		0.4
Direction of Wind Vector (from upslope)	deg	315

Terrain

Slope Steepness	%	24
Ridge-to-Valley Elevation Difference	ft	183
Ridge-to-Valley Horizontal Distance	mi	0
Spotting Source Location		VB

Run Option Notes

Maximum effective wind speed limit IS imposed [SURFACE].

Fire spread is in the HEADING direction only [SURFACE].

Wind is in specified directions [SURFACE].

Wind and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Output Variables

Surface Fire Rate of Spread (mi/h) [SURFACE]

Surface Fireline Intensity (Btu/ft/s) [SURFACE]

Surface Fire Flame Length (ft) [SURFACE]

Spot Dist from a Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

Input Worksheet (continued)

Notes

Scenario 6: 97th Percentile Peak Weather (Post Const.)

Head Fire

Surface Fire Rate of Spread (mi/h)

Fuel Model	20-ft Wind Speed mi/h	
	18	50
8	0.1	0.1
gs1	0.7	2.4

Scenario 6: 97th Percentile Peak Weather (Post Const.)

Head Fire

Surface Fireline Intensity (Btu/ft/s)

Fuel Model	20-ft Wind Speed mi/h	
	18	50
8	23	46
gs1	358	1283

Scenario 6: 97th Percentile Peak Weather (Post Const.)

Head Fire

Surface Fire Flame Length (ft)

Fuel Model	20-ft Wind Speed mi/h	
	18	50
8	1.9	2.6
gs1	6.7	12.1

Scenario 6: 97th Percentile Peak Weather (Post Const.)

Head Fire

Spot Dist from a Wind Driven Surface Fire (mi)

Fuel Model	20-ft Wind Speed mi/h	
	18	50
8	0.1	0.3
gs1	0.3	1.0

Discrete Variable Codes Used
Scenario 6: 97th Percentile Peak Weather (Post Const.)

Fuel Model

8	8	Short needle litter
121	gs1	Low load, dry climate grass-shrub (D)

Downwind Canopy Cover

Open	Open

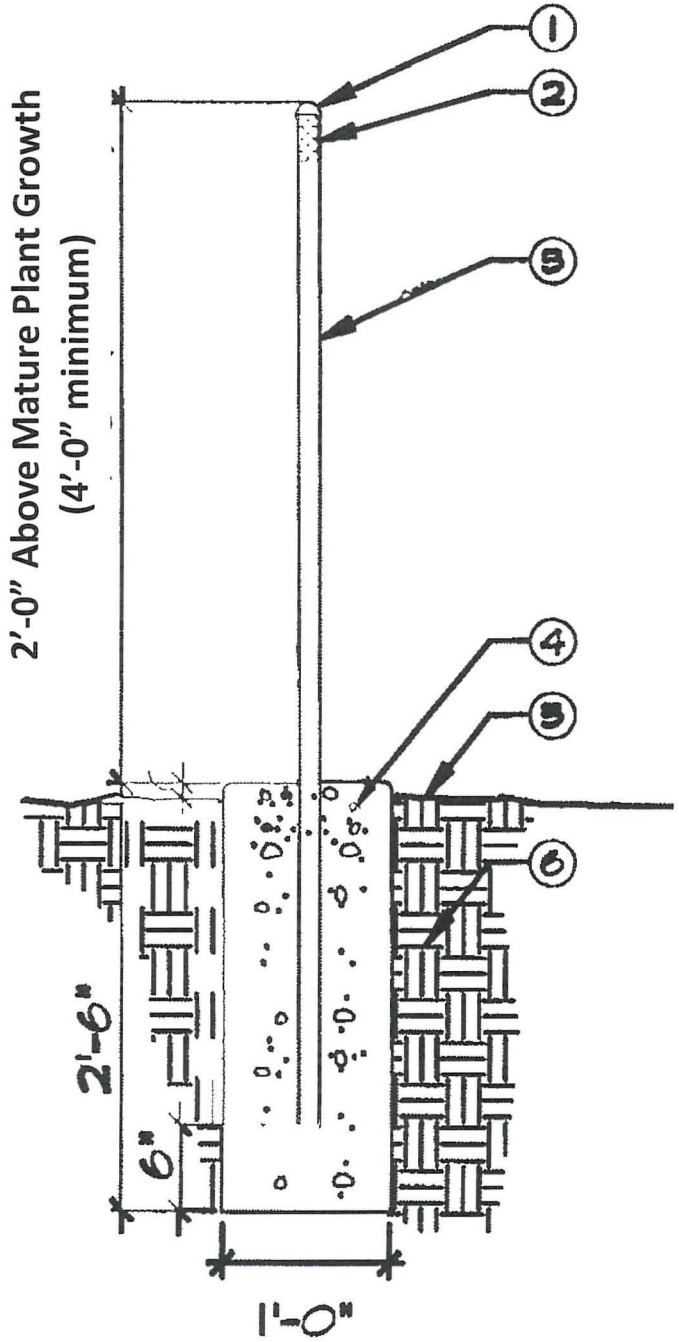
Spotting Source Location

VB	Valley Bottom

Appendix F

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 G

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

NNotes:

1 This list was prepared by Dudek for Tyler Street 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. 2021. Santee Municipal Code, Chapter 11.18.020 Section 4907.2.1 Fuel Modification Defensible Space, Zone One. January 2022.

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 H

Type X Fire Rated Gypsum Fire Safety Information Sheet

CertainTeed

Veneer Plaster Base

Gypsum Board

Product Data and Submittal

Product Description

CertainTeed Veneer Plaster Base is an interior gypsum board with a specially formulated face paper for use under gypsum veneer plaster. It consists of a solid set, fire-resistive gypsum core enclosed in a highly absorptive paper surface.

Basic Uses

CertainTeed Veneer Plaster Base is ideal for virtually any type of one- or two-coat veneer plaster system. It can be used in commercial and residential wall and ceiling construction, including wood or steel framing, or furring and masonry.

Advantages

- Rapid installation reduces overall construction time.
- Significantly lower cost than regular plastering with equally attractive surface appearance.
- Consistently high quality, defect-free board.
- Uniformly flat, attractive appearance.
- High edge hardness.
- No wavy edges, warps, bows or deformities.
- Uniform high-strength cores eliminate crumbling, cracking.
- Edge tapers consistent to form perfect joints.
- GREENGUARD Gold Certified

Product Data

Thickness: 5/8″ (15.9 mm) Type X

Width: 4′ (1220 mm)

Length: 8′ (2440 mm), 12′ (3660 mm)

Weight (approx.): 2.25 lb/ft^2 (11.0 kg/m^2)

Core: Gypsum Type X (noncombustible)

Edge: Tapered, paper bound – factory finished

End: Square – factory cut

Packaging: Two pieces per bundle, face-to-face and end-taped.

Custom lengths may be available on special order. Consult your CertainTeed sales representative.

Technical Data

Surface Burning Characteristics

All CertainTeed Gypsum Board has a Flame Spread rating of 15 and Smoke Developed rating of 0, in accordance with ASTM E84, (UL 723, CAN/ULC-S102). ULC 0/0.

Fire Resistance

Fire resistance tests are conducted in accordance with ASTM E119, (ANSI/UL 263, CAN/ULC-S101).

CertainTeed Veneer Plaster Base Type X is Classified by Underwriters Laboratories Inc. for USA and Canada. Fire ratings equivalent to those of drywall systems can be obtained with appropriate application of veneer plaster, framing member size and spacing, and fasteners. Underwriters Laboratories tests have proven that joint finishing is not required for the rating in certain assemblies. For fire resistance ratings, refer to the Gypsum Association Fire Resistance Design Manual GA-600 and UL /cUL/ULC Fire Resistance Directory.

UL/ cUL/ ULC Designation

Type X-1

Applicable Standards and References

- ASTM C1396
- ASTM C843
- ASTM C844
- CAN/CSA-A82.27
- Gypsum Association - Veneer Plaster
- International Building Code (IBC)
- International Residential Code (IRC)
- National Building Code of Canada (NBCC)

Installation

Limitations

- For interior use only.
- Avoid exposure to continuous moisture.

Continued on back

Job Name _____

Contractor _____ **Date** _____

Products Specified: _____

Submittal Approvals
(Stamps or Signatures)

CertainTeed
SAINT-GOBAIN

- Not recommended for continuous exposure to temperatures exceeding 125°F (52°C).
- Framing spacing is limited and partition heights reduced compared to some standard constructions.
- Boards should be stacked flat with care taken to prevent sagging or damage to edges, ends and surfaces.
- Storing board lengthwise, leaning against the framing is not recommended.
- Boards should be carried, not dragged, to place of installation to prevent damaging finished edges.

Recommendations
Installation of CertainTeed Veneer Plaster Base should be consistent with methods described in the standards and references noted.

Decoration
Temperature, humidity, water's mineral content and variances in aggregates can cause shading discoloration in plaster. Therefore, veneer plaster should not be considered a final finish; plaster should be painted or decorated. Consult paint manufacturers for compatible products.

BIM/CAD Information

The BIM and CAD UL fire rated assemblies and sound assemblies can be found on CertainTeed's BIM and CAD Design Studio at certainteed.concora.com. CertainTeed's BIM and CAD Design Studio provides BIM and CAD details to many UL fire rated assemblies and sound assemblies in easy to view experience. Plus, downloadable Revit and DWG and PDF CAD Details are available.

Sustainability

Sustainable documentation, including recycled content, EPD's, HPD's, VOC Certifications, can be found at certainteed.ecomedes.com.

Notice

The information in this document is subject to change without notice. CertainTeed assumes no responsibility for any errors that may inadvertently appear in this document.

For Fire Resistance, no warranty is made other than conformance to the standard under which the assembly was tested. Minor discrepancies may exist in the values of ratings, attributable to changes inmaterials and standards, as well as differences between testing facilities. Assemblies are listed as "combustible" (wood framing) and "noncombustible" (concrete and/or steel construction).

The Health Product Declaration® logo is a registered trademark of HPD Collaborative

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Important Fire Safety Information
5/8" Type X Gypsum Wallboard
Standards, Testing, and Certification

Summary

- Type X gypsum wallboard, 5/8" in thickness ("5/8" type X wallboard"), is manufactured for use as one component of an assembly/system (such as a wall) where a fire resistance rating is required in a residential, commercial, or other structure by an applicable building code.

- 5/8" type X wallboard is required to be manufactured in accordance with established ASTM standards defining type X wallboard as that which provides not less than one-hour fire resistance when tested in specified building assemblies/systems in a laboratory setting under certain controlled conditions and pursuant to certain ASTM procedures.

- Because ASTM procedures require that fire tests be conducted on complete building assemblies/systems and not just on the wallboard by itself, the ability of a particular 5/8" type X wallboard product to pass a specific ASTM fire test may well depend on factors other than the fire resistance of the wallboard being tested. These factors include the other components used to construct the building system being tested, the manner in which the system is constructed, and the inherent variability of ASTM fire tests.

- Independent third party organizations, such as Underwriters Laboratories Inc. ("UL"), may authorize manufacturers to certify or label their 5/8" type X wallboard as acceptable for use in one-hour fire rated systems based on criteria established by the third party organizations. The third party organizations may approve changes to certified formulations using criteria they believe appropriate, such as new full-scale ASTM fire tests, small-scale fire tests, or engineering studies and evaluations, and without requiring a full-scale ASTM one-hour fire test. Accordingly, the fact that a particular 5/8 " type X wallboard product has been certified as acceptable for use in one-hour fire rated systems by a third party organization does not necessarily mean that wallboard made according to that specific formulation has been subjected to a full-scale ASTM one hour fire test.

- Given the very different circumstances that may exist from one fire to another, the differences between conditions in an actual fire and the laboratory conditions in which a test is conducted, and the inherent variability of ASTM fire tests, passing an ASTM fire test in a controlled laboratory setting or certifying or labeling of 5/8" type X wallboard as acceptable for use in one-hour fire rated assemblies/systems under third party certification or labeling procedures does not mean that either a particular assembly/system incorporating 5/8" type X wallboard or any given piece of 5/8" type X wallboard will necessarily provide "one-hour fire protection" in an actual fire or last for an hour in a new laboratory fire test.

- Even if 5/8" type X wallboard is referred to using terms like "one-hour board" or "has a one-hour fire rating," this does not mean that either a particular assembly/system incorporating 5/8" type X wallboard or any given piece of 5/8" type X wallboard will necessarily last for an hour in a new laboratory fire test or provide "one hour fire protection" in an actual fire.

- Once a 5/8" type X wallboard formula has been certified by a third party organization, the company using that formula to manufacture 5/8" type X wallboard does not have to conduct periodic fire tests on that wallboard as long as the company follows the procedures established by that third party organization to ensure that the wallboard is manufactured in compliance with the certified formula.

Background and Discussion

5/8" Type X gypsum wallboard, 5/8" in thickness, is currently manufactured in accordance with ASTM Standard C 36/1396. One section of ASTM C 36/1396 requires type X gypsum wallboard to meet specific requirements when tested using the test method defined in an ASTM Standard, the E 119 test, *Standard Test Method for Fire Tests of Building Construction and Materials*. Additionally, all gypsum wallboard manufacturers in the United States subscribe to an independent third party certification and labeling service such as UL to ensure product consistency and quality.

ASTM E 119 was initially published in 1918 (as ASTM C 19) and has been used continuously since then as the principal method to test the fire-resistance of construction assemblies/systems. (Similar protocols from other standards groups or laboratories were developed later and are used in some cases.) Refinements have been made in the standard since 1918; however, several of its test criteria, including the conditions required to "pass" an individual fire test, have remained essentially unchanged.

The test method described in the ASTM E 119 standard evaluates (in terms of endurance time) "the ability of an assembly[/system] to contain a fire or to retain its structural integrity, or both, during the test conditions imposed by the standard." By the standard's own definition, ASTM E 119 does not assess individual materials or products for their fire-resistance characteristics. ASTM E 119 does, however, generate results that can be used to evaluate the general fire resistance of **assemblies/systems** made up of multiple components, such as walls, columns, slabs, and floor- and roof-ceiling systems under laboratory conditions.

The ASTM E 119 standard does not contain specific details for construction of the test furnace. Since test furnaces are subject to variation due to individual characteristics of construction and design, including ventilation, atmospheric conditions, and general thermal tendencies, test results are typically not fully repeatable or reproducible from one laboratory to another. Test results attained in an E 119 test are not precise predictors of future performance. Additionally, differences in assembly/system components and construction methods, the design and control features of individual furnaces, and other variables regarding the testing regimen, can cause wide fluctuations in ASTM E 119 test results. A fire test, therefore, is a snapshot of a single assembly/system at a given time that includes the measurement of the performance of a specific assembly/system, composed of specific materials, constructed in a specific test furnace, on a specific day. This simply means that for a "one-hour fire rating" of a gypsum board assembly/system, all requirements of an ASTM E 119 test were successfully met in a testing laboratory furnace for at least 59 minutes and 30 seconds for that specific assembly/system and with those specific components of the assembly/system.

The ASTM E 119 test method does not incorporate all dynamics essential for fire hazard analysis or fire risk assessment of the assemblies/systems under conditions in an actual fire situation. The results of an ASTM E 119 test, therefore, should be regarded as one component among a variety of factors used to assess the potential of a system to perform as part of a structure.

Model building codes reference the ASTM E 119 standard test method (or one of its closely allied counterparts.) Gypsum board systems are tested based on the requirements of the ASTM E 119 standard. Referencing the same test method(s) by the building codes facilitates the descriptions and comparisons of fire resistance ratings of assemblies/systems that have been objectively evaluated. Numerical fire resistance ratings created by ASTM E 119 tests may be considered as benchmarks for comparison purposes. The higher the numerical rating (i.e., one, two, three, or four hour(s)), the longer the assembly's/system's comparative endurance. The hourly fire resistance ratings found in commercial and residential building codes that refer to an ASTM E 119 test do not imply that a specific assembly/system will remain intact for the prescribed time of the hourly rating in an actual fire situation.

Fire resistance classifications are based on results of tests conducted on assemblies/systems created with specific materials and built in a specified manner; therefore, variations from the test conditions or the construction specifications (including, but not limited to, the type and size of materials and the method of construction) will affect the results of fire tests. Because fire exposure conditions vary with changes in a wide variety of factors, including the amount, nature, and distribution of available fuel; ventilation; and the size, configuration, and other characteristics of the compartment, the test method contained in the ASTM E 119 standard should not be considered to be representative of all fire conditions. Fire resistance ratings created through use of the ASTM E 119 test method reflect a relative measure of comparative assembly's/system's performance under specific fire test conditions. ASTM E 119 test results should not be construed as having determined performance of an assembly/system under different conditions.

To maintain industry-wide quality assurance standards for 5/8" type X gypsum wallboard, the Gypsum Association requires that all member companies relying on the generic assemblies/systems contained in the Gypsum Association's *Fire Resistance Design Manual* subscribe to an on-going, third-party, in-plant product inspection and labeling service. This objective certification and labeling process ensures that manufacturers continue to manufacture the same quality of product as that originally tested. For more information on Underwriters Laboratories testing, certification, follow-up, and labeling procedures, visit its Web site at http://www.ul.com.

Appendix I

OSFM Approved Vulcan - Listing_2192:0100

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM

LISTING SERVICE

LISTING No. 8165-2192:0500

CATEGORY: 8165 -- VENTS FOR WILDLAND URBAN INTERFACE (W.U.I.)

LISTEE: Vulcan Technologies8 Commercial Blvd, Suite E, Novato, CA 94949
Contact: Larry Dumm (916) 626-2400 Fax (916) 647-0477
Email: Larry@newcalmetals.com

DESIGN: Models VER2, VER2M, VER3, VER3M, VER4, VER4M, and VER6M Vulcan Eave Round Vents. Products are in sizes 2", 3", 4", or 6" diameter opening with a 1/4" flange, and a depth of 3/4". The vents are manufactured out of 0.020" aluminum incorporating a 5mm hexagonal aluminum matrix core made of 0.05mm aluminum foil with an intumescent coating underneath the louver cap. Models with "M" contain a stainless steel, type 304 woven, 1/16" opening mesh screen, installed between the louvers and the honeycomb core.

Refer to manufacturer's installation instructions and product data sheets.

RATING: Tested in accordance with ASTM E2886

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes and ordinances, and in a manner acceptable to the authority having jurisdiction.

MARKING: Listee's name, model number, rating, and SFM label.

APPROVAL: Listed as eave vents for use in the Wildland Urban Interface Areas for vertical and horizontal installation only. Refer to listee's Installation Instruction Manual for details.

9-17-21 VWW

This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

Date Issued: **September 28, 2021** *Listing Expires* **June 30, 2022**

Authorized By: ***DAVID CASTILLO,**, M.E., F.P.E.*

Fire Engineering Division

Appendix J

Standard O'Hagin Ember Resistant Vent Fire Safety Information Sheet

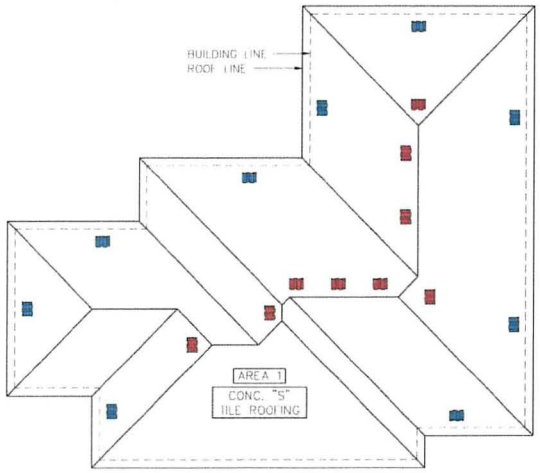
Free Architectural Design Services

How Many Attic Vents Do I Need?

Send us your plans. Don't have plans? No problem. Provide us with your address and we'll figure out the rest.

Email to: vent@ohagin.com

- Let us help you with our FREE architectural and design services!
- We can have your attic ventilation installation plan created in a matter of days.
- A sample of what you get is shown below and is all your contractor needs to properly ventilate your attic space!



LEGEND	NOTES
O'HAGIN STANDARD* "S" STYLE VENTS FOR TILE ROOFS 97.50 SQUARE INCHES OF NFVA** (ICC-ES LEGACY REPORT 9650.A) — HIGH*** (EXHAUST) LOW*** (INTAKE)	ALL REQUIRED ATTIC VENTILATION SHALL COMPLY WITH THE INTERNATIONAL RESIDENTIAL CODE, (2015); CHAPTER 8 ROOF-CEILING CONSTRUCTION, (PAGE 409); SECTION R806 ROOF VENTILATION.
	DO NOT INSTALL O'HAGIN VENTS BELOW AREAS OF CONCENTRATED WATER RUNOFF. PLACEMENT ASSUMES GUTTERS ARE INSTALLED IN ALL APPLICABLE AREAS.
	FOR INSTALLATION INSTRUCTIONS, TECHNICAL BULLETINS, RECOMMENDED PAINTING PROCEDURES AND WARRANTY INFORMATION PLEASE VISIT O'HAGIN'S WEBSITE AT WWW.OHAGIN.COM.
*INDEPENDENT LABORATORY TESTED TO RESIST THE INTRUSION OF WIND-DRIVEN RAIN & SNOW (MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED) SEE NOA.	FOR HIGH WIND AREAS (70-110 MPH) OR WILDLAND URBAN INTERFACE (WUI) APPLICATIONS, PLEASE CONTACT O'HAGIN TOLL FREE O'HAGIN TOLL FREE AT 877/324-0444
**NET FREE VENTILATION AREA (FIGURES BASED ON INDEPENDENT EVALUATION REPORTS)	O'HAGIN VENTS ARE DESIGNED TO BE PART OF A COMPLETE ROOFING SYSTEM. FAILURE TO PROPERLY INSTALL ALL COMPONENTS WILL NEGATIVELY IMPACT OVERALL PERFORMANCE AND WILL VOID WARRANTY PROTECTIONS.
***REFER TO NOTES 3 & 4 ON ATTACHED OVERVIEW FOR O'HAGIN'S HIGH & LOW VENT PLACEMENT INSTRUCTIONS.	

ATTIC VENTILATION METHOD (O'HAGIN'S BALANCED SYSTEM)

ATTIC AREAS	ATTIC SQUARE FEET	APPLIED RULES OR EXCEPTIONS	SQUARE INCHES NFVA**REQUIRED	O'HAGIN VENTS REQUIRED	SQUARE INCHES NFVA**PROVIDED
AREA 1	2931.00	1/300	1407.00	8 HIGH 8 LOW	1560.00
TOTALS	2931.00	N/A	1407.00	16 @ 97.50 S.I.	1560.00

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Free Technical Support Services

FOR YOUR PLANNING, DESIGN, INSTALLATION, AND EDUCATIONAL NEEDS. O'HAGIN OFFERS A RANGE OF FREE SERVICES:

Free Architectural/Design Support Services

- Prompt analysis of roof plans in AutoCAD or other format
- Calculate the number of vents required based on local building codes
- Provide specific recommendations for vent placement

Free Pre And Post-Installation Support

- Meetings with builders, consultants, building code officials, or other members of your design and construction team
- Support regarding any aspect of our product performance or installation

Additional Information

Approvals

- O'Hagin is a recognized leader in attic ventilation testing and design
- O'Hagin products hold local and national approvals including:
  - ICC-ES Legacy Report, 9650-A
  - Class A fire rated
  - Miami-Dade County Product Control Approved.

For complete testing information, call: (877) 324-0444

Instructions

Complete step-by-step installation instructions are available on our website at www.ohagin.com, on our *YouTube* channel (see link below) or by calling our Customer Service Team toll free at (877) 324-0444

O'HAGIN
Superior Attic Ventilation Products

Check Out O'Hagin's YouTube Channel
YOUTUBE.COM/OHAGINLLC

Phone: (877) 324.0444 | Fax: (707) 588.9187
www.ohagin.com

O'HAGIN
Superior Attic Ventilation Products

Profile Specific Attic Vents
For Tile Roof Applications

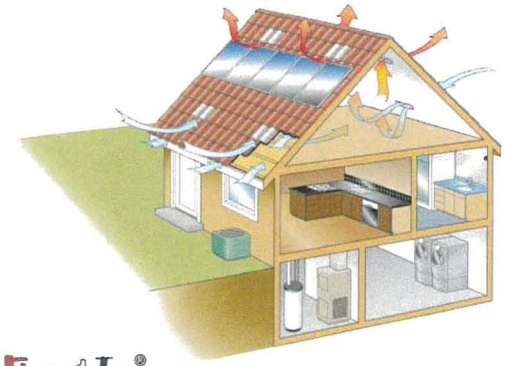
Optional Fire & Ice® Attic Vents - Resistant To Flames, Embers, Rain & Snow

Made In The U.S.A. With U.S. Steel

Visit O'Hagin's Website At
WWW.OHAGIN.COM

210 Classic Court, Suite 100
Rohnert Park • CA 94928
Phone: (877) 324-0444 • Fax: (707) 588-9187

Benefits of Attic Ventilation



- **Fire & Ice® ATTIC VENTS** Upgrade to these vents in wildfire danger areas - these vents block the entry of firebrands (embers)
- **VOID VALIDATE THE WARRANTY** Most manufacturers of roofing products require **ADEQUATE** attic ventilation to validate their warranties.
- **FITS WITH SOLAR SYSTEMS** Low-profile design is compatible with most panel installations and fits under most rack mount systems.
- **EXTEND THE ROOF'S LIFE** Ventilation protects attic insulation and rafter cavities from moisture, thereby reducing the risk of mold and dry rot.
- **MAINTAIN CURB APPEAL** When painted to match, O'Hagin attic ventilation systems blend into surrounding roofing material.
- **ENHANCES ABOVE-SHEATHING VENTILATION (ASV)** Increases airflow and can increase energy savings in cool roof systems.
- **CONSERVE ENERGY** O'Hagin attic vents are completely passive, reducing energy costs related to heating and cooling.
- **REMOVE TRAPPED GASES** Proper attic ventilation facilitates the removal of hot, trapped gases and fumes, a major cause of indoor air pollution, allergies and related health problems.
- **REDUCE MOISTURE BUILDUP** Proper attic ventilation reduces moisture build up from indoor water sources and condensation that occures naturally in the attic

MADE IN THE U.S.A. WITH U.S. STEEL

Superior Line of Attic Vents

- Patented design
- Use our vents both high (exhaust) and low (intake) for a "balanced" system
- Profile specific to seamlessly blend into surrounding roof tiles. We offer attic vents to match all tile profiles.
- Manufactured with standard finish 26 gauge G-90 galvanized steel (20-year warranty), .032" aluminum, or 16 oz. copper (50-year warranty)
- Passive ventilation – no motors or moving parts.

Net Free Ventilation Area

WIRE MESH	MODEL: FLAT	MODEL: S	MODEL: M
STANDARD 1/4"	98.75 sq. in.	97.50 sq. in.	86.25 sq. in.
OPTIONAL 1/8"	88.87 sq. in.	87.75 sq. in.	77.63 sq. in.

*Figures based on independent evaluation reports.

Fire & Ice® Line of Attic Vents

- Class A fire-rated vent*
- Flame, ember, rain and snow resistant*
- Complies with Wildland Urban Interface Code requirements and accepted for use by many local fire officials for installation in Wildland Urban Interface (WUI) zones
- Interior stainless-steel matrix system
- May be used in place of under-eave and soffit vents:
  - superior airflow
  - balanced airflow
  - decreased construction costs

* Quantified by independent laboratory testing

Fire Smart Build Video

Photos of O'Hagin Fire & Ice® Attic Vents During Extreme Test Conditions

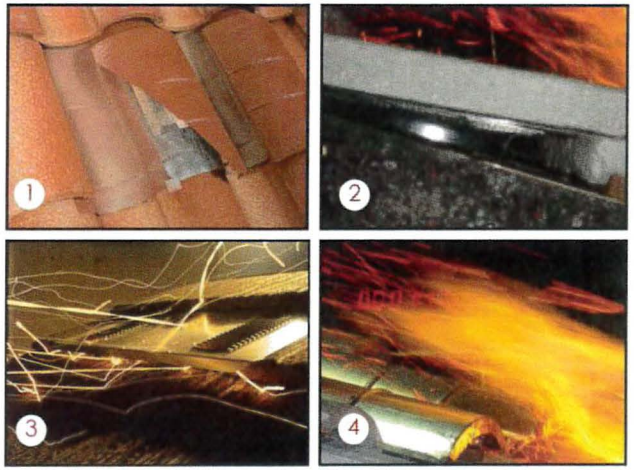


Photo captions:

1. FIRE & ICE® with portion of vent cut away to show stainless-steel matrix and highlight flame and ember resistant airway into attic space;
2. FIRE & ICE® vent installed with concrete flat tile during flame and ember test. Side view shows batten cavity protected from flame and ember intrusion;
3.-4. FIRE & ICE® vents shown during flame and ember tests

O'Hagin vents are manufactured and protected under one or more of the following patents (other U.S. and foreign patents are pending): D456,531; D457,234; D458,391; D458,392; D469,889; D479,885; D504,172; D512,774; D549,316; 6,050,039; 6,129,628; 6,354,051; 6,390,914; 6,447,390; 6,491,579; 9,011,221

Appendix K

Kroy Vinyl Fencing Fire Rating

Kroy Vinyl Fencing Fire Rating

CertainTeed LLC
Jackson Development Center
803 Belden Road
Jackson, MI 49203
517-780-9185

December 4, 2019

Product Compliance Memo

Re: CertainTeed Bufftech Fence and EverNew Deck and Railing Products
Fire Properties of Extruded Products

CertainTeed Bufftech Fence and EverNew Deck and Railing extruded products, and or material used in their manufacture, have been tested in accordance with and comply with the following fire standards / classifications:

Flame Spread Rating[1]
ASTM E-84 *Standard Test Method for Surface Burning Characteristics of Building Materials.* When tested in accordance with ASTM E-84, CertainTeed Bufftech and EverNew extruded products exhibited a Flame Spread Index of 15[1], complying with the requirements for a Class A, Flame Spread Classification as prescribed by the 2015 and 2018 IBC / IRC, and 2017 Florida Building Code.

Ignition Temperature[2]
ASTM D1929, *Standard Test Method for Determining Ignition Temperature of Plastic.* Extruded material used in the manufacture of CertainTeed Bufftech and EverNew products, tested in accordance with ASTM D1929, provided values for Self-Ignition / Flash Ignition temperatures of 878°F (470°C) / 734°F (390°C) respectively.

Rate of Burn[2]
ASTM D635, *Standard Test Method for Rate of Burn and/or Extent and Time of Burning of Plastics.* When tested in accordance with ASTM D635, extruded material used in the manufacture of CertainTeed Bufftech and EverNew products exhibited No Sustained Burn, meeting the requirement for a Class CC1 plastic, and can be considered self-extinguishing.

For inquires or additional information regarding the above communication, please contact us.

Neil J. Sexton, A.I.A.
Compliance and Technical Services Manager
CertainTeed LLC

1 Intertek, Report No. 06201.06-121-34, dated November 27, 2017
2 Intertek, Report No. 17613.03-106-10, dated January 22, 2019

This Product Compliance Memo and the information provided herein by CertainTeed does not constitute approval, acceptance or the appropriateness of its products for a specific use, application or installation. All state and local building code requirements must be followed, and where found more stringent than CertainTeed's published literature or this memo, state and local code requirements will take precedence. Refer to CertainTeed's published Installation Guides for specific product requirements.

www.certainteed.com

Appendix L

OSFM Approved Hoover Fire X Treated Wood Sheet

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM

LISTING SERVICE

LISTING No. 2520-1701:0100

CATEGORY: 2520 -- TREATED LUMBER

LISTEE: HOOVER TREATED WOOD PRODUCTS, INC.154 WIRE ROAD, THOMSON, GA 30824
Contact: Chris Athari (706) 755-5350 Fax (706) 595-6600
Email: cathari@frtw.com

DESIGN: Treated Lumber with EXTERIOR FIRE X. Products are pressure impregnated with "EXTERIOR FIRE X" fire retardant chemical. EXTERIOR FIRE X covers the following types of lumber: Douglas Fir, Southern Yellow Pine, Western Red Cedar, and Redwood Lumber. Refer to listee's printed installation instructions for additional detailed product description and constructions.

RATING: Douglas Fir: 15 Flame Spread; 30 Smoke Developed
Southern Yellow Pine:15 Flame Spread; 50 Smoke Developed
Western Red Cedar:10 Flame Spread; 30-105 Smoke Developed
Redwood:10 Flame Spread; 10-115 Smoke Developed

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes & ordinances and in a manner acceptable to the authority having jurisdiction.

MARKING: Listee's name, product identification, classification, and Underwriter's Laboratory label.

APPROVAL: Listed as exterior type fire retardant treated lumber. Also approved for use as ignition resistant materials as specified in Chapter 7A of the *California Building Code. The lumber must be pressure treated with the fire retardant chemical at the factory under authorized service inspection.

Corrected 9-25-12 il

This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

Date Issued: **July 01, 2021** *Listing Expires* **June 30, 2022**

Authorized By: ***DAVID CASTILLO,**, M.E., F.P.E.*

Fire Engineering Division

APPENDIX G

CITY OF SANTEE

PRIORITY DEVELOPMENT PROJECT (PDP)

STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)

(Vacant) TYLER STREET
SANTEE CA, 92071

ASSESSOR'S PARCEL NUMBER(S):
386-290-08,09,10,13,14,20,22,24 & 26
ENGINEER OF WORK:

REGISTERED PROFESSIONAL ENGINEER
LAWRENCE W. WALSH
No. C 46316
CIVIL
STATE OF CALIFORNIA

Lawrence W. Walsh, RCE 46316

PREPARED FOR:

Mark Steve, Trustee
Steve Family Trust #3 dated 6/21/94
4204 Jutland Drive
San Diego, CA 92117
619-204-2218

PDP SWQMP & PLANS PREPARED BY:

Walsh Engineering & Surveying, Inc.
607 Aldwych Road
El Cajon, CA 92020
619-588-6747

PDP SWQMP Template Date: February 2016
PDP SWQMP Preparation Date: November 16, 2016

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FORM I-2 Project Type Determination Checklist (Standard Project or PDP)

FORM I-3B Site Information Checklist for PDPs

FORM I-4 Source Control BMP Checklist for All Development Projects

FORM I-5 Site Design BMP Checklist for All Development Projects

FORM I-6 Summary of PDP Structural BMPs

Attachment 1: Backup for PDP Pollutant Control BMPs

- Attachment 1a: DMA Exhibit
- Attachment 1b: Tabular Summary of DMAs and Design Capture Volume Calculations
- Attachment 1c: Harvest and Use Feasibility Screening (when applicable)
- Attachment 1d: Categorization of Infiltration Feasibility Condition (when applicable)
- Attachment 1e: Pollutant Control BMP Design Worksheets / Calculations

Attachment 2: Backup for PDP Hydromodification Control Measures

- Attachment 2a: Hydromodification Management Exhibit
- Attachment 2b: Management of Critical Coarse Sediment Yield Areas
- Attachment 2c: Geomorphic Assessment of Receiving Channels
- Attachment 2d: Flow Control Facility Design

Attachment 3: Structural BMP Maintenance Plan

- Attachment 3a: B Structural BMP Maintenance Thresholds and Actions
- Attachment 3b: Draft Maintenance Agreement (when applicable)

Attachment 4: Copy of Plan Sheets Showing Permanent Storm Water BMPs

ACRONYMS

APN	Assessor's Parcel Number
BMP	Best Management Practice
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
NRCS	Natural Resources Conservation Service
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWQMP	Storm Water Quality Management Plan

SWQMP PREPARER'S
CERTIFICATION PAGE

Project Name: Tyler Street
Permit Application Number: TM 2017-01, DR 2017-01

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Santee BMP Design Manual, which is a design manual for compliance with local City of Santee and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

I have read and understand that the City of Santee has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by the City of Santee is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Lawrence W. Walsh

Engineer of Work's Signature

Lawrence W. Walsh

Print Name

Walsh Engineering & Surveying, Inc.

Company

4/2/21

Date

Engineer's Seal:

PDP SWQMP Template Date: February 2016
PDP SWQMP Preparation Date: November 16, 2016

SWQMP PROJECT OWNER'S
CERTIFICATION PAGE

Project Name: Tyler Street
Permit Application Number: TM 2017-01, DR 2017-01

PROJECT OWNER'S CERTIFICATION

This PDP SWQMP has been prepared for Mark Steve, Trustee, Steve Family Trust #3 dated 6/21/94 by Walsh Engineering & Surveying, Inc. The PDP SWQMP is intended to comply with the PDP requirements of the City of Santee BMP Design Manual, which is a design manual for compliance with local City of Santee and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan. Once the undersigned transfers its interests in the property, its successor-in-interest shall bear the aforementioned responsibility to implement the best management practices (BMPs) described within this plan, including ensuring on-going operation and maintenance of structural BMPs. A signed copy of this document shall be available on the subject property into perpetuity.

Project Owner's Signature

Mark Steve, Trustee, Steve Family Trust #3 dated 6/21/94

Print Name

OWNER

Company

4-3-2021

Date

SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

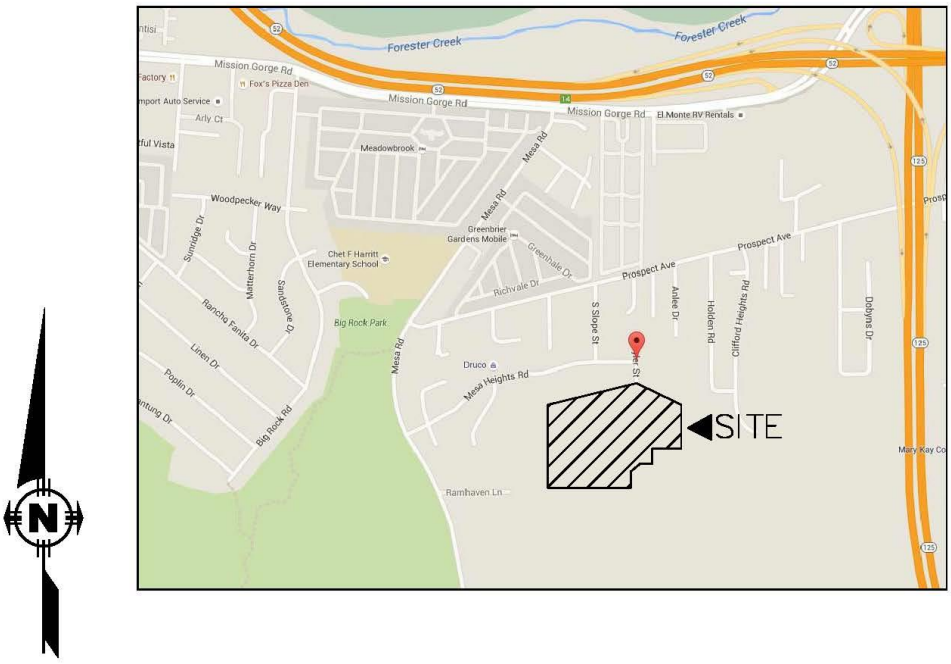
Submittal Number	Date	Project Status	Summary of Changes
1	11-16-16	☐ Preliminary Design / Planning/ CEQA ☐ Final Design	Initial Submittal
2	02-21-18	☐ Preliminary Design / Planning/ CEQA ☐ Final Design	Address comments
3	10-3-18	☐ Preliminary Design / Planning/ CEQA ☐ Final Design	Address comments
4	4-1-19	☐ Preliminary Design / Planning/ CEQA ☐ Final Design	Address comments
5	4-1-21	Preliminary Design/ Planning/CEQA	Address comments

PROJECT VICINITY MAP

Project Name: Tyler Street
Permit Application Number: TM 2017-01, DR 2017-01

VICINITY MAP

TYLER STREET,
SANTEE CA, 92071



Applicability of Permanent, Post-Construction Storm Water BMP Requirements **(Storm Water Intake Form for all Development Permit Applications)**	**Form I-1** Model BMP Design Manual [August 31, 2015]

Project Identification

Project Name: Tyler Street	
Permit Application Number: TM 2017-01, DR 2017-01	Date: 11-16-16
Project Address: Tyler Street, Santee CA 92071	

Determination of Requirements

The purpose of this form is to identify permanent, post-construction requirements that apply to the project. This form serves as a short summary of applicable requirements, in some cases referencing separate forms that will serve as the backup for the determination of requirements.

Answer each step below, starting with Step 1 and progressing through each step until reaching "Stop". **Upon reaching a Stop, do not complete further Steps beyond the Stop.**

Refer to BMP Design Manual sections and/or separate forms referenced in each step below.

Step	Answer	Progression
Step 1: Is the project a "development project"? See Section 1.3 of the BMP Design Manual for guidance.	☐ Yes	Go to Step 2.
	☐ No	Stop. Permanent BMP requirements do not apply. No SWQMP will be required. Provide discussion below.

Discussion / justification if the project is not a "development project" (e.g., the project includes *only* interior remodels within an existing building):

Step 2: Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, see Section 1.4 of the BMP Design Manual *in its entirety* for guidance, AND complete Form I-2, Project Type Determination.	☐ Standard Project	Stop. Only Standard Project requirements apply, including Standard Project SWQMP.
	☐ PDP	Standard and PDP requirements apply, including PDP SWQMP. Go to Step 3.
	☐ Exception to PDP definitions	Stop. Standard Project requirements apply, and any additional requirements specific to the type of project. Provide discussion and list any additional requirements below. Prepare Standard Project SWQMP.

Form I-1 Page 2, Form Template Date: August 31, 2015		
[Step 2 Continued from Page 1] Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:		
Step 3 (PDPs only). Is the project subject to earlier PDP requirements due to a prior lawful approval? See Section 1.10 of the BMP Design Manual for guidance.	☐ Yes	Consult the [City Engineer] to determine requirements. Provide discussion and identify requirements below. Go to Step 4.
	☐ No	BMP Design Manual PDP requirements apply. Go to Step 4.
Discussion / justification of prior lawful approval, and identify requirements (*not required if prior lawful approval does not apply*):		
Step 4 (PDPs only). Do hydromodification control requirements apply? See Section 1.6 of the BMP Design Manual for guidance.	☐ Yes	PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6). Go to Step 5.
	☐ No	Stop. PDP structural BMPs required for pollutant control (Chapter 5) only. Provide brief discussion of exemption to hydromodification control below.
Discussion / justification if hydromodification control requirements do <u>not</u> apply: Storm drain system discharges directly into the San Diego River.		
Step 5 (PDPs subject to hydromodification control requirements only). Does protection of critical coarse sediment yield areas apply based on review of WMAA Potential Critical Coarse Sediment Yield Area Map? See Section 6.2 of the BMP Design Manual for guidance.	☐ Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). Stop.
	☐ No N/A	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. Stop.

Priority Determination Form	Form I-2 Model BMP Design Manual [August 31, 2015]

Project Information

Project Name: Tyler Street	
Permit Application Number: TM 2017-01, DR 2017-01	Date: 11-16-16
Project Address: Vacant, Tyler Street, Santee CA 92071	

Project Type Determination: Standard Project or Priority Development Project (PDP)

The project is (select one): ☐ New Development ☐ Redevelopment

The total proposed newly created or replaced impervious area is: 88,850 ft² (_2.04 _) acres

Is the project in any of the following categories, (a) through (f)?

Yes	No		
☐	☐	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
☐	☐	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
☐	☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

Form I-2 Page 2, Form Template Date: August 31, 2015			
Yes ☐	No ☐	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.*
Yes ☐	No ☐	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☐	No ☐	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See BMP Design Manual Section 1.4.2 for additional guidance.*

Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?

☐ No – the project is <u>not</u> a Priority Development Project (Standard Project).

☐ Yes – the project is a Priority Development Project (PDP).

The following is for redevelopment PDPs only: N/A

The area of existing (pre-project) impervious area at the project site is: _____ ft^2 (A)
The total proposed newly created or replaced impervious area is _____ ft^2 (B)
Percent impervious surface created or replaced (B/A)*100: _____%
The percent impervious surface created or replaced is (select one based on the above calculation):

☐ less than or equal to fifty percent (50%) – only new impervious areas are considered PDP

OR

☐ greater than fifty percent (50%) – the entire project site is a PDP

Site Design Checklist For PDPs	Form I-3B (PDPs) Model BMP Design Manual [August 31, 2015]

Project Summary Information	
Project Name	Tyler Street
Project Address	Vacant, Tyler Street, Santee CA, 92071
Assessor's Parcel Number(s) (APN(s))	386-290-08,09,10,13,14,20,22,24 & 26
Permit Application Number	TM 2017-01, DR 2017-01
Project Hydrologic Unit	Select One: ☐ Santa Margarita 902 ☐ San Luis Rey 903 ☐ Carlsbad 904 ☐ San Dieguito 905 ☐ Penasquitos 906 ☐ San Diego 907 ☐ Pueblo San Diego 908 ☐ Sweetwater 909 ☐ Otay 910 ☐ Tijuana 911
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	907.12 Santee HSA
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	27.35 Acres (1,191,168 Square Feet)
Area to be Disturbed by the Project (Project Area)	6.22 Acres (270,860 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	2.04 Acres (88,850 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	4.18 Acres (182,010 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Description of Existing Site Condition

Current Status of the Site (select all that apply):

☐ Existing development

☐ Previously graded but not built out

☐ Demolition completed without new construction

☐ Agricultural or other non-impervious use

☐ Vacant, undeveloped/natural

Description / Additional Information:

A small portion of the property was graded on per DWG. 91-051

Existing Land Cover Includes (select all that apply):

☐ Vegetative Cover

☐ Non-Vegetated Pervious Areas

☐ Impervious Areas

Description / Additional Information:

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):

☐ NRCS Type A

☐ NRCS Type B

☐ NRCS Type C

☐ NRCS Type D

Approximate Depth to Groundwater (GW):

☐ GW Depth < 5 feet

☐ 5 feet < GW Depth < 10 feet

☐ 10 feet < GW Depth < 20 feet

☐ GW Depth > 20 feet

See Geotechnical Report

Existing Natural Hydrologic Features (select all that apply):

☐ Watercourses

☐ Seeps

☐ Springs

☐ Wetlands

☐ None

Description / Additional Information:

An existing ephemeral channel exists along the northeast property line and will not be disturbed

Description of Existing Site Drainage Patterns

How is storm water runoff conveyed from the site? At a minimum, this description should answer:

(1) whether existing drainage conveyance is natural or urban;

(2) Is runoff from offsite conveyed through the site? if yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site;

(3)Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels; and

(4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations.

Describe existing site drainage patterns:

The existing drainage is overland flow over the undeveloped land and flows into an existing ephemeral channel where it enters a storm drain system on Tyler street and discharges into the San Diego River. The runoff from the east is urban and drains to the ephemeral channel onsite through a series of storm drains and brow ditches.
See Drainage Study associated with this project.

Description of Proposed Site Development

Project Description / Proposed Land Use and/or Activities:

Grading and construction of a road and 14 low density residential single family pads, homes and driveways.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

Roofs, driveways, and Tyler street extension.

List/describe proposed pervious features of the project (e.g., landscape areas):

Landscape areas and slopes

Does the project include grading and changes to site topography?

☐ Yes

☐ No

Description / Additional Information:

Grading of the 14 pads and extension of Tyler Street.

Description of Proposed Site Drainage Patterns

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

☐ Yes
☐ No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns::

The drainage basin in the pre and post developed condition is 74 acres in size. In the proposed condition, drainage will continue to flow into the existing storm drain system located at the terminus of Tyler Street. A brow ditch will be constructed at the top of the southwesterly slope directing runoff from the south eastward into the existing ephemeral channel and to the west around the project. The drainage from the west will be directed to a storm drain pipe where it will confluence with the existing storm drain system on Tyler street. Runoff from the 14 homes and Tyler Street extension will flow into the curb and gutter and conveyed into a series of rain gardens/biofiltration basins on both sides of the street designed per fact sheet BF-1 for pollutant control. The Padre Dam access road will drain into a tree well per SD-1 for treatment.
See Drainage Study associated with this project for detailed calculations.

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply):

- ☐ On-site storm drain inlets
- ☐ Interior floor drains and elevator shaft sump pumps
- ☐ Interior parking garages
- ☐ Need for future indoor & structural pest control
- ☐ Landscape/Outdoor Pesticide Use
- ☐ Pools, spas, ponds, decorative fountains, and other water features
- ☐ Food service
- ☐ Refuse areas
- ☐ Industrial processes
- ☐ Outdoor storage of equipment or materials
- ☐ Vehicle and Equipment Cleaning
- ☐ Vehicle/Equipment Repair and Maintenance
- ☐ Fuel Dispensing Areas
- ☐ Loading Docks
- ☐ Fire Sprinkler Test Water
- ☐ Miscellaneous Drain or Wash Water
- ☐ Plazas, sidewalks, and parking lots

Description / Additional Information:

Identification and Narrative of Receiving Water and Pollutants of Concern

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

Runoff from the site flows into a storm drain system which discharges into the San Diego River and is conveyed to the Pacific Ocean.

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
San Diego River	Enterococcus, Fecal Coliform, Low	Indicator Bacteria
	Dissolved Oxygen, Manganese, Nitrogen, Phosphorous, Total	
	Dissolved Solids, & Toxicity	

Identification of Project Site Pollutants*

***Identification of project site pollutants is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs (note the project must also participate in an alternative compliance program unless prior lawful approval to meet earlier PDP requirements is demonstrated)**

Identify pollutants expected from the project site based on all proposed use(s) of the site (see BMP Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Expected from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment			
Nutrients			
Heavy Metals			
Organic Compounds			
Trash & Debris			
Oxygen Demanding Substances			
Oil & Grease			
Bacteria & Viruses			
Pesticides			

Form I-3B Page 8 of 10, Form Template Date: August 31, 2015
Hydromodification Management Requirements
Do hydromodification management requirements apply (see Section 1.6 of the BMP Design Manual)? ☐ Yes, hydromodification management flow control structural BMPs required. ☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. ☐ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. ☐ No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA for the watershed in which the project resides. Description / Additional Information (to be provided if a 'No' answer has been selected above): Runoff discharges into the San Diego River. See hardened conveyance system exhibit in attachment 2.
Critical Coarse Sediment Yield Areas* ***This Section only required if hydromodification management requirements apply**

CCSY EXHIBIT

CCSY AREAS

SOURCE: 2015 SAN DIEGO RIVER WATERSHED MANAGEMENT AREA ANALYSIS

L:\PROJECTS 3D\13772 TYLER STREET\PRODUCTION DRAWINGS\DELIVERABLES\DRAINAGE.DWG November 06, 2020 – 4:33pm

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

☐ Yes

☒ No, No critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Section 6.2 of the BMP Design Manual been performed?

☐ 6.2.1 Verification of Geomorphic Landscape Units (GLUs) Onsite

☐ 6.2.2 Downstream Systems Sensitivity to Coarse Sediment

☐ 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite

☐ No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

☐ No critical coarse sediment yield areas to be protected based on verification of GLUs onsite

☐ Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 2.b of the SWQMP.

☐ Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

N/A

Flow Control for Post-Project Runoff*

***This Section only required if hydromodification management requirements apply**

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

N/A

Has a geomorphic assessment been performed for the receiving channel(s)?

☐ No, the low flow threshold is 0.1Q2 (default low flow threshold)

☐ Yes, the result is the low flow threshold is 0.1Q2

☐ Yes, the result is the low flow threshold is 0.3Q2

☐ Yes, the result is the low flow threshold is 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

N/A

Discussion / Additional Information: (optional)

N/A

Other Site Requirements and Constraints

When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.

N/A

Optional Additional Information or Continuation of Previous Sections As Needed

This space provided for additional information or continuation of information from previous sections as needed.

Source Control BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)	Form I-4 Model BMP Design Manual [August 31, 2015]

Project Identification

Project Name	Tyler Street
Permit Application Number	TM 2017-01, DR 2017-01

Source Control BMPs

All development projects must implement source control BMPs SC-1 through SC-6 where applicable and feasible. See Chapter 4 and Appendix E of the Model BMP Design Manual for information to implement source control BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the Model BMP Design Manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided.

Source Control Requirement	Applied?		
SC-1 Prevention of Illicit Discharges into the MS4	☐ Yes	☐ No	☐ N/A
Discussion / justification if SC-1 not implemented:			
SC-2 Storm Drain Stenciling or Signage	☐ Yes	☐ No	☐ N/A
Discussion / justification if SC-2 not implemented:			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☐ N/A
Discussion / justification if SC-3 not implemented: No outdoor storage areas proposed.			
SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☐ N/A
Discussion / justification if SC-4 not implemented: No outdoor work areas proposed.			

Form I-4 Page 2 of 2, Form Template Date: August 31, 2015			
Source Control Requirement	**Applied?**		
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☐ N/A
Discussion / justification if SC-5 not implemented:			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)			
☐ On-site storm drain inlets	☐ Yes	☐ No	☐ N/A
☐ Interior floor drains and elevator shaft sump pumps	☐ Yes	☐ No	☐ N/A
☐ Interior parking garages	☐ Yes	☐ No	☐ N/A
☐ Need for future indoor & structural pest control	☐ Yes	☐ No	☐ N/A
☐ Landscape/Outdoor Pesticide Use	☐ Yes	☐ No	☐ N/A
☐ Pools, spas, ponds, decorative fountains, and other water features	☐ Yes	☐ No	☐ N/A
☐ Food service	☐ Yes	☐ No	☐ N/A
☐ Refuse areas	☐ Yes	☐ No	☐ N/A
☐ Industrial processes	☐ Yes	☐ No	☐ N/A
☐ Outdoor storage of equipment or materials	☐ Yes	☐ No	☐ N/A
☐ Vehicle and Equipment Cleaning	☐ Yes	☐ No	☐ N/A
☐ Vehicle/Equipment Repair and Maintenance	☐ Yes	☐ No	☐ N/A
☐ Fuel Dispensing Areas	☐ Yes	☐ No	☐ N/A
☐ Loading Docks	☐ Yes	☐ No	☐ N/A
☐ Fire Sprinkler Test Water	☐ Yes	☐ No	☐ N/A
☐ Miscellaneous Drain or Wash Water	☐ Yes	☐ No	☐ N/A
☐ Plazas, sidewalks, and parking lots	☐ Yes	☐ No	☐ N/A

Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.

Site Design BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)	Form I-5 Model BMP Design Manual [August 31, 2015]

Project Identification

Project Name	Tyler Street
Permit Application Number	TM 2017-01, DR 2017-01

Site Design BMPs

All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the Model BMP Design Manual for information to implement site design BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the Model BMP Design Manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification may be provided.

Site Design Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	☐ Yes	☐ No	☐ N/A
Discussion / justification if SD-1 not implemented:			
SD-2 Conserve Natural Areas, Soils, and Vegetation	☐ Yes	☐ No	☐ N/A
Discussion / justification if SD-2 not implemented:			
SD-3 Minimize Impervious Area	☐ Yes	☐ No	☐ N/A
Discussion / justification if SD-3 not implemented:			
SD-4 Minimize Soil Compaction	☐ Yes	☐ No	☐ N/A
Discussion / justification if SD-4 not implemented:			
SD-5 Impervious Area Dispersion	☐ Yes	☐ No	☐ N/A
Discussion / justification if SD-5 not implemented:			

Form I-5 Page 2 of 2, Form Template Date: August 31, 2015			
Site Design Requirement	**Applied?**		
SD-6 Runoff Collection	☐ Yes	☐ No	☐ N/A
Discussion / justification if SD-6 not implemented:			
SD-7 Landscaping with Native or Drought Tolerant Species	☐ Yes	☐ No	☐ N/A
Discussion / justification if SD-7 not implemented:			
SD-8 Harvesting and Using Precipitation	☐ Yes	☐ No	☐ N/A
Discussion / justification if SD-8 not implemented: See Harvest and Use Feasibility checklist in attachment 1 Incorporate rain barrels for each resident for site design. Install pet waste stations throughout project.			

Summary of PDP Structural BMPs	Form I-6 (PDPs) Model BMP Design Manual [August 31, 2015]

Project Identification

Project Name Tyler Street

Permit Application Number TM 2017-01, DR 2017-01

PDP Structural BMPs

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the BMP Design Manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the BMP Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the BMP Design Manual).

Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the BMP Design Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

This project will construct 29 rain gardens/biofiltration basins per BF-1 acting as one system which will be constructed along Tyler Street to retain the design capture volume of the 14 homes and Tyler Street extension to provide pollutant control. The proposed northeasterly slopes will be self retaining. A tree well will be constructed at the low point of a proposed road for Padre Dam Municipal Water District for stormwater treatment. The entrance of the Tyler Street extension will be primarily de minimus (630 SF) and any additional area past the de minimus threshold will be compensated for by oversizing the proposed biofiltration basins to treat the entire DCV. Because the project discharges to an area identified as appropriate for exemption by the WMAA, this project is exempt from hydromodification flow control requirements. See Hardened Conveyance Exhibit in Attachment 2.

(Continue on page 2 as necessary.)

Form I-6 Page 2 of X, Form Template Date: August 31, 2015
(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)
(Continued from page 1)

Form I-6 Page 3 of 3 (Copy as many as needed) , Form Template Date: August 31, 2015	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP A	
Construction Plan Sheet No.	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☒ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☐ Other (describe in discussion section below)	
Purpose: ☒ Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	Walsh Engineering & Surveying, Inc. 607 Aldwych Road, El Cajon, CA 619-588-6747
Who will be the final owner of this BMP?	HOA
Who will maintain this BMP into perpetuity?	HOA
What is the funding mechanism for maintenance?	HOA or CFD

Form I-6 Page 4 of X (Copy as many as needed) , Form Template Date: August 31, 2015
Structural BMP ID No. A
Construction Plan Sheet No. TBD
Discussion (as needed): Rain garden for roofs, sidewalks, driveways and Tyler Street.

Form I-6 Page 3 of 3 (Copy as many as needed) , Form Template Date: August 31, 2015	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP B	
Construction Plan Sheet No.	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☒ Other (describe in discussion section below)	
Purpose: ☒ Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	Walsh Engineering & Surveying, Inc. 607 Aldwych Road, El Cajon, CA 619-588-6747
Who will be the final owner of this BMP?	HOA
Who will maintain this BMP into perpetuity?	HOA
What is the funding mechanism for maintenance?	HOA or CFD

Form I-6 Page 4 of X (Copy as many as needed) , Form Template Date: August 31, 2015
Structural BMP ID No. B
Construction Plan Sheet No. TBD
Discussion (as needed): Tree well for Padre water district maintenance road.

ATTACHMENT 1
BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	☐ Included
Attachment 1b	Tabular Summary of DMAs Showing DMA ID matching DMA Exhibit, DMA Area, and DMA Type (Required)* *Provide table in this Attachment OR on DMA Exhibit in Attachment 1a	☐ Included on DMA Exhibit in Attachment 1a ☐ Included as Attachment 1b, separate from DMA Exhibit
Attachment 1c	Form I-7, Harvest and Use Feasibility Screening Checklist (Required unless the entire project will use infiltration BMPs) Refer to Appendix B.3-1 of the BMP Design Manual to complete Form I-7.	☐ Included in attachment 1A ☐ Not included because the entire project will use infiltration BMPs
Attachment 1d	Form I-8, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the BMP Design Manual to complete Form I-8.	☐ Included ☐ Not included because the entire project will use harvest and use BMPs
Attachment 1e	Pollutant Control BMP Design Worksheets / Calculations (Required) Refer to Appendices B and E of the BMP Design Manual for structural pollutant control BMP design guidelines	☐ Included

Use this checklist to ensure the required information has been included on the DMA Exhibit:

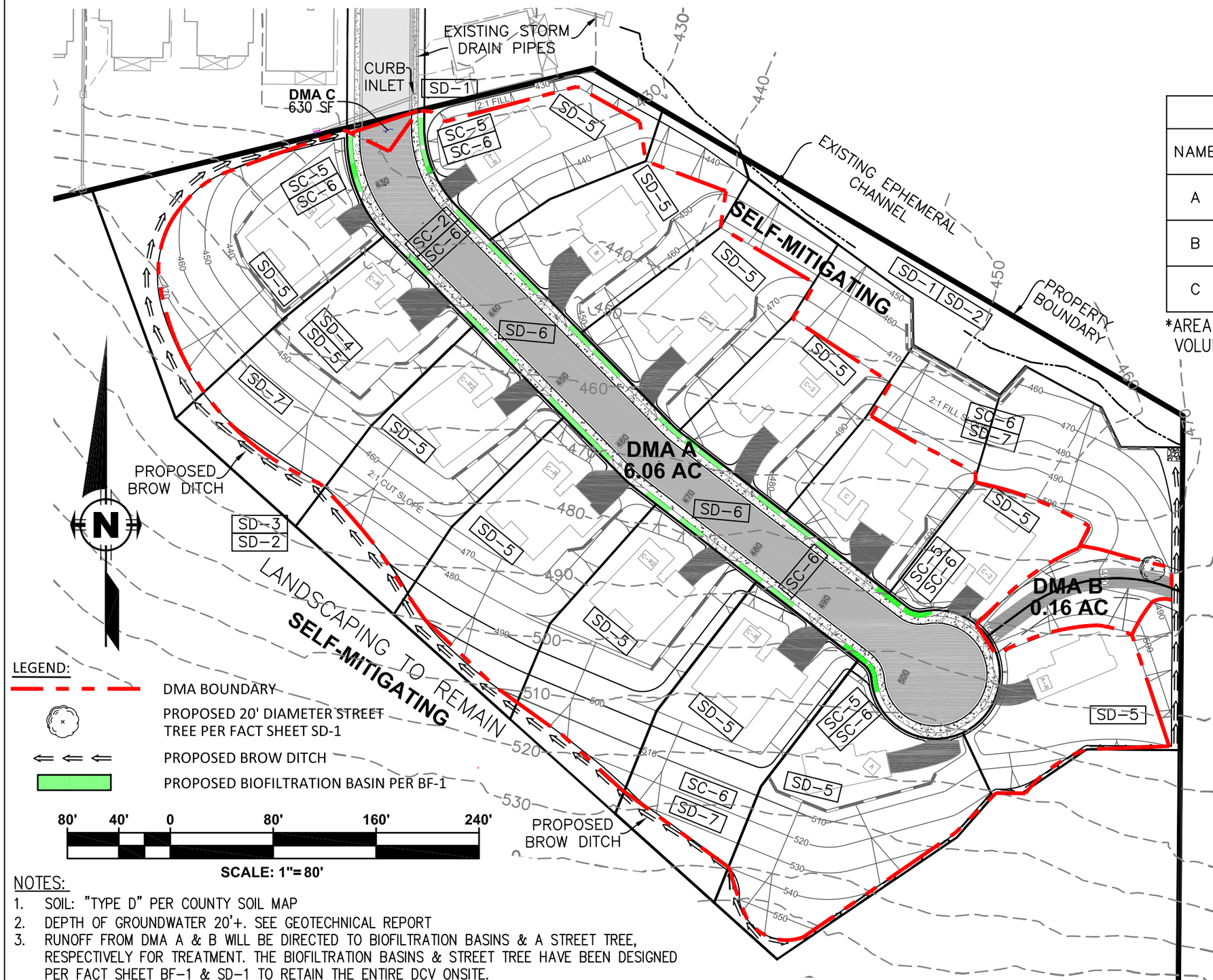
The DMA Exhibit must identify:

- ☒ Underlying hydrologic soil group
- ☒ Approximate depth to groundwater
- ☒ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- N/A ☐ Critical coarse sediment yield areas to be protected
- ☒ Existing topography and impervious areas
- ☒ Existing and proposed site drainage network and connections to drainage offsite
- N/A ☐ Proposed demolition
- ☒ Proposed grading
- ☒ Proposed impervious features
- ☒ Proposed design features and surface treatments used to minimize imperviousness
- ☒ Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
- ☒ Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Form I-3B)
- ☒ Structural BMPs (identify location, type of BMP, and size/detail)

TYLER STREET

SANTEE CA, 92071

DRAINAGE MANAGEMENT AREAS



DMA TABLE			
NAME	AREA	DESCRIPTION	TYPE
A	6.06 AC	TYLER STREET & 14 HOMES W/DW'S	BIOFILTRATION*
B	0.16 AC	PADRE DRIVEWAY	SELF-RETAINING
C	0.01 AC	TYLER STREET	DE MINIMUS

*AREA REQUIRED: 2,880 SF AREA PROVIDED: 2,880 SF
VOLUME REQUIRED: 3,959 CF VOLUME PROVIDED: 3,959 CF

BMP LEGEND

SITE DESIGN BMPS:

MAINTAIN NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES	SD-1
CONSERVE NATURAL AREAS, SOILS, AND VEGETATION	SD-2
MINIMIZE IMPERVIOUS AREA	SD-3
MINIMIZE SOIL COMPACTION	SD-4
IMPERVIOUS AREA DISPERSION	SD-5
RUNOFF COLLECTION	SD-6
LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES	SD-7

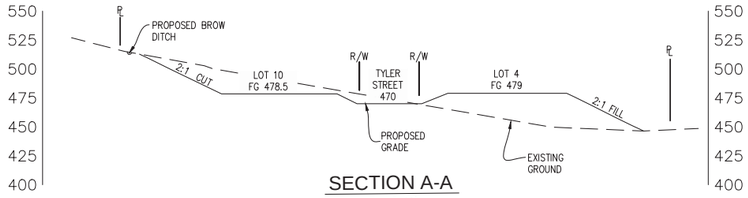
SOURCE CONTROL BMPS:

PREVENTION OF ILLICIT DISCHARGES INTO THE MS4	SC-1
STORM DRAIN STENCILING OR SIGNAGE	SC-2
PROTECT TRASH STORAGE AREAS	SC-5
LANDSCAPE/OUTDOOR PESTICIDE USE	SC-6
SIDEWALK	SC-6
REFUSE AREAS	SC-6

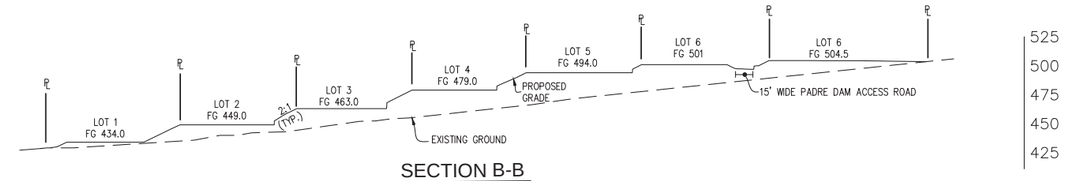
NOTES:

1. SOIL: "TYPE D" PER COUNTY SOIL MAP
2. DEPTH OF GROUNDWATER 20'+. SEE GEOTECHNICAL REPORT
3. RUNOFF FROM DMA A & B WILL BE DIRECTED TO BIOFILTRATION BASINS & A STREET TREE, RESPECTIVELY FOR TREATMENT. THE BIOFILTRATION BASINS & STREET TREE HAVE BEEN DESIGNED PER FACT SHEET BF-1 & SD-1 TO RETAIN THE ENTIRE DCV ONSITE.
4. BUILDINGS SHOWN ARE FOR REFERENCE ONLY.

FOR CROSS SECTIONS A-A TO G-G, REFERENCE SHEET 1



SECTION A-A
H: 1"=60'
V: 1"=60'



SECTION B-B
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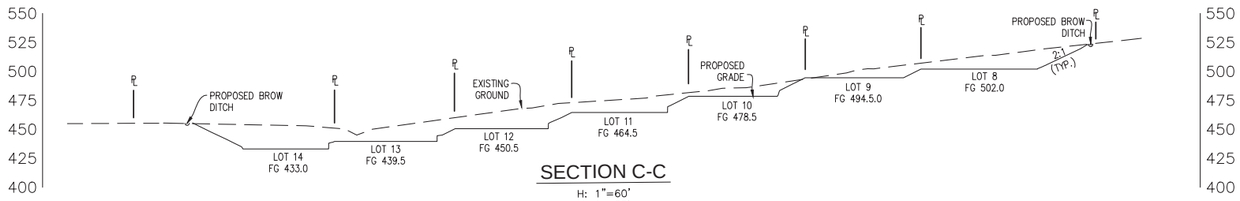
V: 1"=60'



SECTION C-C
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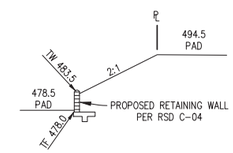

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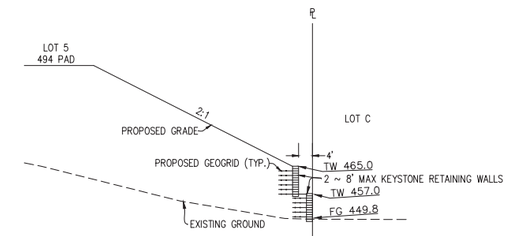

SECTION G-G
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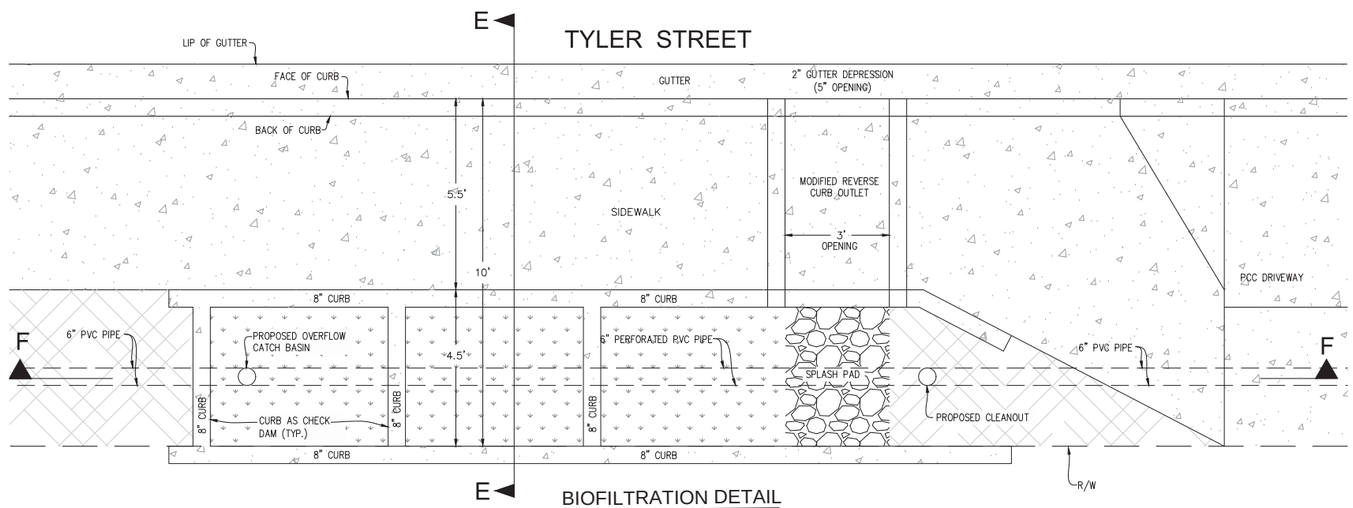
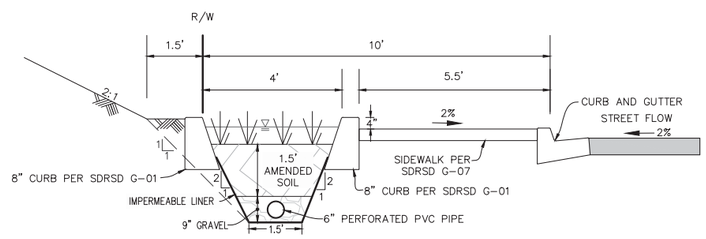
V: 1"=20'



BIOFILTRATION DETAIL
TYPICAL SECTION
SCALE: 1" = 2'



SECTION E-E
SCALE
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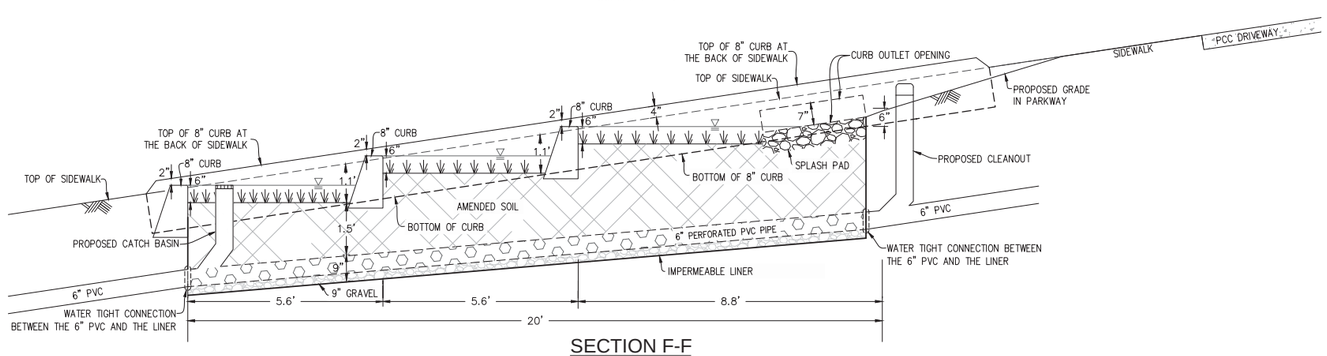
V: 1" = 2'



SECTION F-F
SCALE
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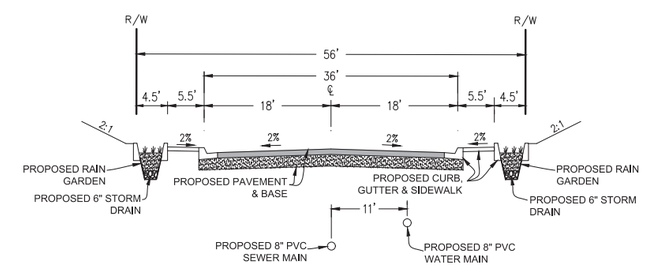
V: 1" = 2'



TYLER STREET
TYPICAL SECTION
NO SCALE

LAWRENCE W. WALSH
DATE 3/2/21
Walsh Engineering & Surveying, Inc.
607 Aldwych Road, El Cajon, CA 92020
(619) 588-6747 (619) 792-1232 Fax

REGISTERED PROFESSIONAL ENGINEER
LAWRENCE W. WALSH
46316
CIVIL
STATE OF CALIFORNIA

Categorization of Infiltration Feasibility Condition		Form I-8	
Part 1 - Full Infiltration Feasibility Screening Criteria Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?			
Criteria	Screening Question	Yes	No
1	Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	☐	☒
Provide basis: NRCS soil maps indicate the site is mapped as "Diablo Clay – 15 to 30% slopes (DaE)", which is a USDA hydrologic soil group "D" soil. Type "D" soils generally possess infiltration rates on the order of 0.0 to 0.5in/hr. Based on our subsurface exploration, the project site is underlain by Tertiary-age Friars Formation which generally consists of dense, interbedded claystone, siltstone, and sandstone with cobble conglomerate lenses. These formational materials possess negligible permeability and will not reliably support full infiltration. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
2	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	☐	☒
Provide basis: Infiltration at a rate greater than 0.5 inches per hour is not feasible for the project. As such, this screening question does not control the feasibility of infiltration at the project site and is not applicable. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			

Form I-8 Page 2 of 4			
Criteria	Screening Question	Yes	No
3	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☐	☒
Provide basis: Infiltration at a rate greater than 0.5 inches/hour is not feasible for this project. As such, this screening question does not control the feasibility of infiltration at the project site. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☐	☒
Provide basis: Infiltration at a rate greater than 0.5 inches/hour is not feasible for this project. As such, this screening question does not control the feasibility of infiltration at the project site. Per Section C.4.4 of the BMP Design Manual, final determination should be made by the project design engineer. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result*	If all answers to rows 1 - 4 are "Yes" a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration If any answer from row 1-4 is "No", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design.	No, Full infiltration is not feasible	

**To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings*

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria
Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	Do soil and geologic conditions allow for infiltration in any appreciable rate or volume? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	☐	☒

Provide basis:
Site specific infiltration testing has not been performed. However, our recent experience performing infiltration testing within the Friars Formation has yielded infiltration rates ranging between 0.00 and 0.02 inches/hour. The subsurface soils encountered are relatively dense and possess high fines content, and perched groundwater was encountered at shallow depths during our geotechnical study at the site. It is our professional opinion that infiltration at the project site will be negligible and that over the lifetime of the development the infiltration rates will further diminish. The BMP Design Manual utilizes the subjective terminology of 'appreciable' and fails to define a lower bound infiltration rate. Based on our recent infiltration testing within this geologic formation and site specific data developed during our geotechnical investigation, the soil and geologic conditions at the project site does not allow for infiltration in an 'appreciable' rate or volume.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

6	Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	☐	☒

Provide basis:
The project site is situated in area of known and suspected landslides, and nearby projects have encountered landslides and slope instability. Creep-affected Friars Formation was encountered in our soil borings and test pits excavated onsite and will require significant mitigation to adequately address slope stability. In addition, the soils underlying the project site are expansive and when subjected to repeated wetting and drying may over time lead to a 'softening' of the soils. Infiltrating stormwater in concentrated areas can lead to weakening of fill soils and formational materials and long term destabilization of slopes.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

Form I-8 Page 4 of 4			
Criteria	Screening Question	Yes	No
7	Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☒	☐
Provide basis: An ephemeral stream occupies a portion of the northerly and northeasterly property and shallow groundwater was encountered during our previous subsurface investigation. However, based on our observations of the subsurface soils and bedrock materials, it is not anticipated that the onsite soil is contaminated. In addition, the subject site is not identified as contaminated per our search on the California State Water Resources Control Board GeoTracker website. No contaminated sites were identified within a 0.5 mile radius, there are no industrial sites adjacent to or tributary to the project, and the proposed development will consist of single-family residences. As such, we do not believe infiltration would pose significant risk to groundwater conditions. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
8	Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☒	☐
Provide basis: It is not anticipated that infiltration would violate downstream water rights; however, per Section C.4.4 of the BMP Design Manual, final determination should be made by the project design engineer. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
Part 2 Result*	If all answers from row 5-8 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration. If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.		No, partial infiltration is not feasible

**To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the Agency/Jurisdictions to substantiate findings*

Automated Worksheet B.3-1: Project-Scale BMP Feasibility Analysis (V1.3)

Category	#	Description	Value	Units
Capture & Use Inputs	0	Design Capture Volume for Entire Project Site	4,139	cubic-feet
	1	Proposed Development Type	Residential	unitless
	2	Number of Residents or Employees at Proposed Development	56	#
	3	Total Planted Area within Development	182,010	sq-ft
	4	Water Use Category for Proposed Planted Areas	Moderate	unitless
Infiltration Inputs	5	Is Average Site Design Infiltration Rate ≤0.500 Inches per Hour?	No	yes/no
	6	Is Average Site Design Infiltration Rate ≤0.010 Inches per Hour?	Yes	yes/no
	7	Is Infiltration of the Full DCV Anticipated to Produce Negative Impacts?	No	yes/no
	8	Is Infiltration of Any Volume Anticipated to Produce Negative Impacts?	No	yes/no
Calculations	9	36-Hour Toilet Use Per Resident or Employee	1.86	cubic-feet
	10	Subtotal: Anticipated 36 Hour Toilet Use	104	cubic-feet
	11	Anticipated 1 Acre Landscape Use Over 36 Hours	196.52	cubic-feet
	12	Subtotal: Anticipated Landscape Use Over 36 Hours	821	cubic-feet
	13	Total Anticipated Use Over 36 Hours	926	cubic-feet
	14	Total Anticipated Use / Design Capture Volume	0.22	cubic-feet
	15	Are Full Capture and Use Techniques Feasible for this Project?	No	unitless
	16	Is Full Retention Feasible for this Project?	Yes	yes/no
	17	Is Partial Retention Feasible for this Project?	No	yes/no
Result	18	Feasibility Category	n/a	1, 2, 3, 4, 5

Worksheet B.3-1 General Notes:

A. Applicants may use this worksheet to determine the types of structural BMPs that are acceptable for implementation at their project site (as required in Section 5 of the BMPDM). User input should be provided for yellow shaded cells, values for all other cells will be automatically generated. Projects demonstrating feasibility or potential feasibility via this worksheet are encouraged to incorporate capture and use features in their project.

B. Negative impacts associated with retention may include geotechnical, groundwater, water balance, or other issues identified by a geotechnical engineer and substantiated through completion of Form I-8.

C. Feasibility Category 1: Applicant must implement capture & use, retention, and/or infiltration elements for the entire DCV.

D. Feasibility Category 2: Applicant must implement capture & use elements for the entire DCV.

E. Feasibility Category 3: Applicant must implement retention and/or infiltration elements for all DMAs with Design Infiltration Rates greater than 0.50 in/hr.

F. Feasibility Category 4: Applicant must implement standard unlined biofiltration BMPs sized at ≥3% of the effective impervious tributary area for all DMAs with Design Infiltration Rates of 0.011 to 0.50 in/hr. Applicants may be permitted to implement lined BMPs, reduced size BMPs, and/or specialized biofiltration BMPs provided additional criteria identified in "Supplemental Retention Criteria for Non-Standard Biofiltration BMPs" are satisfied.

G. Feasibility Category 5: Applicant must implement standard lined biofiltration BMPs sized at ≥3% of the effective impervious tributary area for all DMAs with Design Infiltration Rates of 0.010 in/hr or less. Applicants may also be permitted to implement reduced size and/or specialized biofiltration BMPs provided additional criteria identified in "Supplemental Retention Criteria for Non-Standard Biofiltration BMPs" are satisfied.

H. PDPs participating in an offsite alternative compliance program are not held to the feasibility categories presented herein.

Automated Worksheet B.1-1: Calculation of Design Capture Volume (V1.3)

Category	#	Description	*vii*	*viii*	Units
Standard Drainage Basin Inputs	0	Drainage Basin ID or Name	A	B	unitless
	1	Basin Drains to the Following BMP Type	Biofiltration	n/a	unitless
	2	85th Percentile 24-hr Storm Depth	0.50	0.50	inches
	3	Design Infiltration Rate Recommended by Geotechnical Engineer			in/hr
	4	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	86,500	2,350	sq-ft
	5	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)			sq-ft
	6	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)	177,400	4,610	sq-ft
	7	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)			sq-ft
	8	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)			sq-ft
	9	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)			sq-ft
	10	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)			sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	11	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	Yes	Yes	yes/no
	12	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)			sq-ft
	13	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)			sq-ft
	14	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)			sq-ft
	15	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)			sq-ft
	16	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)			sq-ft
	17	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)			sq-ft
	18	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)			sq-ft
	19	Number of Tree Wells Proposed per SD-A		1	#
	20	Average Mature Tree Canopy Diameter		20	ft
	21	Number of Rain Barrels Proposed per SD-E	14		#
	22	Average Rain Barrel Size	100		gal
Treatment Train Inputs & Calculations	23	Does BMP Overflow to Stormwater Features in Downstream Drainage?	No	No	unitless
	24	Identify Downstream Drainage Basin Providing Treatment in Series			unitless
	25	Percent of Upstream Flows Directed to Downstream Dispersion Areas			percent
	26	Upstream Impervious Surfaces Directed to Dispersion Area (Ci=0.90)	0	0	cubic-feet
	27	Upstream Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	0	0	cubic-feet
Initial Runoff Factor Calculation	28	Total Tributary Area	263,900	6,960	sq-ft
	29	Initial Runoff Factor for Standard Drainage Areas	0.36	0.37	unitless
	30	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	unitless
	31	Initial Weighted Runoff Factor	0.36	0.37	unitless
	32	Initial Design Capture Volume	3,959	107	cubic-feet
Dispersion Area Adjustments	33	Total Impervious Area Dispersed to Pervious Surface	0	0	sq-ft
	34	Total Pervious Dispersion Area	0	0	sq-ft
	35	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	ratio
	36	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	ratio
	37	Runoff Factor After Dispersion Techniques	0.36	0.37	unitless
	38	Design Capture Volume After Dispersion Techniques	3,959	107	cubic-feet
Tree & Barrel Adjustments	39	Total Tree Well Volume Reduction	0	180	cubic-feet
	40	Total Rain Barrel Volume Reduction	187	0	cubic-feet
Results	41	Final Adjusted Runoff Factor	0.34	0.00	unitless
	42	Final Effective Tributary Area	89,726	0	sq-ft
	43	Initial Design Capture Volume Retained by Site Design Elements	187	180	cubic-feet
	44	Final Design Capture Volume Tributary to BMP	3,772	0	cubic-feet

Worksheet B.1-1 General Notes:

A. Applicants may use this worksheet to calculate design capture volumes for up to 10 drainage areas. User input must be provided for yellow shaded cells, values for all other cells will be automatically generated, errors/notifications will be highlighted in red and summarized below. Upon completion of this worksheet, proceed to the appropriate BMP Sizing worksheet(s).

Automated Worksheet B.5-1: Sizing Lined or Unlined Biofiltration BMPs (V1.3)

Category	#	Description	*vii*	Units
BMP Inputs	0	Drainage Basin ID or Name	A	sq-ft
	1	Design Infiltration Rate Recommended by Geotechnical Engineer	0.000	in/hr
	2	Effective Tributary Area	89,726	sq-ft
	3	Minimum Biofiltration Footprint Sizing Factor	0.030	ratio
	4	Design Capture Volume Tributary to BMP	3,772	cubic-feet
	5	Is Biofiltration Basin Impermeably Lined or Unlined?	Lined	unitless
	6	Provided Biofiltration BMP Surface Area	2,880	sq-ft
	7	Provided Surface Ponding Depth	6	inches
	8	Provided Soil Media Thickness	18	inches
	9	Provided Depth of Gravel Above Underdrain Invert	6	inches
	10	Diameter of Underdrain or Hydromod Orifice (Select Smallest)	6.00	inches
	11	Provided Depth of Gravel Below the Underdrain	3	inches
Retention Calculations	12	Volume Infiltrated Over 6 Hour Storm	0	cubic-feet
	13	Soil Media Pore Space Available for Retention	0.05	unitless
	14	Gravel Pore Space Available for Retention	0.00	unitless
	15	Effective Retention Depth	0.90	inches
	16	Calculated Retention Storage Drawdown (Including 6 Hr Storm)	120	hours
	17	Volume Retained by BMP	216	cubic-feet
	18	Fraction of DCV Retained	0.06	ratio
	19	Portion of Retention Performance Standard Satisfied	0.07	ratio
	20	Fraction of DCV Retained (normalized to 36-hr drawdown)	0.03	ratio
	21	Design Capture Volume Remaining for Biofiltration	3,659	cubic-feet
Biofiltration Calculations	22	Max Hydromod Flow Rate through Underdrain	1.4181	CFS
	23	Max Soil Filtration Rate Allowed by Underdrain Orifice	21.27	in/hr
	24	Soil Media Filtration Rate per Specifications	5.00	in/hr
	25	Soil Media Filtration Rate to be used for Sizing	5.00	in/hr
	26	Depth Biofiltered Over 6 Hour Storm	30.00	inches
	27	Soil Media Pore Space Available for Biofiltration	0.20	unitless
	28	Effective Depth of Biofiltration Storage	12.00	inches
	29	Drawdown Time for Surface Ponding	1	hours
	30	Drawdown Time for Effective Biofiltration Depth	2	hours
	31	Total Depth Biofiltered	42.00	inches
	32	Option 1 - Biofilter 1.50 DCV: Target Volume	5,489	cubic-feet
	33	Option 1 - Provided Biofiltration Volume	5,489	cubic-feet
	34	Option 2 - Store 0.75 DCV: Target Volume	2,744	cubic-feet
	35	Option 2 - Provided Storage Volume	2,744	cubic-feet
	36	Portion of Biofiltration Performance Standard Satisfied	1.00	ratio
Result	37	Do Site Design Elements and BMPs Satisfy Annual Retention Requirements?	Yes	yes/no
	38	Overall Portion of Performance Standard Satisfied	1.00	ratio
	39	This BMP Overflows to the Following Drainage Basin	-	unitless
	40	**Deficit of Effectively Treated Stormwater**	**0**	cubic-feet

Worksheet B.5-1 General Notes:

A. Applicants may use this worksheet to size Lined or Unlined Biofiltration BMPs (BF-1, PR-1) for up to 10 basins. User input must be provided for yellow shaded cells, values for blue cells are automatically populated based on user inputs from previous worksheets, values for all other cells will be automatically generated, errors/notifications will be highlighted in red/orange and summarized below. BMPs fully

Summary of Stormwater Pollutant Control Calculations (V1.3)

Category	#	Description	*vii*	*viii*	Units
General Info	0	Drainage Basin ID or Name	A	B	unitless
	1	85th Percentile Storm Depth	0.50	0.50	inches
	2	Design Infiltration Rate Recommended by Geotechnical Engineer	0.000	0.000	in/hr
	3	Total Tributary Area	263,900	6,960	sq-ft
	4	85th Percentile Storm Volume (Rainfall Volume)	10,996	290	cubic-feet
Initial DCV	5	Initial Weighted Runoff Factor	0.36	0.37	unitless
	6	Initial Design Capture Volume	3,959	107	cubic-feet
Site Design Volume Reductions	7	Dispersion Area Reductions	0	0	cubic-feet
	8	Tree Well and Rain Barrel Reductions	187	180	cubic-feet
BMP Volume Reductions	9	Effective Area Tributary to BMP	89,726	0	square feet
	10	Final Design Capture Volume Tributary to BMP	3,772	0	cubic-feet
	11	Basin Drains to the Following BMP Type	Biofiltration	n/a	unitless
	12	Volume Retained by BMP (normalized to 36 hour drawdown)	113	0	cubic-feet
Total Volume Reductions	13	Total Fraction of Initial DCV Retained within DMA	0.08	1.68	fraction
	14	Percent of Average Annual Runoff Retention Provided	12.2%	93.4%	%
	15	Percent of Average Annual Runoff Retention Required	4.5%	4.5%	%
Performance Standard	16	Percent of Pollution Control Standard Satisfied	100.0%	100.0%	%
Treatment Train	17	Discharges to Secondary Treatment in Drainage Basin	-	-	unitless
	18	Impervious Surface Area Still Requiring Treatment	0	0	square feet
	19	Impervious Surfaces Directed to Downstream Dispersion Area	-	-	square feet
	20	Impervious Surfaces Not Directed to Downstream Dispersion Area	-	-	square feet
Result	21	Deficit of Effectively Treated Stormwater	0	0	cubic-feet

Summary Notes:

All fields in this summary worksheet are populated based on previous user inputs. If applicable, drainage basin elements that require revisions and/or supplemental information outside the scope of these worksheets are highlighted in orange and

-Congratulations, all specified drainage basins and BMPs are in compliance with stormwater pollutant control requirements. Include 11x17 color prints of this summary sheet and supporting worksheet calculations as part of the SWQMP submittal

False

ATTACHMENT 2
BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

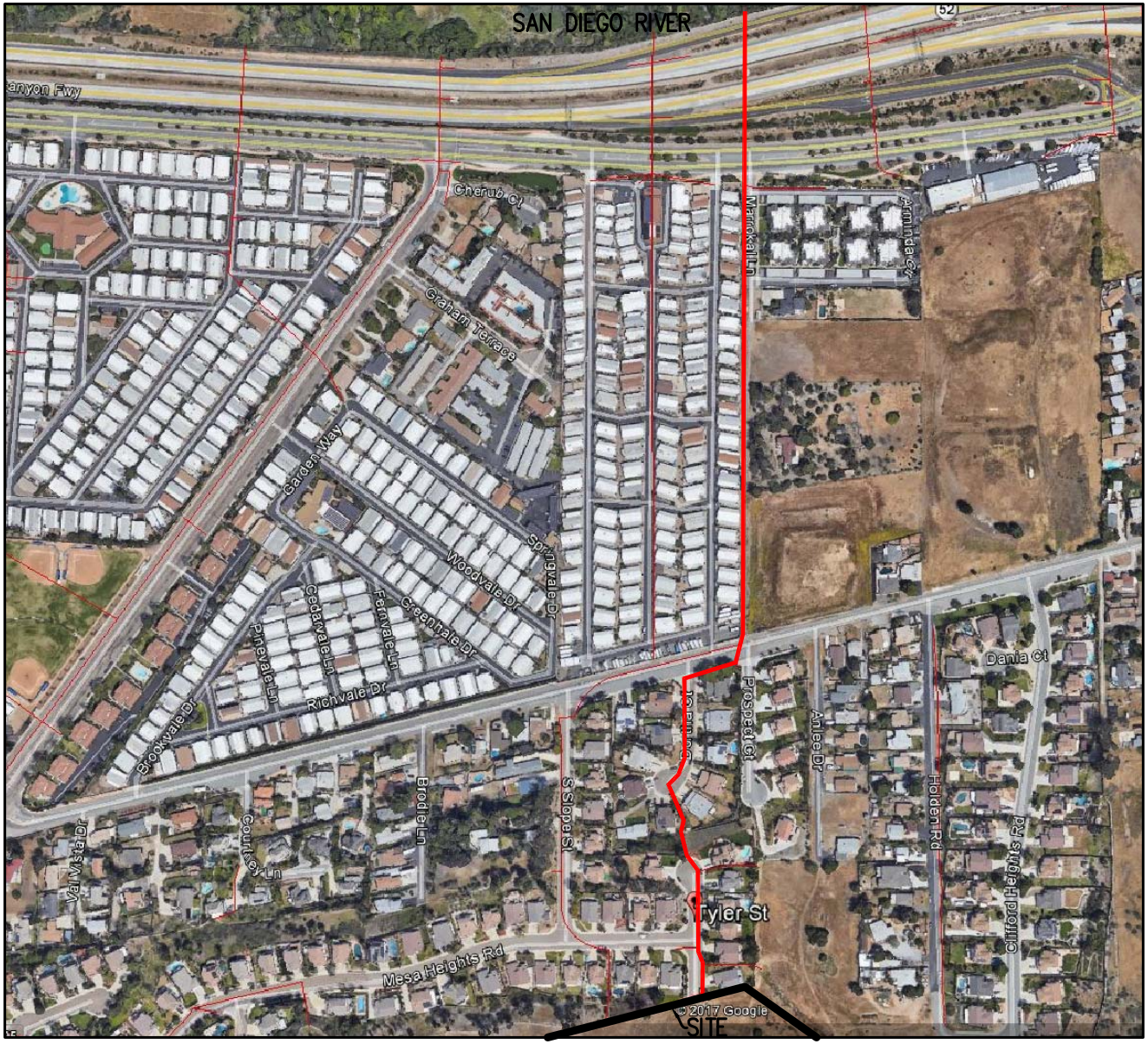
This is the cover sheet for Attachment 2.

☒ Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 2a	Hydromodification Management Exhibit (Required)	☐ Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2b	Management of Critical Coarse Sediment Yield Areas (WMAA Exhibit is required, additional analyses are optional) See Section 6.2 of the BMP Design Manual.	☐ Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required) Optional analyses for Critical Coarse Sediment Yield Area Determination ☐ 6.2.1 Verification of Geomorphic Landscape Units Onsite ☐ 6.2.2 Downstream Systems Sensitivity to Coarse Sediment ☐ 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
Attachment 2c	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	☐ Not performed ☐ Included ☐ Submitted as separate stand-alone document
Attachment 2d	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the BMP Design Manual	☐ Included ☐ Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐ Included ☐ Not required because BMPs will drain in less than 96 hours

HARDENED CONVEYANCE EXHIBIT



HARDENED CONVEYANCE SYSTEM

SOURCE: 2015 SAN DIEGO RIVER WATERSHED MANAGEMENT AREA ANALYSIS

L:\PROJECTS 3D\13772 TYLER STREET\PRODUCTION DRAWINGS\DELIVERABLES\DRAINAGE.DWG August 29, 2017 – 3:26pm

ATTACHMENT 3
Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	**Contents**	**Checklist**
Attachment 3a	Structural BMP Maintenance Thresholds and Actions (Required)	☒ Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Maintenance Agreement (when applicable)	☐ Included ☐ Not Applicable

OPERATION & MAINTENANCE (O&M) PLAN

For

Tyler Street Project
(TM 2017-01)

Preparation Date: 4/5/21

Prepared for:

Steve Family Trust #3 dated 6/21/94
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ATTACHMENTS

A1. Inspection & Maintenance Schedule

B1. Cost Estimate

C1. BMP Training Log

D1. Inspection & Maintenance Log

E1. BMP Specifications

INTRODUCTION

The OPERATION & MAINTENANCE PLAN (O&M) requirement is under the City of Santee "Storm Water Quality Management Plan" Storm Water BMP Maintenance. The purpose of this O&M is to address the continued maintenance and to appoint the responsible parties in charge of maintaining the proposed BMPs during construction and post-construction. Best Management Practices (BMPs) will be utilized to provide a long-term solution to water quality. This O&M is also intended to ensure the effectiveness of the BMPs through proper maintenance and operation based on long-term fiscal planning. This O&M is subject to approval and periodic revisions as required by the City Engineer. The owner is legally obligated to maintain this O&M in perpetuity. This obligation is further outlined in the Facility Maintenance Agreement recorded against the property. (See Attachment F1)

1. OPERATION & MAINTENANCE PLAN

The Operation and Maintenance Plan (O&M) needs to address construction and post-construction concerns as shown in the Storm Water Mitigation Plan. Refer to this project's Storm Water Quality Management Plan (SWQMP) for additional information on BMPs. (See enclosed attachment for location of BMPs)

2. Operation & Maintenance of BMP'S

It shall be the responsibility of the owner to maintain and to train all employees for the maintenance and operation of all BMPs, to achieve the maximum pollutant reduction they are designed for, as addressed in the approved Project's SWQMP. The following schedule of (O&M's) must be followed to satisfy the Conditions of Concern and the Pollutants of Concern as addressed in the approved Project's SWQMP and the City's BMP Design Manual. This schedule shall include periodic inspections of all Site Design and Pollutant Control BMP's. All maintenance records for training, inspection and maintenance shall be kept for a minimum of five (5) years.

The owner will also, provide to the City as part of the maintenance and operation agreement an executed access easement that shall be binding on the land throughout the life of the project, until such time that the storm water BMPs requiring access are replaced satisfactory to the City Engineer. This obligation is further outlined in the Facility Maintenance Agreement recorded against the property.

The proposed bioretention basins, landscaping & tree well located within the public ROW shall be maintained by the applicant with a landscape maintenance agreement.

A. Training, Inspection & Record Keeping

Training of Operation and Maintenance personnel is of primary importance to provide knowledge of the operation and maintenance of BMPs. Proper training shall provide information that will enable employees to in place an effective preventive maintenance program as described in this O & M manual. The responsible party mentioned above should take the course provided by the "BULDING INDUSTRIES ASSOCIATION" to be trained in the purpose and use of BMPs and the maintenance thereof. Proper preventive maintenance will prevent environmental incidents that may be a health and safety hazard. Also, the responsible party should refer to the following web site for resource information: www.caBMPhanbooks.com

Persons assigned the task of BMP maintenance must be trained as to the purpose, location and proper maintenance within the first week of their employment.

This training shall include receiving a copy of this O & M manual; a discussion on the location and purpose of site specific BMPs, such as Source Control and Treatment Control BMPs; trained on how to inspect and report maintenance problems and to whom they report to; They shall be trained in site specific Pollutants of Concern so that they can evaluate the functioning of all on-site BMPs this to avoid environmental incidents. These Pollutants of are given in this report under Section 2.

A log of all training and reported inspections and maintenance problems along with what was done to correct the problem shall be keep on the premises at all times for a minimum of five (5) years.

Employees and tenants shall be periodically trained and notified, at a minimum of once a year, to refresh their knowledge of BMP Operations and Maintenance.

B. Landscape Areas

Operational and maintenance needs include:

- Vegetation management to maintain adequate infiltration and to limit habitat for disease-carrying animals.
- Animal and vector control.
- Periodic sediment removal to optimize performance.
- Trash, debris, tree pruning, and leaf collection and removal to prevent obstruction of a landscape areas so as not to prohibit their use as a BMP.
- Monitoring the irrigation equipment.
- Removal of standing water, which may contribute to the development of aquatic plant communities or mosquito breeding areas.

- Erosion and structural maintenance to prevent the loss of soil and maintain the performance of all landscaping.
- Maintain a mulch layer over all exposed soil.

Inspection Frequency

- Landscape will be inspected once a month at a minimum. All inspection and maintenance will be completely documented.
- Inspections will also occur after every large storm event (after every storm monitored or storms with more than 0.50 inch of precipitation.), and on a weekly basis during extended periods of wet weather.

Aesthetic Maintenance

The following activities will be included in the aesthetic maintenance program:

Weed Control. Weeds will be removed through mechanical means. Herbicide will not be used because these chemicals may impact the water quality.

Functional Maintenance

Functional maintenance has two components:
- Preventive maintenance
- Corrective maintenance

Preventive Maintenance

Preventive maintenance activities to be instituted for landscaped areas are:
- Trash and Debris: During each inspection and maintenance visit to the site, debris and trash removal will be conducted to reduce the potential for inlet and outlet structures and other components from becoming clogged and inoperable during storm events.
- Sediment Removal: Sediment accumulation, as part of the operation and maintenance program at of landscaped areas, will be monitored once a month during the dry season, after every large storm (0.50 inch), and monthly during the wet season. Specifically, if sediment reaches a level at or near plant height, or could interfere with flow or operation, the sediment will be removed. If accumulation of debris or sediment is determined to be the cause of decline in design performance, prompt action (i.e., within ten working days) will be taken to restore the landscaped areas to design performance standards. Actions will include using additional fill and vegetation and/or removing accumulated sediment to correct channeling or ponding. Characterization and Appropriate disposal of sediment will comply with applicable local, city, county, state, or federal requirements. The landscaped areas will be re-graded, if the flow gradient has changed, and then replanted with sod.
- Removal of Standing Water: Standing water must be removed if it may contribute to the development of aquatic plant communities or mosquito breeding areas.
- Fertilization and Irrigation: The vegetation selected requires minimal to no irrigation.

- Elimination of Mosquito Breeding Habitats. The most effective mosquito control program is one that eliminates all standing water.

Corrective Maintenance

Corrective maintenance is required on an emergency or non-routine basis to correct problems and to restore the intended operation and safe function of all landscaped areas.

Corrective maintenance activities include:

- Removal of Debris and Sediment: Sediment, debris, and trash will be removed and properly disposed. Temporary arrangements will be made for handling the sediments until a permanent arrangement is made. Vegetation will be re-established after sediment removal.
- Structural Repairs: Once deemed necessary, repairs to structural components of landscaping will be done within 10 working days. Qualified individuals (i.e., the designers or contractors) will conduct repairs where structural damage has occurred.
- Embankment and Slope Repairs: Once deemed necessary, damage to the embankments and slopes of landscaped areas will be repaired within 10 working days.
- Erosion Repair: Should erosive conditions be identified (i.e., pedestrian traffic, concentrated flow, etc.), corrective steps will be taken to prevent loss of soil and any subsequent danger to the performance and use of landscaped areas as BMPs. There are a number of corrective actions than can be taken. These include erosion control blankets, riprap, mulch, or reduced flow through the area. Designers or contractors will be consulted to address erosion problems if the solution is not evident.
- Elimination of Animal Burrows: Animal burrows will be filled and steps taken to remove the animals if burrowing problems continue to occur (filling and compacting). If the problem persists, vector control specialists will be consulted regarding removal steps. This consulting is necessary as the threat of rabies in some areas may necessitate the animals being destroyed rather than relocated. If the BMP performance is affected, abatement will begin. Otherwise, abatement will be performed annually in September.
- General Facility Maintenance: In addition to the above elements of corrective maintenance, general corrective maintenance will address the overall facility and its associated components. If corrective maintenance is being done to one component, other components will be inspected to see if maintenance is needed.

Maintenance Frequency

The maintenance indicator document included in Attachment A1, for all BMPs lists the schedule of maintenance activities to be implemented.

Debris and Sediment Disposal

Waste generated is ultimately the responsibility of the owner. Disposal of sediments, debris, and trash will comply with applicable local, city, county, state, and federal waste control programs.

Hazardous Waste

Suspected hazardous wastes will be analyzed to determine disposal options. Hazardous wastes generated onsite will be handled and disposed of according to applicable local, state, and federal

regulations. A solid or liquid waste is considered a hazardous waste if it exceeds the criteria listed in the CCR, Title 22, Article 11.

C. Irrigation System

Inspection Frequency and Procedure

The Irrigation system shall be checked each week as a minimum. The following items shall be checked to insure that they are functioning properly:

- Shut-off devices.
- All piping and sprinkler heads to insure there are no leaks and that proper water spread is maintained.
- All flow reducers.
- Check for overspray/runoff
- Irrigation controls

D. Bio-Retention basins and Tree Well

Operational and maintenance needs include:

- Vegetation management to maintain adequate infiltration and to limit habitat for vectors.
- Periodic sediment removal to optimize performance.
- Removal of Trash, debris, trimmings, leaf collection, etc.
- Removal of standing water, which may contribute to the development of aquatic plant communities or mosquito breeding areas.
- Erosion and structural maintenance to prevent the loss of soil and maintain the performance of all landscaping.

Inspection Frequency

The facility will be inspected and inspection visits will be completely documented:

- Once a month at a minimum.
- After every large storm (after every storm monitored or these storms with more than 0.50 inch of precipitation.)
- On a weekly basis during extended periods of wet weather.

Inspect if vegetation height is greater than 12”; if there is standing water; if debris are present or if sedimentation is occurring at the vegetation height; ensure that all landscaped areas have minimum of 80% coverage and that no animal burrows are present.

Aesthetic Maintenance

The following activities will be included in the aesthetic maintenance program:

- Weed Control. Weeds will be removed through mechanical means. Herbicide shall not be used since the chemicals may impact water quality.

Preventive Maintenance

Preventive maintenance activities to be instituted:

- Trash and Debris: During each inspection and maintenance, trash and debris shall be removed in order to minimize runoff contamination and to prevent downstream inlet and outlet structures from becoming clogged and inoperable during storm events.
- Sediment Removal: Sediment accumulation, as part of the operation and maintenance program of landscaped areas, will be monitored once a month during the dry season, after every large storm (0.50 inch) and monthly during the wet season. Sediment shall be removed immediately if it is visibly accumulated and interferes with drainage flow. and/or removing accumulated sediment to correct channeling or ponding. Characterization and Appropriate disposal of sediment shall comply with applicable local, city, county, state, or federal requirements.
- Clean out blocked drains
- Repair/replace rip-rap
- Mulch layer minimum 3”
- Removal of Standing Water: Standing water must be removed if it contributes to the development of aquatic plants or mosquito breeding areas. The most effective mosquito control program is one that eliminates standing water.
- Replace plants (when dead/diseased) to maintain the functionality of the bioswale.
- Replenish or replace soil matrix to maintain minimum percolation rate.
- Bioretention Soil Matrix Details:
    - Composition and Texture: 65 percent sand, 20 percent sandy loam, and 15 percent compost (from vegetation-based feedstock). Animal wastes or by-products should not be applied.
    -
    - Permeability: 5 in/hr infiltration rate for the flow-based SUSMP method (1–6in/hr for alternative designs, as approved by local jurisdiction).
    -
    - Chemical Composition: Total phosphorus < 15 parts per million (ppm); pH 6–8; cation exchange capacity > 5 milliequivalents per 100 grams (meq/100 g) of soil; organic matter content < 5 percent by weight.
- Bioretention Vegetation Specifications:
    - For bioretention to function properly as stormwater treatment and blend into the landscaping, vegetation selection is crucial. Appropriate vegetation will have the following characteristics:
    - Plant materials must be tolerant of summer drought, ponding fluctuations, and saturated soil conditions for 10 to 48 hours.
    - It is recommended that a minimum of three tree species, three shrub species, and three herbaceous groundcover species be incorporated to protect against faciuty failure from

disease and insect infestations of a single species. plant rooting depths must not damage the underdrain, if present. slotted or perforated underdrain pipe must be more than 5 feet from tree locations (if space allows).

- Native plant species or hardy cultivars that are not invasive and do not require chemical inputs are recommended to be used to the maximum extent practicable.
- Shade trees should be free of branches below 1/3 their total height.

E. Storm Drains, Inlets and Outlet Structures

Shall be kept functional at all times. Routine inspection and corrective maintenance shall include removal of trash sediment and debris and repair of any structural damage, repainting or replacing damaged inlet markings and labels. The minimum maintenance frequency shall be prior to August 31 each year or as needed for proper function.

F. Fire Suppression Systems

Shall be maintained and inspected at a minimum once a year. Maintenance shall include backwashing of black water from all private fire suppression systems and draining into a sanitary sewer connection.

Summary of Standard Inspection and Maintenance

The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district.

Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.

Threshold/Indicator	Maintenance Action	Inspection and Maintenance Frequency
Accumulation of sediment, litter, or debris	Remove and properly dispose of accumulated materials, without damage to the vegetation or compaction of the media layer.	• Inspect monthly. If the BMP is 25% full* or more in one month, increase inspection frequency to monthly plus after every 0.1-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Obstructed inlet or outlet structure	Clear blockage.	• Inspect monthly and after every 0.5-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Damage to structural components such as weirs, inlet or outlet structures	Repair or replace as applicable	• Inspect annually. • Maintain when needed.
Poor vegetation establishment	Re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintain when needed.

Threshold/Indicator	Maintenance Action	Inspection and Maintenance Frequency
Dead or diseased vegetation	Remove dead or diseased vegetation, re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintain when needed.
Overgrown vegetation	Mow or trim as appropriate.	• Inspect monthly. • Maintain when needed.
2/3 of mulch has decomposed, or mulch has been removed	Remove decomposed fraction and top off with fresh mulch to a total depth of 3 inches.	• Inspect monthly. • Replenish mulch annually, or more frequently when needed based on inspection.
Erosion due to concentrated irrigation flow	Repair/re-seed/re-plant eroded areas and adjust the irrigation system.	• Inspect monthly. • Maintain when needed.
Erosion due to concentrated storm water runoff flow	Repair/re-seed/re-plant eroded areas, and make appropriate corrective measures such as adding erosion control blankets, adding stone at flow entry points, or minor re-grading to restore proper drainage according to the original plan. If the issue is not corrected by restoring the BMP to the original plan and grade, the County reviewer shall be contacted prior to any additional repairs or reconstruction.	• Inspect after every 0.5-inch or larger storm event. If erosion due to storm water flow has been observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed. If the issue is not corrected by restoring the BMP to the original plan and grade, the County reviewer shall be contacted prior to any additional repairs or reconstruction.
Standing water in BMP for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health	Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, clearing underdrains, or repairing/replacing clogged or compacted soils.	• Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.

Threshold/Indicator	Maintenance Action	Inspection and Maintenance Frequency
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	If mosquitos/larvae are observed: first, immediately remove any standing water by dispersing to nearby landscaping; second, make corrective measures as applicable to restore BMP drainage to prevent standing water. If mosquitos persist following corrective measures to remove standing water, or if the BMP design does not meet the 96-hour drawdown criteria due to release rates controlled by an orifice installed on the underdrain, the County reviewer shall be contacted to determine a solution. A different BMP type, or a Vector Management Plan prepared with concurrence from the County of San Diego Department of Environmental Health, may be required.	• Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.
Underdrain clogged	Clear blockage.	Inspect if standing water is observed for longer than 24-96 hours following a storm event. Maintain when needed.

"25% full" is defined as ¼ of the depth from the design bottom elevation to the crest of the outflow structure (e.g., if the height to the outflow opening is 12 inches from the bottom elevation, then the materials must be removed when there is 3 inches of accumulation – this should be marked on the outflow structure).

Summary of Standard Inspection and Maintenance

The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district.

Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.

Threshold/Indicator	Maintenance Action	Inspection and Maintenance Frequency
Tree health	Routine actions as necessary to maintain tree health.	• Inspect monthly. • Maintain when needed.
Dead or diseased tree	Remove dead or diseased tree. Replace per original plans.	• Inspect monthly. • Maintain when needed.
Standing water in tree well for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to tree health	Loosen or replace soils surrounding the tree to restore drainage.	• Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	Disperse any standing water from the tree well to nearby landscaping. Loosen or replace soils surrounding the tree to restore drainage (and prevent standing water).	• Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed

Threshold/Indicator	Maintenance Action	Inspection and Maintenance Frequency
Entrance / opening to the tree well is blocked such that storm water will not drain into the tree well (e.g., a curb inlet opening is blocked by debris or a grate is clogged causing runoff to flow around instead of into the tree well; or a surface depression is filled such that runoff drains away from the tree well)	Make repairs as appropriate to restore drainage into the tree well.	• Inspect monthly. • Maintain when needed.

ATTACHMENT "A1"
INSPECTION & MAINTENANCE SCHEDULE

PREVENTATIVE MAINTENANCE AND ROUTINE INSPECTION					
TYPE BMP	Routine Action	Measurement Indicator	Measurement Frequency	MAINTENANCE ACTIVITY	SITE-SPECIFIC REQUIREMENTS
Landscaping & irrigation	Proper irrigation & Fertilizer.	• Less than 80% Coverage • Evidence of overspray, runoff • Debris, dead vegetation	Prior to August 31 each year	Re-seed or Re-plant. Repair Irrigation system with-in 5-days.	All slopes and landscaped areas are to have a minimum coverage of 80%. All exposed soils shall be mulched.
Trash storage areas	Trash free and removal of silt, spills, residues and debris.	• Trash on ground • Open bins Leaks, spills, staining	Weekly inspection	Remove trash and debris accumulations. Clean up spills, dried spills, and residues. Contain all wash water for disposal to the sanitary sewer.	All trash storage areas to be free from trash and residues
Roof drain	Trash free and removal of silt, sedimentation & Debris	Silt build up of more than 1" no trash	Prior to August 31 each year and weekly during rain season.	Remove all trash and silt and repair any damage to roof drains,	All Roof to be free from trash and silt and in good repair
Bioretentions and Vegetated Swales	Trash free and removal of silt	Silt build up, trash, Exposed soils, dead vegetation, ponded water, and excessive vegetation (see TC-30 in Attachment E-1 "BMP Specifications")	Prior to August 31 each year and weekly during rain season	Remove trash and silt –repair and reseed exposed areas, maintain plant height so as not be shorter than 2" or higher than 5" remove all ponded water weekly inspections, (See TC-30 in Attachment E-1 "BMP Specifications")	All bio-filters to be free from trash and silt at all times, ponding of water for more than 72 hours; maintenance will be required
Down spouts and HVAC systems	Visual Inspection	They are not permitted to be connected to the storm drain conveyance system.	All non-storm water discharges must either drain to landscaped areas, or be plumbed to the sewer. Construct a dedicated sewer connection for the annual backwashing of black water from any proposed private		

PREVENTATIVE MAINTENANCE AND ROUTINE INSPECTION					
TYPE BMP	Routine Action	Measurement Indicator	Measurement Frequency	MAINTENANCE ACTIVITY	SITE-SPECIFIC REQUIREMENTS
			fire suppression systems.		
Parking Lot	Visual inspection	Shall be maintained free from trash, sediment, debris, oil and grease.	Prior to August 31 each year and routinely as needed	Shall be cleaned and swept to remove oil, grease, sediment, debris, etc.	
Storm Drains, Inlets and Outlet Structures	Visual inspection	Shall be maintained free from trash, sediment, debris, oil and grease.	Prior to August 31 each year and routinely as needed	Removal of trash sediment and debris and repair of any structural damage, repainting or replacing damaged inlet markings and labels	
Fire Suppression Systems	Visual inspection	Backwashing water from all private fire suppression systems and draining into a sanitary sewer connection	Once a year	Backwashing water from all private fire suppression systems and draining into a sanitary sewer connection	

ATTACMENT "B1"

Annual Estimate to Maintain all BMPs	Annual	10-Year
Landscaping & Bio-Retentions& Tree Well Maintenance of landscaping and bio-retentions is already included in the property management responsibilities. Additional cost:	$400	$4,000
Irrigation System: Inspection and maintenance of the irrigation system is already included in the property management responsibilities, Additional cost:	$100	$1,000
Training: Once a year & training of new employees within their first week of employment.	$100	$1,000
Total Estimated Annual Cost to Maintain BMPs	$600	$6,000

ATTACHMENT "C1"

BMP TRAINING LOG			
Date MO/Day/Yr	**Type of Training**	**Personnel Trained**	**Trainer**

ATTACHMENT "D1"

INSPECTION AND MAINTENANCE LOG				
BMP TYP & LOCATION	DATE M/D/Y	Name of Person Inspecting	Description of BMP Condition/ Description repair required if any	Date Repair made and Description repair made and by who

ATTACHMENT “E1”

BMP SPECIFICATIONS

E.14 BF-1 Biofiltration

Location: 43rd Street and Logan Avenue, San Diego, California

MS4 Permit Category
Biofiltration

Manual Category
Biofiltration

Applicable Performance Standard
Pollutant Control
Flow Control

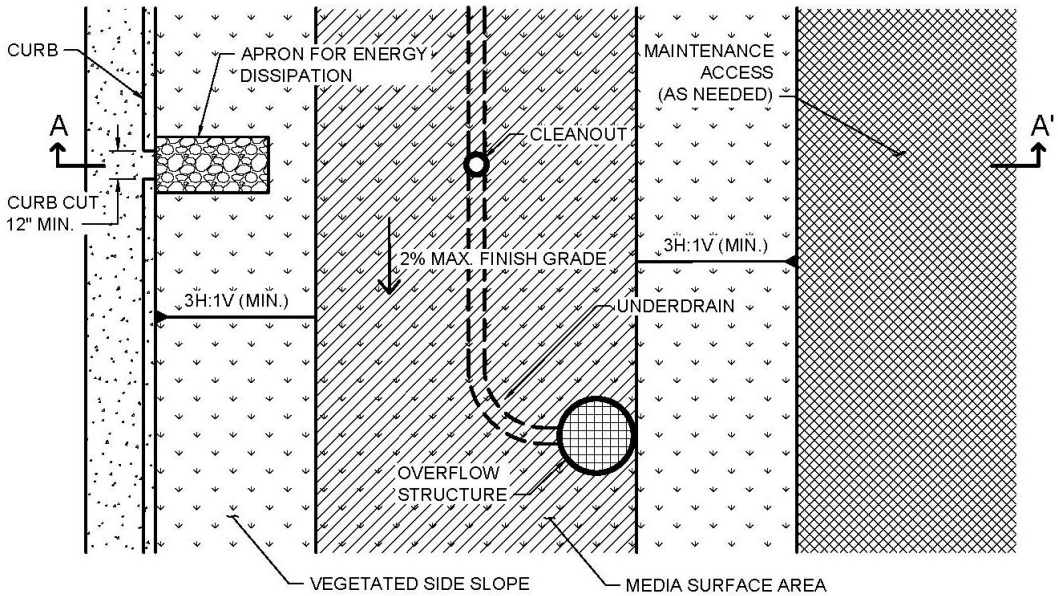
Primary Benefits
Treatment
Volume Reduction (Incidental)
Peak Flow Attenuation (Optional)

Description

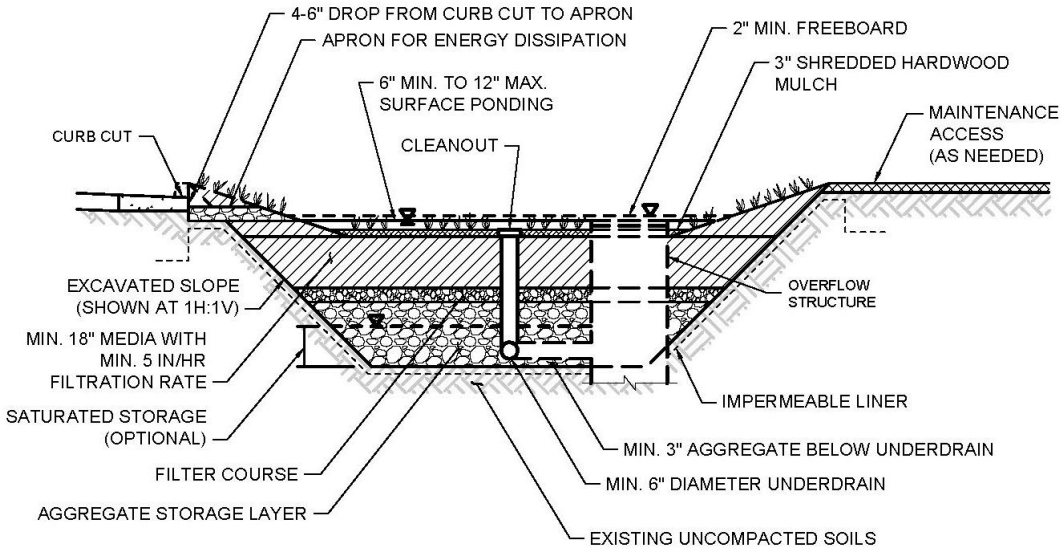
Biofiltration (Bioretention with underdrain) facilities are vegetated surface water systems that filter water through vegetation, and soil or engineered media prior to discharge via underdrain or overflow to the downstream conveyance system. Bioretention with underdrain facilities are commonly incorporated into the site within parking lot landscaping, along roadsides, and in open spaces. Because these types of facilities have limited or no infiltration, they are typically designed to provide enough hydraulic head to move flows through the underdrain connection to the storm drain system. Treatment is achieved through filtration, sedimentation, sorption, biochemical processes and plant uptake.

Typical biofiltration components include:

- Inflow distribution mechanisms (e.g, perimeter flow spreader or filter strips)
- Energy dissipation mechanism for concentrated inflows (e.g., splash blocks or riprap)
- Shallow surface ponding for captured flows
- Side slope and basin bottom vegetation selected based on expected climate and ponding depth
- Non-floating mulch layer
- Media layer (planting mix or engineered media) capable of supporting vegetation growth
- Filter course layer consisting of aggregate to prevent the migration of fines into uncompacted native soils or the aggregate storage layer
- Aggregate storage layer with underdrain(s)
- Impermeable liner or uncompacted native soils at the bottom of the facility
- Overflow structure



PLAN
NOT TO SCALE



SECTION A-A'
NOT TO SCALE

Typical plan and Section view of a Biofiltration BMP

Design Adaptations for Project Goals

Biofiltration Treatment BMP for storm water pollutant control. The system is lined or un-lined to provide incidental infiltration, and an underdrain is provided at the bottom to carry away filtered runoff. This configuration is considered to provide biofiltration treatment via flow through the media

layer. Storage provided above the underdrain within surface ponding, media, and aggregate storage is considered included in the biofiltration treatment volume. Saturated storage within the aggregate storage layer can be added to this design by raising the underdrain above the bottom of the aggregate storage layer or via an internal weir structure designed to maintain a specific water level elevation.

Integrated storm water flow control and pollutant control configuration. The system can be designed to provide flow rate and duration control by primarily providing increased surface ponding and/or having a deeper aggregate storage layer above the underdrain. This will allow for significant detention storage, which can be controlled via inclusion of an outlet structure at the downstream end of the underdrain.

Recommended Siting Criteria

	Siting Criteria	***Intent/Rationale***
☐	Placement observes geotechnical recommendations regarding potential hazards (e.g., slope stability, landslides, liquefaction zones) and setbacks (e.g., slopes, foundations, utilities).	Must not negatively impact existing site geotechnical concerns.
☐	An impermeable liner or other hydraulic restriction layer is included if site constraints indicate that infiltration or lateral flows should not be allowed.	Lining prevents storm water from impacting groundwater and/or sensitive environmental or geotechnical features. Incidental infiltration, when allowable, can aid in pollutant removal and groundwater recharge.
☐	The thickness of the Impermeable Liner shall be 30 MIL per County Green Streets Design Standard Drawing GS-3.00 and County Green Streets Supplement to Caltrans Specifications 20-11.08B.	Considerations when choosing an Impermeable Liner may include placement methods, media and underlying soil characteristics, and intended design life among others.
☐	Contributing tributary area must be ≤ 5 acres (≤ 1 acre preferred).	Bigger BMPs require additional design features for proper performance. Contributing tributary area greater than 5 acres may be allowed at the discretion of County staff if the following conditions are met: 1) incorporate design features (e.g. flow spreaders) to minimize short circuiting of flows in the BMP and 2) incorporate additional design features requested by County staff for proper performance of the regional BMP.

Siting Criteria		*Intent/Rationale*
☐	Finish grade of the facility is ≤ 2%.	Flatter surfaces reduce erosion and channelization within the facility.

Design Criteria and Considerations

Biofiltration must meet the following design criteria. Deviations from the below criteria may be approved at the discretion of County staff if it is determined to be appropriate:

Siting and Design		*Intent/Rationale*
Surface Ponding		
☐	Surface ponding is limited to a 24-hour drawdown time.	Surface ponding limited to 24 hour for plant health. Surface ponding drawdown time greater than 24-hours but less than 96 hours may be allowed at the discretion of County staff if certified by a landscape architect or agronomist.
☐	Surface ponding depth is ≥ 6 and ≤ 12 inches.	Surface ponding capacity lowers subsurface storage requirements. Deep surface ponding raises safety concerns. Surface ponding depth greater than 12 inches (for additional pollutant control or surface outlet structures or flow-control orifices) may be allowed at the discretion of County staff if the following conditions are met: 1) surface ponding depth drawdown time is less than 24 hours; and 2) safety issues and fencing requirements are considered (typically ponding greater than 18" will require a fence and/or flatter side slopes) and 3) potential for elevated clogging risk is considered.
☐	A minimum of 2 inches of freeboard is provided.	Freeboard provides room for head over overflow structures and minimizes risk of uncontrolled surface discharge.
☐	Side slopes are stabilized with vegetation and are = 3H:1V or shallower.	Gentler side slopes are safer, less prone to erosion, able to establish vegetation more quickly and easier to maintain.

	Siting and Design	***Intent/Rationale***
Vegetation		
☐	Plantings are suitable for the climate and expected ponding depth. A plant list to aid in selection can be found in Appendix F.	Plants suited to the climate and ponding depth are more likely to survive.
☐	An irrigation system with a connection to water supply should be provided as needed.	Seasonal irrigation might be needed to keep plants healthy.
Mulch (Mandatory)		
☐	3 inches of well-aged, shredded hardwood mulch.	Mulch will suppress weeds and maintain moisture for plant growth.
Media Layer		
☐	Media maintains a minimum filtration rate of 5 in/hr over lifetime of facility. An initial filtration rate of 8 to 12 in/hr is recommended to allow for clogging over time; the initial filtration rate should not exceed 12 inches per hour.	A filtration rate of at least 5 inches per hour allows soil to drain between events. The initial rate should be higher than long term target rate to account for clogging over time. However an excessively high initial rate can have a negative impact on treatment performance, therefore an upper limit is needed.
☐	Media is a minimum 18 inches deep, meeting either of these two media specifications: Appendix F.2 Biofiltration Soil Media (BSM) **or** County of San Diego Low Impact Development Handbook: Appendix G -Bioretention Soil Specification (June 2014, unless superseded by more recent edition).	A deep media layer provides additional filtration and supports plants with deeper roots. Standard specifications must be followed.
	Alternatively, for proprietary designs and custom media mixes not meeting the media specifications, the media meets the pollutant treatment performance criteria in Section F.1.1.	For non-standard or proprietary designs, compliance with F.1.1 ensures that adequate treatment performance will be provided.

Siting and Design		***Intent/Rationale***
☐	Media surface area is 3% of contributing area times adjusted runoff factor or greater. Unless demonstrated that the BMP surface area can be smaller than 3%.	Greater surface area to tributary area ratios: a) maximizes volume retention as required by the MS4 Permit and b) decrease loading rates per square foot and therefore increase longevity. Adjusted runoff factor is to account for site design BMPs implemented upstream of the BMP (such as rain barrels, impervious area dispersion, etc.). Refer to Appendix B guidance. If media surface area is under 3% of contributing area, refer to Sediment Loading calculations in Appendix B.
☐	Where receiving waters are impaired or have a TMDL for nutrients, the system is designed with nutrient sensitive media design (see fact sheet BF-2).	Potential for pollutant export is partly a function of media composition; media design must minimize potential for export of nutrients, particularly where receiving waters are impaired for nutrients.
Filter Course Layer		
☐	A filter course is used to prevent migration of fines through layers of the facility. Filter fabric is not used.	Migration of media can cause clogging of the aggregate storage layer void spaces or subgrade. Filter fabric is more likely to clog.
☐	Filter course is a minimum of 6 inches thick provided in two separate 3 inch layers. The top layer shall be made of ASTM C33 choker sand and the bottom layer shall be of ASTM No. 8 aggregate. Marker stakes shall be used to ensure uniform lift thickness.	To prevent reduction of the available storage volume that would lead to clogging of the underdrain and native soil beneath the BMP.
☐	Filter course is washed and free of fines.	Washing aggregate will help eliminate fines that could clog the facility and impede infiltration.
☐	Filter course calculations assessing suitability for particle migration prevention have been completed.	Gradation relationship between layers can evaluate factors (e.g., bridging, permeability, and uniformity) to determine if particle sizing is appropriate or if an intermediate layer is needed.

	Siting and Design	***Intent/Rationale***
Aggregate Storage Layer		
☐	Class 2 Permeable per Caltrans specification 68-1.025 is recommended for the storage layer. Washed, open-graded crushed rock may be used, however a 4-6 inch washed pea gravel filter course layer at the top of the crushed rock is required.	Washing aggregate will help eliminate fines that could clog the aggregate storage layer void spaces or subgrade.
☐	The depth of aggregate provided (12-inch typical) and storage layer configuration is adequate for providing conveyance for underdrain flows to the outlet structure.	Proper storage layer configuration and underdrain placement will minimize facility drawdown time.
Inflow, Underdrain, and Outflow Structures		
☐	Inflow, underdrains and outflow structures are accessible for inspection and maintenance.	Maintenance will prevent clogging and ensure proper operation of the flow control structures.
☐	Inflow velocities are limited to 3 ft/s or less or use energy dissipation methods. (e.g., riprap, level spreader) for concentrated inflows.	High inflow velocities can cause erosion, scour and/or channeling.
☐	Curb cut inlets are at least 12 inches wide, have a 4-6 inch reveal (drop) and an apron and energy dissipation as needed.	Inlets must not restrict flow and apron prevents blockage from vegetation as it grows in. Energy dissipation prevents erosion.
☐	Underdrain outlet elevation should be a minimum of 3 inches above the bottom elevation of the aggregate storage layer.	A minimal separation from subgrade or the liner lessens the risk of fines entering the underdrain and can improve hydraulic performance by allowing perforations to remain unblocked.
☐	Minimum underdrain diameter is 6 inches.	Smaller diameter underdrains are prone to clogging.
Inflow, Underdrain, and Outflow Structures		
☐	Underdrains are made of slotted, PVC pipe conforming to ASTM D 3034 or equivalent or corrugated, HDPE pipe conforming to AASHTO 252M or equivalent.	Slotted underdrains provide greater intake capacity, clog resistant drainage, and reduced entrance velocity into the pipe, thereby reducing the chances of solids migration.

Siting and Design		*Intent/Rationale*
☐	An underdrain cleanout with a minimum 6-inch diameter and lockable cap is placed every 250 to 300 feet as required based on underdrain length.	Properly spaced cleanouts will facilitate underdrain maintenance.
☐	Overflow is safely conveyed to a downstream storm drain system or discharge point Size overflow structure to pass 100-year peak flow for on-line infiltration basins and water quality peak flow for off-line basins.	Planning for overflow lessens the risk of property damage due to flooding.

Conceptual Design and Sizing Approach for Storm Water Pollutant Control Only

To design biofiltration for storm water pollutant control only (no flow control required), the following steps should be taken:

1. Verify that siting and design criteria have been met, including placement requirements, contributing tributary area, maximum side and finish grade slopes, and the recommended media surface area tributary ratio.
2. Calculate the DCV per Appendix B based on expected site design runoff for tributary areas.
3. Use the sizing worksheet presented in Appendix B.5 to size biofiltration BMPs.

Conceptual Design and Sizing Approach when Storm Water Flow Control is Applicable

Control of flow rates and/or durations will typically require significant surface ponding and/or aggregate storage volumes, and therefore the following steps should be taken prior to determination of storm water pollutant control design. Pre-development and allowable post-project flow rates and durations should be determined as discussed in Chapter 6 of the manual.

1. Verify that siting and design criteria have been met, including placement requirements, contributing tributary area, maximum side and finish grade slopes, and the recommended media surface area tributary ratio.
2. Iteratively determine the facility footprint area, surface ponding and/or aggregate storage layer depth required to provide detention storage to reduce flow rates and durations to allowable limits. Flow rates and durations can be controlled from detention storage by altering outlet structure orifice size(s) and/or water control levels. Multi-level orifices can be used within an outlet structure to control the full range of flows.
3. If bioretention with underdrain cannot fully provide the flow rate and duration control required by this manual, an upstream or downstream structure with significant storage volume such as an underground vault can be used to provide remaining controls.

4. After bioretention with underdrain has been designed to meet flow control requirements, calculations must be completed to verify if storm water pollutant control requirements to treat the DCV have been met.

Maintenance Overview

Normal Expected Maintenance. Biofiltration requires routine maintenance to: remove accumulated materials such as sediment, trash or debris; maintain vegetation health; maintain infiltration capacity of the media layer; replenish mulch; and maintain integrity of side slopes, inlets, energy dissipators, and outlets. A summary table of standard inspection and maintenance indicators is provided within this Fact Sheet.

Non-Standard Maintenance or BMP Failure. If any of the following scenarios are observed, the BMP is not performing as intended to protect downstream waterways from pollution and/or erosion. Corrective maintenance, increased inspection and maintenance, BMP replacement, or a different BMP type will be required.

- The BMP is not drained between storm events. Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health, and surface ponding longer than approximately 96 hours following a storm event poses a risk of vector (mosquito) breeding. Poor drainage can result from clogging of the media layer, filter course, aggregate storage layer, underdrain, or outlet structure. The specific cause of the drainage issue must be determined and corrected.
- Sediment, trash, or debris accumulation greater than 25% of the surface ponding volume within one month. This means the load from the tributary drainage area is too high, reducing BMP function or clogging the BMP. This would require pretreatment measures within the tributary area draining to the BMP to intercept the materials. Pretreatment components, especially for sediment, will extend the life of components that are more expensive to replace such as media, filter course, and aggregate layers.
- Erosion due to concentrated storm water runoff flow that is not readily corrected by adding erosion control blankets, adding stone at flow entry points, or minor re-grading to restore proper drainage according to the original plan. If the issue is not corrected by restoring the BMP to the original plan and grade, the County reviewer shall be contacted prior to any additional repairs or reconstruction.

Other Special Considerations. Biofiltration is a vegetated structural BMP. Vegetated structural BMPs that are constructed in the vicinity of, or connected to, an existing jurisdictional water or wetland could inadvertently result in creation of expanded waters or wetlands. As such, vegetated structural BMPs have the potential to come under the jurisdiction of the United States Army Corps of Engineers, SDRWQCB, California Department of Fish and Wildlife, or the United States Fish and Wildlife Service. This could result in the need for specific resource agency permits and costly mitigation to perform maintenance of the structural BMP. Along with proper placement of a structural

BMP, routine maintenance is key to preventing this scenario.

Sediment Loading. Consider the effects of BMP design and tributary area land uses on the clogging potential of the BMP. Complete the sediment loading analysis included in Appendix F.

E.2 SD-A Tree Wells

Tree Wells (Source: County of San Diego LID Manual – EOA, Inc.)

MS4 Permit Category
Site Design Retention

Manual Category
Site Design Infiltration

Applicable Performance Standard
Site Design Pollutant Control Flow Control

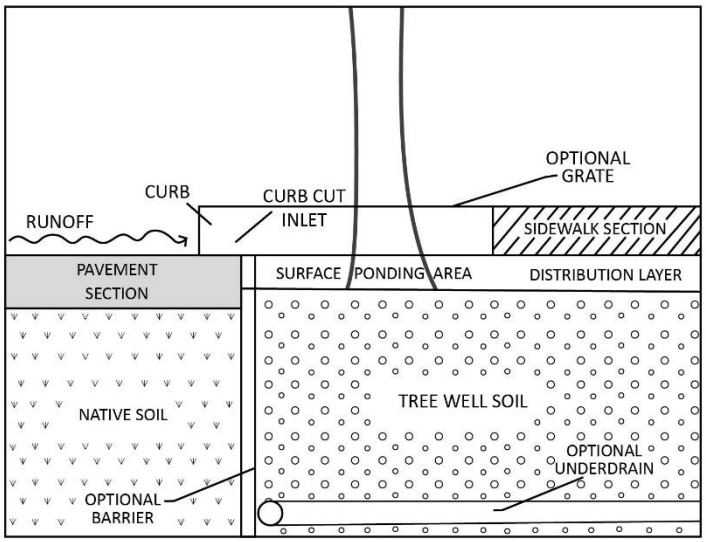
Primary Benefits
Volume Reduction

Description

Trees planted to intercept rainfall and runoff as described in this fact sheet may be used as storm water management measures to provide runoff reduction of the DCV per Appendix B.1.4. Additional benefits associated with tree wells, include energy conservation, air quality improvement, and aesthetic enhancement. In addition to the requirements provided in this fact sheet, tree wells located in the County Right-of-Way shall follow requirements in Appendix K of this manual. Deviations from the outlined criteria may be approved at the discretion of County staff. Typical storm water management benefits associated with trees include:

- **Interception of rainfall** – tree surfaces (roots, foliage, bark, and branches) intercept, evaporate, store, or convey precipitation to the soil before it reaches surrounding impervious surfaces
- **Reduced erosion** – trees protect denuded area by intercepting or reducing the velocity of rain drops as they fall through the tree canopy
- **Increased infiltration** – soil conditions created by roots and fallen leaves promote infiltration
- **Treatment of storm water** – trees provide treatment through uptake of nutrients and other storm water pollutants (phytoremediation) and support of other biological processes that break down pollutants

Typical tree well system components include:



Schematic of Tree Well

- Trees of the appropriate species for site conditions and constraints. Refer to the Plant List in this fact sheet.
- Available soil media reservoir volume based on mature tree size, soil type, water availability, surrounding land uses, and project goals
- Optional suspended pavement design to provide structural support for adjacent pavement without requiring compaction of underlying layers
- Optional root barrier devices as needed; a root barrier is a device installed in the ground, between a tree and the sidewalk, intended to guide roots down and away from the sidewalk in order to prevent sidewalk lifting from tree roots.
- Optional tree grates; to be considered to maximize available space for pedestrian circulation and to protect tree roots from compaction related to pedestrian circulation; tree grates are typically made up of porous material that will allow the runoff to soak through.
- Optional shallow surface depression for ponding of excess runoff
- Optional planter box drain

Design Adaptations for Project Goals

Site design BMP to provide incidental treatment. Tree wells primarily function as site design BMPs for incidental treatment.

Pollutant Control BMP to provide treatment. Project proponents are allowed to design trees to reduce the volume of stormwater runoff that requires treatment, (the Design Capture Volume [DCV]), or completely fulfill the pollutant control BMP requirements by retaining the entire DCV. Benefits from tree wells are accounted for by using the volume reduction values in Table B.1-3 presented in Appendix B. This credit can apply to other trees that are used for landscaping purposes that meet the same criteria. Project proponents are required to provide calculations supporting the amount of credit claimed from implementing trees within the project footprint.

Flow Control BMP to meet hydromodification requirements. Project proponents are also allowed to design tree wells as a flow control BMP. Benefits from tree wells are accounted for by using the DCV multipliers listed below. Project proponents are required to provide calculations showing that the entire DCV including the DCV multiplier is retained.

Design Criteria and Considerations

Tree Wells, whether designed as Site Design BMPs, as Stormwater Pollutant Control BMP, or as a Flow Control BMP must meet the following design criteria and considerations, and if placed in the right-of-way must be consistent with the County of San Diego Green Streets Design Criteria and Green Streets Standard Drawings in Appendix K. Deviations from the below criteria may be approved at the discretion of the County staff if it is determined to be appropriate:

<table>
<tr><th></th><th>Siting and Design</th><th>Intent/Rationale</th></tr>
<tr><td>☐</td><td>Tree species is appropriately chosen for the development (private or public). For public rights-of-ways, local planning guidelines and zoning provisions for the permissible species and placement of trees are consulted. A list of trees appropriate for site design that can be used by all county municipalities are provided in this fact sheet.</td><td>Proper tree placement and species selection minimizes problems such as pavement damage by surface roots and poor growth.</td></tr>
<tr><td>☐</td><td>Tree well placement: ensure area is graded; and the well is located so that full amount of DCV reduction drains to the well.</td><td>Minimizes short-circuiting of run off and assures DCV reductions are retained onsite.</td></tr>
<tr><td>☐</td><td>Location of trees planted along public streets follows guidance on green infrastructure (Appendix K). Vehicle and pedestrian line of sight and clear recovery zones are considered in tree selection and placement.

Unless exemption is granted by County staff the following minimum tree separation distance is followed
<table>
<tr><th>Improvement</th><th>Minimum distance to tree well</th></tr>
<tr><td>Traffic Signal, Stop sign</td><td>20 feet</td></tr>
<tr><td>Underground Utility lines (except sewer)</td><td>5 feet</td></tr>
<tr><td>Sewer Lines</td><td>10 feet</td></tr>
<tr><td>Above ground utility structures (Transformers, Hydrants, Utility poles, etc.)</td><td>10 feet</td></tr>
<tr><td>Driveways</td><td>10 feet</td></tr>
<tr><td>Intersections (intersecting curb lines of two streets)</td><td>25 feet</td></tr>
</table></td><td>Roadway safety for both vehicular and pedestrian traffic is a key consideration for placement along public streets.</td></tr>
</table>

	Siting and Design	*Intent/Rationale*
☐	**Underground utilities and overhead wires** are considered in the design and avoided or circumvented. Underground utilities are routed around or through the planter in suspended pavement applications. All underground utilities are protected from water and root penetration.	Tree growth can damage utilities and overhead wires resulting in service interruptions. Protecting utilities routed through the planter prevents damage and service interruptions. Refer to Section 6.6 of the Green Streets Design Criteria in Appendix K for guidelines regarding utility placement and potential conflict with BMP facilities.
☐	Suspended pavement was used for confined Tree Well soil volume. Suspended pavement design was developed where appropriate to minimize soil compaction and improve infiltration and filtration capabilities. Suspended pavement was constructed with an approved structural cell.	Suspended pavement designs as shown in Page 7 of the Green Streets Guidelines in Appendix K provide structural support without compaction of the underlying layers, thereby promoting tree growth. Recommended structural cells include poured in place concrete columns, Silva Cells manufactured by Deeproot Green Infrastructures and Stratacell and Stratavault systems manufactured by Citygreen Systems.
☐	A minimum soil volume of 2 cubic feet per square foot of mature tree canopy projection area is provided for each tree. Canopy projection area is the ground area beneath the mature tree, measured at the drip line. Soil volume must be within 1.5 times the mature tree canopy radius. Soil depth shall be a minimum of 30 inches deep, preferably 36 inches deep. When placing tree well next to curb use Structural Soil as outlined in the section below titled "Confined Tree Well Soil Volume" and use Specifications in Appendix K Use Amended Soil per Fact Sheet SD-F in all other cases.	The minimum soil volume ensures that there is adequate storage volume to allow for unrestricted evapotranspiration and infiltration.

	Siting and Design	*Intent/Rationale*
	To claim credit for existing trees, the root structure of existing tree shall be protected and additional soil volumes provided to meet the above requirements.	
☐	A berm or well must be constructed around the perimeter of the soil volume to be credited and an inlet structure must be of the appropriate size to allow runoff to enter the well. Considerations should be made to prevent root and water intrusion damage to surrounding infrastructure.	The minimum soil volume ensures that there is adequate storage volume to allow for unrestricted storage, evapotranspiration, and infiltration.
☐	DCV from the tributary area draining to the tree is equal to or greater than the tree credit volume	The minimum tributary area ensures that the tree receives enough runoff to fully utilize the infiltration and evapotranspiration potential provided. In cases where the minimum tributary area is not provided, the tree credit volume must be reduced proportionately to the actual tributary area.
☐	Inlet opening to the tree that is at least 18 inches wide. A minimum 2 inch drop in grade from the inlet to the finish grade of the tree. Grated inlets are allowed for pedestrian circulation. Grates need to be ADA compliant and have sufficient slip resistance.	Design requirement to ensure that the runoff from the tributary area does not bypass the BMP. Different inlet openings and drops in grade may be allowed at the discretion of County staff if calculations are shown that the diversion flow rate (Appendix B.) from the tributary area can be conveyed to the tree. In cases where the inlet capacity is limiting the amount of runoff draining to the tree, the tree credit volume must be reduced proportionately.

Conceptual Design and Sizing Approach for Site Design

Determine the areas where tree wells can be used in the site design to achieve incidental treatment. Tree wells reduce runoff volumes from the site. Refer to Appendix B.2. Document the proposed tree locations in the SWQMP.

Conceptual Design and Sizing Approach for Pollutant Control

When trees are proposed as a storm water pollutant control BMP, the project proponent must submit detailed calculations for the DCV treated by trees. Document the proposed tree locations on the BMP Plan & DMA Map, and provide sizing calculations in the SWQMP Attachment following the steps in Appendix B.

Conceptual Design and Sizing Approach for Flow Control

When trees are proposed as a flow control BMP, the project proponent must submit detailed calculations for the Required Retention Volume (RRV) treated by trees. Document the proposed tree locations on the BMP Plan & DMA Map, and provide sizing calculations in the SWQMP Attachment. Tree Wells that are designed to meet flow control requirements are designated as SSD BMPs.

1. **Determine how much volume you need**. The Required Retention Volume (RRV) is the volume of rainfall that must be retained by the tree wells in the DMA to meet flow control requirements. It is calculated by multiplying the DCV by a DCV multiplier.

   a. Determine the DCV. See Appendix B.

   b. Determine the DCV Multiplier. The DCV Multiplier is based on two factors: (1) The tree well soil depth and, (2) The Hydrologic Soil Group. Once you know both values, determine the DCV Multiplier using this table:

   c. Calculate the Required Retention Volume (DCV x DCV Multiplier). Calculate the RRV by multiplying the DCV by the DCV Multiplier. This is the volume of runoff that must be offset by the Tree Well Credit Volume. Repeat this process for each DMA.

Minimum Tree Well Soil Depth (inches)	Hydrologic Soil Group				
	A	B	C	D (Default)	
30"	1.60	2.20	2.50	2.90	DCV Multiplier
36"	1.80	2.47	2.83	3.17	
42"	2.00	2.73	3.17	3.43	
48"	2.20	3.00	3.50	3.70	

DCV Multiplier Table

Tree Well Soil Depth is the vertical distance from the top to the bottom of the soil layer in the tree well. **Hydrologic Soil Group** describes the native soil surrounding the tree well. Soil type affects how well water can infiltrate into the area surrounding the tree well. Group A soils provide the most infiltration and Group D the least. If your soil type is unknown, you can assume Group D. But this will result in larger DCV Multipliers, and in turn increase the size or number of tree wells needed.

Alternative Proposals: You can also propose RRV values or use methods and assumptions different than those described here. Proposals must be based on SWMM modeling or other methods acceptable to the County.

2. **Determine how much volume you have**. The Tree Well Credit Volume is the volume of runoff retention in cubic feet per tree (ft^3/tree) to be provided by each tree well (or group) in the DMA. Together retain a volume that is equal to or greater than the RRV for the DMA.

   The volume credited for each tree well is based on the mature canopy diameter of the tree species selected. Any species listed below can be used in a tree well so long as it meets all other applicable restrictions and requirements for the project area. Native and drought tolerant species are required where feasible.

	Botanical Name	Common Name	Mature Height (ft)	Mature Canopy Diameter (ft)	Credit Volume per Tree (ft3)
1	*Ceanothus 'Ray Hartman"*	California Mountain Lillac	30	**10**	**40**
2	*Pittosporum Phillyraeoides*	Willow Pittosporum	25	**15**	**100**
3	*Salix Lasiolepsis*	Arroyo Willow	25		
4	*Arbutus Unedo*	Strawberry Tree	30	**20**	**180**
5	*Prunus Ilicifolia*	Hollyleaf Cherry	30		
6	*Prunus Lynoii*	Catalina Cherry	40		
7	*Cercis Occidentalis*	Western Redbud	25	**25**	**290**
8	*Heteromeles Arbutifolia*	Toyon, Christmas Berry	25		
9	*Alnus Rhombifolia*	White Elder	75	**30**	**420**
10	*Arbutus 'Marina'*	Hybrid Strawberry Tree	35		
11	*Chilopsis Linearis*	Desert Willow	30		
12	*Lyonothamnus Floribundus*	Catalina Ironwood	50		
13	*Magnolia Grandiflora*	Southern Magnolia	40		
14	*Pinus Torreyana*	Torrey Pines	80		
15	*Platanus Racemosa*	California sycamore	60		
16	*Quercus Agrifolia*	Coast Live Oak	70		
17	*Quercus Engelmannii*	Engelmann Oak	50		
18	*Quercus Suber*	Cork Oak	40		
19	*Sambucus Mexicana*	Blue Elderberry	30		

Tree Palette Table

Below are sources for Tree Palette Mature Height and Mature Canopy Diameter:

A. Water Efficient Landscape Design Manual, County of San Diego, 2016
B. Sustainable Landscapes Guidelines, San Diego County Water Authority, 2015
C. Low Impact Development Handbook, County of San Diego, 2014
D. Low Impact Development Design Manual, City of San Diego, 2011
E. Street Tree Selection Guide, City of San Diego, 2013
F. Environmentally Friendly Garden Plant List, City of San Diego, 2004
G. BMP Design Manual, County of San Diego, 2016
H. California Native Plant Society. 2017

Alternative Species. Tree species other than those listed are allowable, but must be approved by the County. If you know the mature canopy diameter of the species you want to propose, use the values in the table to determine its credit volume. Note that even if you select a species with a canopy diameter greater than **30 feet**, the maximum credit any tree can generate is **420 ft^3**.

3. **Determine if you have enough volume**. Compare your total Tree Well Credit Volume from Step 2 to the RRV you calculated in Step 1. Once your Credit Volume is equal to or greater than

your RRV, this requirement is satisfied. If your Credit Volume is initially too low, adjust your design either to (1) increase it with more or bigger trees, or (2) decrease the RRV through DCV reductions.

Tree wells will normally be placed at the **discharge point** of the DMA, either individually or in groups. If some of them will retain runoff from different areas in the DMA, RRV and DCV calculations must be specific to each subarea.

If an **underdrain** is proposed for the Tree Well, the sizing factors shown in the DCV Multiplier Table cannot be used, and instead continuous simulation modeling should be performed. This would allow to obtain credit for soil volume underneath the underdrain.

Tree Planting Design in New or Reconstructed Streetscapes

1. Maximized open soil area for tree planting is the most cost effective method of achieving the required soil volume.
2. Tree wells within sidewalks shall have a minimum open area of four feet wide by six feet long. Larger areas may be required to accommodate large root balls.
3. Tree well soil characteristics shall meet the requirements of SD-F Amended Soil.

Structural Requirements for Confined Tree Well Soil Volume

In order to provide adequate soil volume for tree wells, soils may be placed confined beneath adjacent paved surfaces. Acceptable soil systems capable of carrying D-50 loading include structural soils, structural slabs, and structural cells:

1. Structural soil systems include CU-StructuralSoil™, Stalite Structural Soil, or equivalent.
2. Suspended pavements that allow uncompacted growing soil beneath the sidewalk include; structural slabs that span between structural supports, structural cells, and other commercially available structural systems. See Page 7 of the Green Streets Guidelines in Appendix K for illustrations. Manufacturer details and certification must be provided for commercial systems. Structural calculations and details must be provided for structural slab installations. Structural cells are commercially-available structural systems placed subsurface that support the sidewalk and are filled with amended soil (SD-F). Manufacturer details and certification must be provided for commercial systems.

Stormwater Retention and Treatment Volume

Tree wells with expanded soil volume will serve as a method of capturing and retaining the required volume of stormwater in accordance with County requirements in Appendix B of this manual. These facilities can be designed to meet the County requirements when surface ponding volume is provided, whether designed as an enclosed plant bed with covered soil volume, or a continuous open area (either mulched or with turf) with soil volume under the adjacent sidewalk.

Maintenance Overview

Normal Expected Maintenance. Tree health shall be maintained as part of normal landscape maintenance. Additionally, ensure that storm water runoff can be conveyed into the tree well as

designed. That is, the opening that allows storm water runoff to flow into the tree well (e.g., a curb opening, tree grate, or surface depression) shall not be blocked, filled, re-graded, or otherwise changed in a manner that prevents storm water from draining into the tree well. A summary table of standard inspection and maintenance indicators is provided within this Fact Sheet.

Non-Standard Maintenance or BMP Failure. Trees wells are site design BMPs that normally do not require maintenance actions beyond routine landscape maintenance. The normal expected maintenance described above ensures the BMP functionality. If changes have been made to the tree well entrance / opening such that runoff is prevented from draining into the tree well (e.g., a curb inlet opening is blocked by debris or a grate is clogged causing runoff to flow around instead of into the tree well, or a surface depression has been filled so runoff flows away from the tree well), the BMP is not performing as intended to protect downstream waterways from pollution and/or erosion. Corrective maintenance will be required to restore drainage into the tree well as designed.

Surface ponding of runoff directed into tree wells is expected to infiltrate/evapotranspirate within 24-96 hours following a storm event. Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health, and surface ponding longer than approximately 96 hours following a storm event poses a risk of vector (mosquito) breeding. Poor drainage can result from clogging or compaction of the soils surrounding the tree. Loosen or replace the soils to restore drainage.

Other Special Considerations. Site design BMPs, such as tree wells, installed within a new development or redevelopment project are components of an overall storm water management strategy for the project. The presence of site design BMPs within a project is usually a factor in the determination of the amount of runoff to be managed with structural BMPs (i.e., the amount of runoff expected to reach downstream retention or biofiltration basins that process storm water runoff from the project as a whole). When site design BMPs are not maintained or are removed, this can lead to clogging or failure of downstream structural BMPs due to greater delivery of runoff and pollutants than intended for the structural BMP. Therefore, the County Engineer may require confirmation of maintenance of site design BMPs as part of their structural BMP maintenance documentation requirements. Site design BMPs that have been installed as part of the project should not be removed, nor should they be bypassed by re-routing roof drains or re-grading surfaces within the project. If changes are necessary, consult the County Engineer to determine requirements.

We All Live Downstream!

Clean Water is Important to All of Us!

When rain flows over streets and other surfaces, it picks up pollutants and carries them into the stormwater conveyance "storm drain" system.

Did you know that storm drains are **NOT** connected to sanitary sewer systems and treatment plants?

The storm drain system is designed to prevent flooding by transporting water away from developed areas.

However, this water is not filtered or treated, and all the contaminants it contains eventually flow to our streams, lakes, and ocean where we swim and fish.

Once there, polluted runoff can harm wildlife and habitats. In some cases, it can even cause beach closures or make fish and shellfish unsafe to eat.

Why do we need Clean Water?

Clean water is essential for every aspect of life. In addition to sustaining our local water resources it ensures economic growth and prosperity. Population growth has impacted water quality and placed increasing pressure on supplies. Controlling pollution is critical to preserving our aquatic resources and the economic viability of this region.

How you can help keep our water clean...

Residents of San Diego County can make a difference. Becoming aware of ways to prevent stormwater pollution is the first step toward

We All Live Downstream!

County of San Diego, Watershed Protection Program
Stormwater HOTLINE: (888) 846-0800

project clean water

All Live Downstream!

Easy Steps to Clean Water

Sweep or Rake

Conserve water.
Do not use a hose to wash off sidewalks, driveways, and patios. Sweep up debris and put it in a trash can. Rake up yard waste to compost or recycle.

Reduce the Use of Landscape Chemicals

Decrease the use of lawn and garden care products such as pesticides, weed killers, and chemical fertilizers. Consider using non-toxic pest control methods. Avoid over watering which may wash these products into the gutter and storm drains.

Buy Non-Toxic Products

When possible, use non-toxic products for household cleaning. If you must use a toxic cleaning product, buy small quantities, use it sparingly, and properly dispose of unused portions. For the Household Hazardous Waste collection facility nearest you, call 1-800 CLEANUP
1(800) 253-2687.

Recycle Used Motor Oil and Earn $$

Certified used oil collection centers will pay a few cents per gallon for used oil. Collect used oil in sealed containers and take it to a certified center. For the certified center nearest you, call 1-800 CLEANUP
1(800) 253-2687.

Dispose of Yard Waste Frequently

By disposing of grass, leaves, shrubs, and other organic matter more frequently — less will wash into storm drains. Request a green waste bin from your trash hauler, or compost your yard waste.

Clean up After Your Pets

Take a bag when you walk your pets and always clean up after them. Flush pet waste down the toilet or dispose of it in a sealed plastic bag and throw it in the trash.

Care for Your Vehicles

Change your oil routinely. Fix fluid leaks immediately. Keep your vehicles tuned-up. Wash your vehicle at home on an unpaved area, such as lawn or gravel. Use very little soap. Pour remaining soapy water to an indoor sink or toilet. Conserve water by using a shut-off nozzle. Consider using a car wash designed to collect the wash water.

For more information on how you can prevent the pollution of our creeks, rivers, lakes, and ocean or to report a problem, please call the **Stormwater HOTLINE** at **(888) 846-0800** or visit **www.projectcleanwater.org**.

County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance section 67.805 prohibits the discharge of pollutants to the stormwater conveyance system.

WHAT IS STORMWATER POLLUTION?

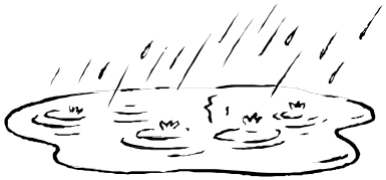
When rain flows over streets and other surfaces, it picks up pollutants and carries them into the stormwater conveyance ("storm drain") system. This system is designed to prevent flooding by transporting water away from developed areas.

However, this water is not filtered or treated, and all the contaminants it contains eventually flow to our streams, lakes, and ocean where we swim and fish.

Once there, polluted runoff can harm wildlife and habitats. In some cases, it can even cause beach closures or make fish and shellfish unsafe to eat.

Wastes from yard work are among the many common stormwater pollutants that can degrade water quality. Other examples include paint, oil and automotive fluids, construction debris, pet waste, litter, pool chemicals, and dirty wash water.

ONLY RAIN IN THE STORM DRAIN



HOW DOES YARD WORK POLLUTE STORMWATER?

What you do in the yard can directly impact the quality of our local waters. When soil, organic wastes, and chemicals leave your yard, they flow directly into streams, lakes, and the ocean where they can harm human health and the environment.

OVERWATERING Over watering washes fertilizers, pesticides, and herbicides into storm drains. In your yard these chemicals kill garden invaders, but when washed into local waters they poison fish and contaminate water.

CHEMICALS The "chemical only" approach to pest control often causes more problems than it solves. Over 90% of the insects in your lawn and garden are not harmful. Many gardeners use pesticides, herbicides, and fertilizers at over 20 times the rate necessary, greatly increasing polluted runoff.

ORGANIC WASTES
Grass clippings, leaves, and tree trimmings swept or blown into streets and gutters carry chemicals into our waterways and can clog catch basins, increasing the risk of flooding. Once they settle into water bodies, these materials begin to decompose, absorbing oxygen fish need to survive.

SEDIMENT Soil and dirt washed from yards can also harm aquatic life by clogging the gills of fish, blocking light transmission, lowering water temperatures, and inhibiting photosynthesis.

WHAT CAN I DO?

Here are some things you can do to keep contaminants out of runoff.

GENERAL LANDSCAPING TIPS

1. Schedule big projects for dry weather.
2. Store stockpiles under plastic tarps to protect them from wind and rain.
3. Store pesticides, fertilizers and other chemicals in a covered area.
4. Use plants that require less water.
5. Prevent erosion by planting fast-growing grasses to shield and bind the soil.

LAWN and GARDEN MAINTENANCE

1. Don't overwater. Use drip irrigation, soaker hoses, or micro-spray systems.
2. Use curbside yard waste recycling or take clippings to a landfill for composting.
3. Don't blow or rake leaves into the street or gutter. Avoid hosing down the pavement.
4. Don't overfertilize or apply chemicals near ditches, streams, or water bodies.

CHEMICAL ALTERNATIVES

1. Don't kill insects that aren't harmful.
2. Use less toxic products, for example dehydrating dusts (such as silica gel), insecticidal soaps, boric acid powder, horticultural oils, pyrethrin-based insecticides, bacterial insecticides, and organic or non-toxic fertilizers.
3. Use predatory insects when possible.
4. If you must use a pesticide, use one that is specifically designed to control your pest (listed on the label). Always read the label and use only as directed.

REFERRAL NUMBERS

For more information on stormwater management

(888) 846-0800

For information on recycling, composting and household toxics

(877) R-1 Earth
(877) 713-2784

To schedule a presentation for your community group or organization

(888) 846-0800

For residential gardening tips or questions please contact the Master Gardener Program

(858) 694-2860

For a daily update on beach and bay closures

(619) 338-2073

project clean water

"clean water through local commitment and action"

Call us for more information:

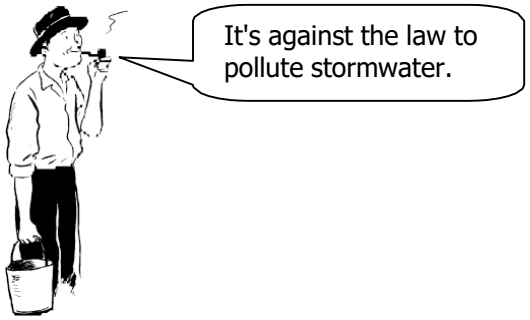
(888) 846-0800

or visit us at our web site:

www.sdcdpw.org

or

www.projectcleanwater.org



County Code §67.805 prohibits the discharge of anything but rainwater to the stormwater conveyance system or receiving waters.

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06/03

STORMWATER POLLUTION PREVENTION

YARD WORK

LANDSCAPING
GARDENING
PEST CONTROL

County of San Diego
Watershed Protection Program

WHAT IS STORMWATER POLLUTION?

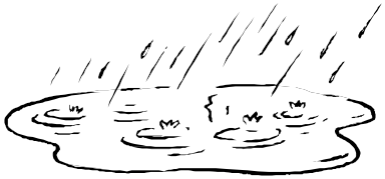
When rain flows over streets and other surfaces, it picks up pollutants and carries them into the stormwater conveyance ("storm drain") system. This system is designed to prevent flooding by transporting water away from developed areas.

However, this water is not filtered or treated, and all the contaminants it contains eventually flow to our streams, lakes, and ocean where we swim and fish.

Once there, polluted runoff can harm wildlife and habitats. In some cases, it can even cause beach closures or make fish and shellfish unsafe to eat.

Pet wastes are among the many common stormwater pollutants that can degrade water quality. Other examples include paint, oil and automotive fluids, construction debris, yard wastes, pesticides, litter, pool chemicals, and dirty wash water.

ONLY RAIN IN THE STORM DRAIN



WHY IS IT SO IMPORTANT TO PICK UP AFTER YOUR PET?

During rainfall, pet waste left on lawns, beaches, trails and sidewalks washes into storm drains. These wastes and the pathogens they contain (bacteria, parasites, and viruses) end up flowing directly into streams, lakes and the ocean where they can harm human health and the environment.

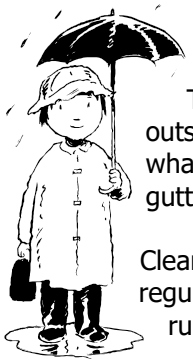
As they decompose, pet wastes demand a high level of oxygen from water. This demand can kill fish and plant life by reducing the amount of dissolved oxygen available to them.

Recent studies have shown dogs and cats are sources of fecal contamination at local beaches.

In addition to causing beach closures, this contamination can make people sick with sore throats, intestinal problems, rashes, nausea, and eye and ear infections.

County Code §67.805 prohibits the discharge of anything but rainwater to the stormwater conveyance system or receiving waters.

WHAT CAN I DO?



The next time you're caught outside in the rain, take a look at what's running off the street, into the gutters, and down storm drain inlets.

Clean up pet waste in your yard on a regular basis, to prevent polluted runoff.

Carry a bag or "scooper" when you take your pet on walks, to the park or other public places. Be prepared and clean up the pet waste.

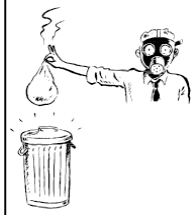
Do your part to help keep our water clean!

PICK UP AFTER YOUR PET!

It's as easy as 1-2-3

1. **Bring a bag**

2. **Clean it up**



3. **Dispose of it properly (toilet or trash)**

REFERRAL NUMBERS

For more information on stormwater management

(888) 846-0800

To reach the County Department of Environmental Health

(619) 338-2222

For information on recycling, composting and household toxics

(877)-R-1 Earth
(877) 713-2784

To schedule a presentation for your community group or organization

(888) 846-0800

For a daily update on beach and bay closures

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project clean water

"clean water through local commitment and action"

Call us for more information:

(888) 846-0800

Or visit us at our web site:

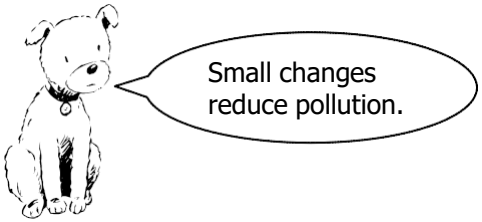
www.sdcdpw.org or

www.projectcleanwater.org

For pet licensing information, visit the

Department of Animal Services
web site:

www.sddac.com



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08/03

STORMWATER POLLUTION PREVENTION

PET WASTE

County of San Diego
Watershed Protection Program

Trash Can and Street Sweeping Facts:

- Street sweepers regularly clean your neighborhood streets of trash, dirt, and leaves as part of El Cajon's Storm Water Pollution Prevention Program. Keeping litter and debris out of the storm drains, streams and the ocean is the purpose of the city's street sweeping program.

- The sweepers cannot sweep the streets and gutters if there are trash cans or other objects in the way. You can help us be effective in keeping your neighborhood clean by moving your vehicles and removing trash cans from the curbside or street during the hours your street is swept.

- The El Cajon Municipal Code requires that trash cans not be placed curbside prior to four p.m. on the day prior to the collection and that they be removed from the curb prior to noon on the day following the collection.

- Although street sweepers do NOT clean streets that do NOT have curbs and gutters, citizens are encouraged to help keep our streets clean by removing trash, soil and debris.

What You Can Do To Help Sweep Our Streets!

DOs	DON'Ts
DO move your trash can, car, boat or RV to allow cleaning at the curb & gutter.	**DON'T** place large trash items, i.e. tree branches, wood, tires, etc. in the sweeper path that can damage the sweeper.
DO remove any and all obstructions from the curb and gutter, i.e., cans, bicycles, skateboards, etc. before sweepers arrive.	**DON'T** sweep litter into the storm drain catch basins and inlets.
DO place all litter/garbage in the proper trash and recycling containers.	**DON'T** allow your gardener to blow trash & debris from your property into the streets. Instead REQUIRE proper disposal & place in Yard Waste Containers.
DO place garbage cans and recycling containers on the curb, not in the gutter/street.	**DON'T** place large leaf piles at the curb.
DO tell your neighbors to support street cleaning by observing the DOs and DON'Ts.	

RECORDING REQUESTED BY:

City of Santee, CA

AFTER RECORDING MAIL TO:

City Clerk
City of Santee
10601 Magnolia Avenue
Santee, CA 92071-1266

ABOVE SPACE FOR RECORDER'S USE

AGREEMENT TO PERFORM STORM WATER FACILITIES MAINTENANCE

NO RECORDATION FEE REQUIRED; THIS DOCUMENT IS
EXEMPT FROM RECORDING FEES PURSUANT
TO CALIFORNIA GOVERNMENT CODE SECTIONS 6103 AND 27383

DOCUMENTARY TRANSFER TAX DUE $ 0

Assessor's Parcel No._____ Project No._____

This AGREEMENT for the maintenance and repair of certain Storm Water Management Facilities is entered into between _____ (hereinafter referred to as "Owner") and the City of Santee (hereinafter referred to as "City") for the benefit of the City, the successors in interest to the City, and the public generally.

RECITALS

A. Owner is the owner of certain real property located in the City of Santee, California, more particularly described in Exhibit "A" hereto (hereinafter referred to as the "Property"), and has proposed that the Property be developed as _____(insert brief description of type of project, e.g., "a 100 unit residential

subdivision”) _____ in accordance with applications for Tentative Map No. ___ _____, Development Review No. _____, Conditional Use Permit No. _____, Grading Permit No. _____ which are on file with the City. This Agreement is required as a condition of approval for such development as set forth in Resolution Nos. _____ _____.

B. In accordance with the City of Santee’s Storm Water Management and Discharge Control Ordinance, (Santee Municipal Code, Chapter 13.42), the City of Santee Subdivision Ordinance, the City of Santee Zoning Ordinance, the City of Santee Grading Ordinance and/or other ordinances or regulations of the City which regulate land development and urban runoff, Owner has prepared and submitted to the City, a site specific Storm Water Quality Management Plan (hereinafter the SWQMP), prepared by _____ and dated _ _____ which is on file with the City’s Department of Development Services. The SWQMP proposes that storm water runoff from the Property be treated by the use of various storm water management facilities which are identified in the SWQMP as “Best Management Practices” or “BMP’s”:

The precise location and extent of the BMP’s are described and shown in the SWQMP. The SWQMP specifies the frequency, manner, and standards by which the BMP’s must be repaired and maintained in order to retain their effectiveness, as set forth in the Operation and Maintenance Section included in the SWMP.

C. The information contained in the SWQMP and the Owner’s representation that the BMP’s will be maintained pursuant to the SWQMP have been relied upon by City in approving Owner’s development applications. It is the purpose of this Agreement to assure that the BMP’s are maintained in perpetuity, by creating obligations which are enforceable against the Owner and the Owner’s successors in interest in the Property. It is intended that these obligations be enforceable notwithstanding other provisions related to BMP maintenance which are provided by law.

AGREEMENT

NOW, THEREFORE, for consideration of City’s approval of the above development applications and the mutual covenants set forth herein, IT IS HEREBY AGREED AS FOLLOWS:

1. **Maintenance of Storm Water Management Facilities.** Owner agrees, for itself and its successors in interest, to all or any portion of the Property, to comply in all respects with the requirements of the Storm Water Management

and Discharge Control Ordinance and the SWQMP with regard to the maintenance of all BMP's as designated in the SWQMP, and in particular agrees to perform, at its sole cost, expense and liability, the following "Maintenance Activities": all inspections, cleaning, repairs, servicing, maintenance and other actions specified in the SWQMP, with respect to all of the BMP's listed at Recital "B" above, at the times and in the manner specified in the SWQMP as it currently exists or may be amended or modified as provided herein. Owner shall initiate, perform and complete all Maintenance Activities at the required time, without request or demand from City or any other agency. Owner further agrees that "Maintenance Activities" shall include replacement or modification of the BMP's in the event that the BMP fails to provide the necessary water quality treatment, it is found that the BMP was not installed correctly, or in the event that the BMP is not functioning as intended. Replacement shall be with an identical type, size and model of BMP, except that:

(a) The City Engineer may authorize substitution of an alternative BMP if he or she determines that it will function as good or better than the failed BMP. The City requires that proposed modifications be submitted for review and approval prior to making any changes in the field, and that the Storm Water Quality Management Plan be revised or amended and resubmitted for approval; and

(b) Pursuant to Section 13.42.070 of the Storm Water Management and Discharge Control Ordinance, any discharge that would result in or contribute to a violation of the City's NPDES Permit and any amendment, revision or re-issuance thereof, either separately considered or when combined with other discharges, is prohibited. Liability for any such discharge shall be the responsibility of the owner(s) causing or responsible for the discharge. Owner agrees that if the BMP, in the judgment of the Director of Development Services indicates that the BMP in use is inappropriate or inadequate to the circumstances and has or may result in a violation of water quality standards, the BMP must be modified or replaced with an upgraded BMP to prevent any actual or potential violation.

2. **Annual Inspection and Certification by Owner**

Owner agrees to provide documentation of BMP maintenance as required for the City to ensure that all storm water BMPs are properly maintained and are functioning as intended, in compliance with the site specific Storm Water Quality Management Plan. Owner shall provide annual certification that BMPs have been properly maintained for the time period of S*eptember 1 to August 31, each year. This documentation is due to the City* prior to September 15th of each year. Structural BMPs for which annual certification is required includes, but is not limited to: drainage inserts; detention basins; hydrodynamic separators; swales; filters;

bioretention facilities; and Low Impact Development Integrated Management Practices (LID IMPs).

3. **Notices.** Owner further agrees that it shall, prior to transferring ownership of any land on which any of the above BMP's are located, and also prior to transferring ownership of any such BMP, provide clear written notice of the above maintenance obligations associated with that BMP to the transferee. The Storm Water Quality Management Plan and all associated records must also be provided to all subsequent owners upon transfer of property title.

4. **City's Right to Perform Maintenance.** It is agreed that City shall have the right, but not the obligation, to elect to perform any or all of the Maintenance Activities if, in the City's sole judgment, Owner has failed to perform the same. It is recognized and understood that the City makes no representation that it intends to or will perform any of the Maintenance Activities, and any election by the City to perform any of the Maintenance Activities, shall in no way relieve Owner of its continuing maintenance obligations under this agreement. If the City elects to perform any of the Maintenance Activities, it is understood that the City shall be deemed to be acting as the agent of the Owner and said work shall be without warranty or representation by City as to safety or effectiveness, shall be deemed to be accepted by Owner "as is", and shall be covered by Owner's indemnity provisions below.

If the City performs any of the Maintenance Activities, after City has served written notice to the Owner to perform the same, and the Owner has failed to do so within a reasonable time stated in the City's written notice, then Owner shall pay all of the City's costs incurred in performing the Maintenance Activities within sixty days of receipt of an invoice for those costs.

5. **Right of Entry and Inspection by City.** Owner hereby grants to City a perpetual right of entry over, under and across Owner's Property, for purposes of accessing the BMP's and performing inspection of the BMP's or any of the Maintenance Activities related to maintenance of the BMP's. City shall have the right, at any time and without prior notice to Owner, to enter upon any part of said area as may be necessary or convenient for such purposes. Owner shall at all times maintain the Property so as to make the City's access clear and unobstructed. City is required to perform periodic inspection of Structural BMPs. Owner agrees to pay reasonable fees levied by the City on Owners of BMPs for the costs of managing the BMP inspection and maintenance tracking program.

6. **Administration of Agreement for City.** City hereby designates its Department of Development Services with responsibility and authority to administer this Agreement on behalf of City. Any notice or communication related to the

implementation of this Agreement desired or required to be delivered to City shall be addressed to:

Director of Development Services
City of Santee
10601 Magnolia Avenue
Santee, CA 92071

The City Engineer is also granted authority to enter into appropriate amendments to this Agreement on behalf of City, provided that the amendment is consistent with the purposes of this Agreement as set forth above.

7. **Defense and Indemnity.** City shall not be liable for, and Owner and its successors in interest shall defend and indemnify City and the employees and agents of City, against any and all claims, demands, liability, judgments, awards, fines, mechanic's liens or other liens, labor disputes, losses, damages, expenses, charges or costs of any kind or character, including attorneys' fees and court costs (hereinafter collectively referred to as "CLAIMS"), related to this Agreement and arising either directly or indirectly from any act, error, omission or negligence of Owner, Owner's successors, or their contractors, licensees, agents, servants or employees, including, without limitation, claims caused by the concurrent negligent act, error or omission, whether active or passive of City. Owner shall have no obligation, however, to defend or indemnify City from a claim if it is determined by a court of competent jurisdiction that such claim was caused by the sole negligence or willful misconduct of City. Nothing in this Agreement, in the City's approval of the subdivision or other applications or plans and specifications, or inspection of the work, is intended to acknowledge responsibility for any such matter, and City shall have absolutely no responsibility or liability therefore unless otherwise provided by applicable law.

8. **Common Interest Developments.** If the Property is developed as a "Common Interest Development" as defined in Civil Code section 1351(c) which will include membership in or ownership of an "Association" as defined in Civil Code section 1351(a), then the following provisions of this Paragraph 7 shall apply during such time as the Property is encumbered by a "Declaration" as defined in Civil Code section 1351(h), and the Common Area, as "Common Area" is defined in Civil Code section 1351(b), of the Property is managed and controlled by the Association:

(a) The Association, through its Board of Directors, shall assume full responsibility to perform the MAINTENANCE ACTIVITIES pursuant to this Agreement, and shall undertake all actions and efforts necessary to accomplish the MAINTENANCE ACTIVITIES, including but not limited to,

levying regular or special assessments against each member of the Association sufficient to provide funding for the MAINTENANCE ACTIVITIES, conducting a vote of the membership related to such assessments if required by law. In the event insufficient votes have been obtained to authorize an assessment, the Association shall seek authority from a court of competent jurisdiction for a reduced percentage of affirmative votes necessary to authorize the assessment, re-conducting the vote of the membership in order to obtain the votes necessary to authorize an assessment, and the Association shall take all action authorized by the Declaration or California law to collect delinquent assessments, including but not limited to, the recording and foreclosure of assessment liens.

(b) No provision of the Declaration, nor any other governing document of the Association or grant of authority to its members, shall grant or recognize a right of any member or other person to alter, improve, maintain or repair any of the Property in any manner which would impair the functioning of the BMP's to manage drainage or storm water runoff as described in the SWQMP. In the event of any conflict between the terms of this Agreement and the Declaration or other Association governing documents, the provisions of this Agreement shall prevail.

9. **Agreement Binds Successors and Runs With the Property.** It is understood and agreed that the terms, covenants and conditions herein contained shall constitute covenants running with the land and shall be binding upon the heirs, executors, administrators, successors and assigns of Owner and City, shall be deemed to be for the benefit of all persons owning any interest in the Property (including the interest of City or its successors in the easement granted herein). It is the intent of the parties hereto that this Agreement shall be recorded and shall be binding upon all persons purchasing or otherwise acquiring all or any lot, unit or other portion of the Property, who shall be deemed to have consented to and become bound by all the provisions hereof.

10. **Owner's Continuing Responsibilities Where Work Commenced or Permit Obtained.** Notwithstanding any other provision of this Agreement, no transfer or conveyance of the Property or any portion thereof shall in any way relieve Owner of or otherwise affect Owner's responsibilities for installation or maintenance of BMP's which may have arisen under the ordinances or regulations of City referred to in Recital B above, or other federal, state or local laws, on account of Owner having obtained a permit which creates such obligations or having commenced grading, construction or other land disturbance work.

11. **Amendment and Release.** The terms of this Agreement may be modified only by a written amendment approved and signed by the Director of

Development Services and by the Owner or Owner's successor(s) in interest. This Agreement may be terminated and Owner and the Property released from the covenants set forth herein, by a Release which City may execute if it determines that another mechanism will assure the ongoing maintenance of the BMP's or that it is no longer necessary to assure such maintenance.

12. **Agreement is Intended to Supplement Not Supercede.** This Agreement is intended to supplement and not supercede the requirements of the Chapter 13.42 of the Santee Municipal Code – Storm Water Management and Discharge Control. The requirements listed herein are in addition to the requirements set forth in the Code including Civil Actions and Enforcement Powers established under the Code.

13. **Governing Law and Severability.** This Agreement shall be governed by the laws of the State of California. Venue in any action related to this Agreement shall be in the Superior Court of the State of California, County of San Diego, East County Division. In the event that any of the provisions of this Agreement are held to be unenforceable or invalid by any court of competent jurisdiction, the validity, and enforceability of the remaining provisions shall not be affected thereby.

IN WITNESS WHEREOF, the parties have executed this Agreement on the _____ day of _____, 201__.

CITY OF SANTEE:

By: _____
Melanie Kush
Acting Director of Development Services

OWNERS:

By:_____
(sign here)

_____
(print name here)

_____
(title of signatory)

By:_____
(sign here)

_____
(print name here)

_____
(title of signatory)

(All OWNERS must sign)

(Proper notary acknowledgment of execution by OWNER must be attached.)

(President or vice-president **and** secretary or assistant secretary must sign for corporations. If only one officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering that officer to bind the corporation.)

CITY OF SANTEE
CERTIFICATE OF ACCEPTANCE
FOR
AGREEMENT TO PERFORM STORM WATER FACILITIES MAINTENANCE

This AGREEMENT by and between the City of Santee, a municipal corporation, and _____ is accepted for recording by the undersigned officers on behalf of the City of Santee pursuant to authority granted by Resolution No. 148-89 of the Santee City Council adopted on August 9, 1989.

Date:_____ By:_____
Carl Schmitz
Director of Engineering

CITY CLERK'S OFFICE:

STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO) ss.
CITY OF SANTEE)

On _____ , before me, Patsy Bell, CMC, City Clerk, personally appeared Melanie Kush, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity as Development Services Director, and that by his signature on the instrument the person, or entity upon behalf of which the person acted, executed the instrument on behalf of the City of Santee.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Patsy Bell
CMC, City Clerk

Exhibit “A”

ATTACHMENT 4
Copy of Plan Sheets Showing Permanent Storm Water BMPs

This is the cover sheet for Attachment 4.

Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

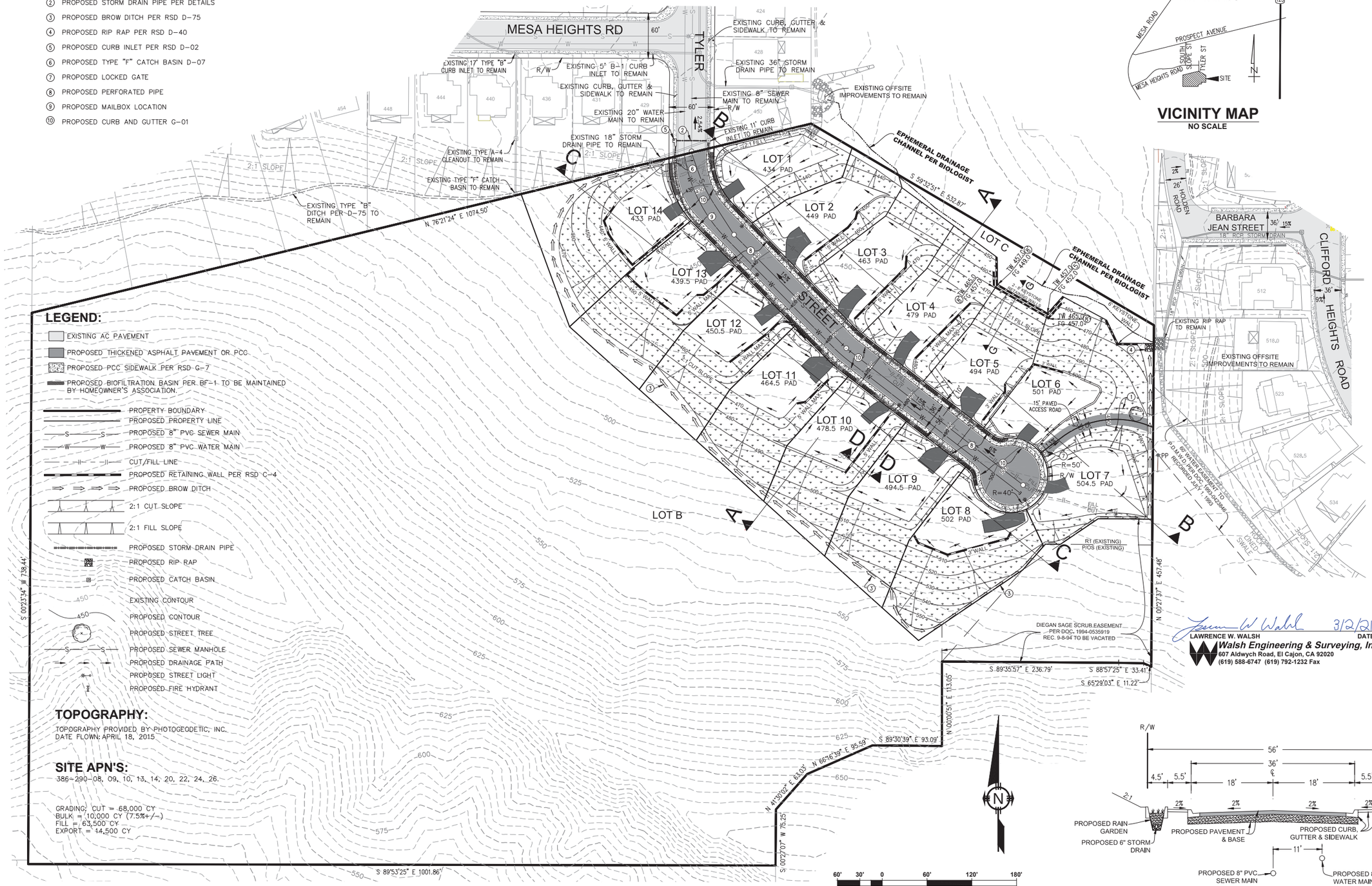
This will be shown on grading plan during final engineering

- ☐ Structural BMP(s) with ID numbers matching Form I-6 Summary of PDP Structural BMPs
- ☐ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- ☐ Details and specifications for construction of structural BMP(s)
- ☐ Signage indicating the location and boundary of structural BMP(s) as required by the [City Engineer]
- ☐ How to access the structural BMP(s) to inspect and perform maintenance
- ☐ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☐ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☐ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☐ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
- ☐ Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
- ☐ All BMPs must be fully dimensioned on the plans
- ☐ When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number shall be provided. Photocopies of general brochures are not acceptable.

PRELIMINARY GRADING PLAN
TYLER STREET PROJECT

NOTES:

1. PROPOSED 30' EASEMENT TO PADRE DAM
2. PROPOSED STORM DRAIN PIPE PER DETAILS
3. PROPOSED BROW DITCH PER RSD D-75
4. PROPOSED RIP RAP PER RSD D-40
5. PROPOSED CURB INLET PER RSD D-02
6. PROPOSED TYPE "F" CATCH BASIN D-07
7. PROPOSED LOCKED GATE
8. PROPOSED PERFORATED PIPE
9. PROPOSED MAILBOX LOCATION
10. PROPOSED CURB AND GUTTER G-01



LEGEND:

- EXISTING AC PAVEMENT
- PROPOSED THICKENED ASPHALT PAVEMENT OR PCC
- PROPOSED PCC SIDEWALK PER RSD G-7
- PROPOSED BIOFILTRATION BASIN PER BF-1 TO BE MAINTAINED BY HOMEOWNER'S ASSOCIATION.
- PROPERTY BOUNDARY
- PROPOSED PROPERTY LINE
- PROPOSED 8" PVC SEWER MAIN
- PROPOSED 8" PVC WATER MAIN
- CUT/FILL LINE
- PROPOSED RETAINING WALL PER RSD C-4
- PROPOSED BROW DITCH
- 2:1 CUT SLOPE
- 2:1 FILL SLOPE
- PROPOSED STORM DRAIN PIPE
- PROPOSED RIP RAP
- PROPOSED CATCH BASIN
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STREET TREE
- PROPOSED SEWER MANHOLE
- PROPOSED DRAINAGE PATH
- PROPOSED STREET LIGHT
- PROPOSED FIRE HYDRANT

TOPOGRAPHY:

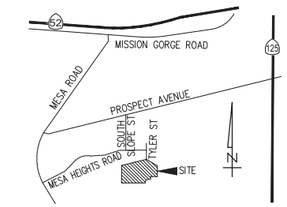
TOPOGRAPHY PROVIDED BY PHOTOGEODETIC, INC.
DATE FLOWN: APRIL 18, 2015

SITE APN'S:

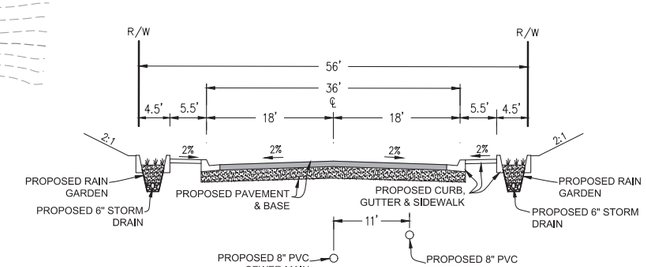
386-290-08, 09, 10, 13, 14, 20, 22, 24, 26.

GRADING: CUT = 68,000 CY
BULK = 10,000 CY (7.5%+/-)
FILL = 63,500 CY
EXPORT = 14,500 CY

SCALE: 1"= 60'



VICINITY MAP
NO SCALE



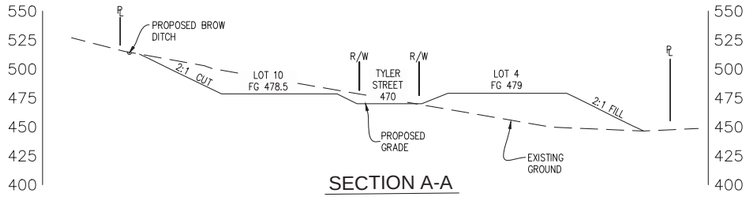
TYLER STREET
TYPICAL SECTION
NO SCALE

3/2/21

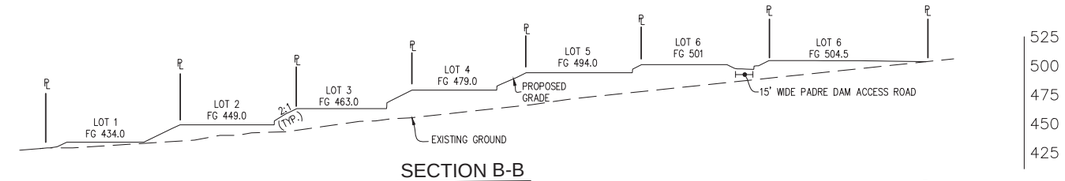
LAWRENCE W. WALSH
DATE
Walsh Engineering & Surveying, Inc.
607 Aldwych Road, El Cajon, CA 92020
(619) 588-6747 (619) 792-1232 Fax

REGISTERED PROFESSIONAL ENGINEER
LAWRENCE W. WALSH
46316
CIVIL
STATE OF CALIFORNIA

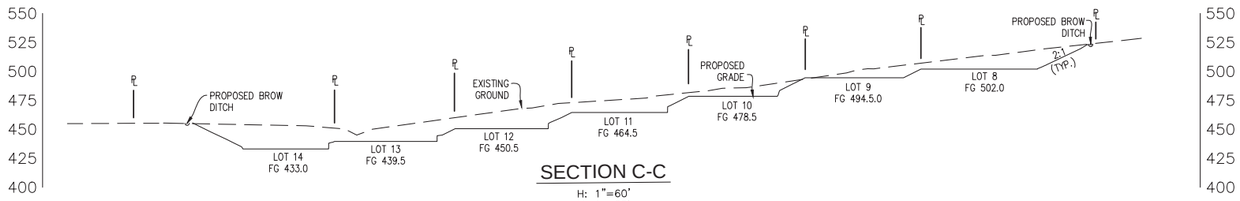
FOR CROSS SECTIONS A-A TO G-G, REFERENCE SHEET 1



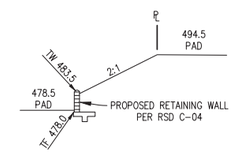
SECTION A-A
H: 1"=60'
V: 1"=60'



SECTION B-B
H: 1"=60'
V: 1"=60'



SECTION C-C
H: 1"=60'
V: 1"=60'



SECTION D-D
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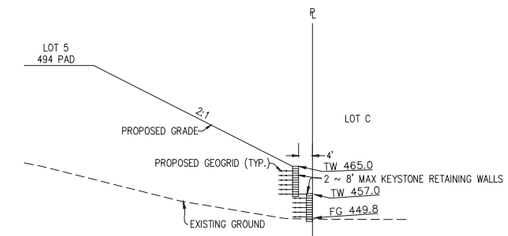
V: 1"=20'



SECTION G-G
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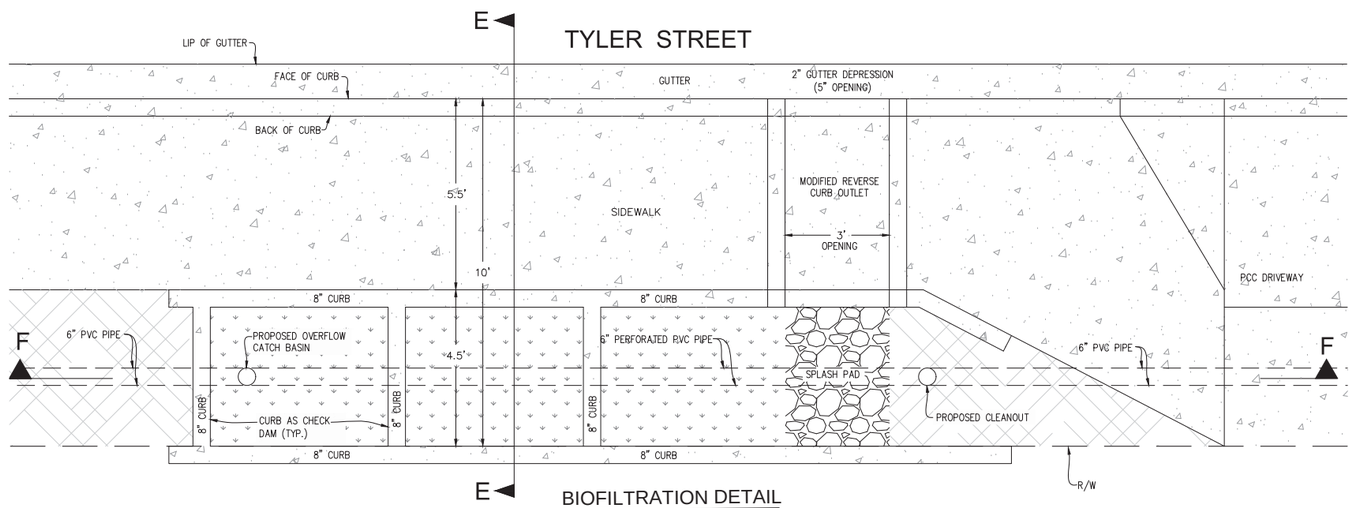
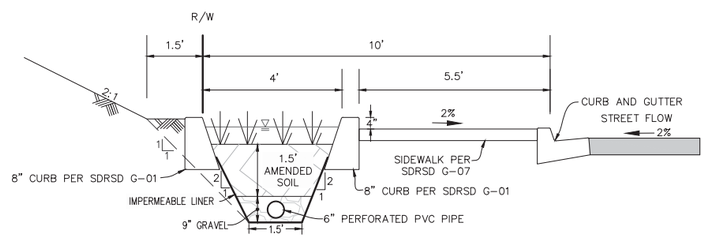
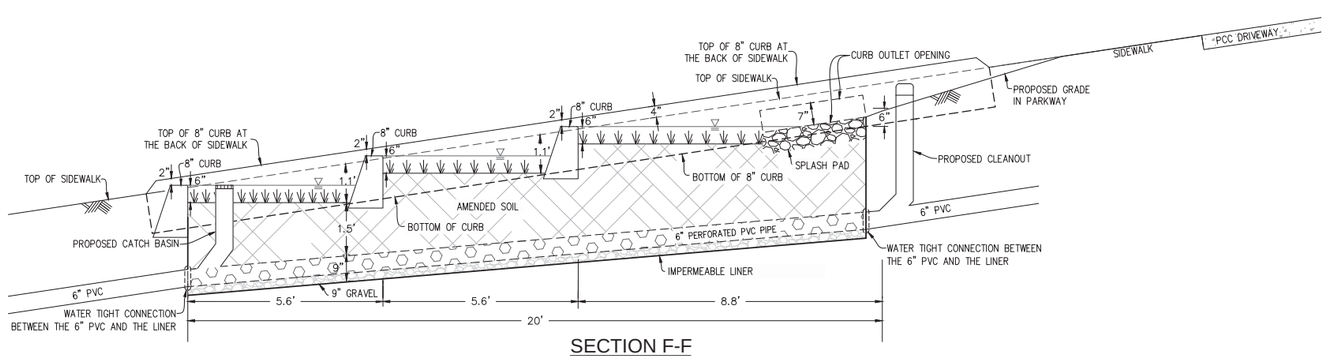
V: 1"=20'



BIOFILTRATION DETAIL
TYPICAL SECTION
SCALE: 1" = 2'



SECTION E-E
SCALE
H: 1" = 2'
V: 1" = 2'



SECTION F-F
SCALE
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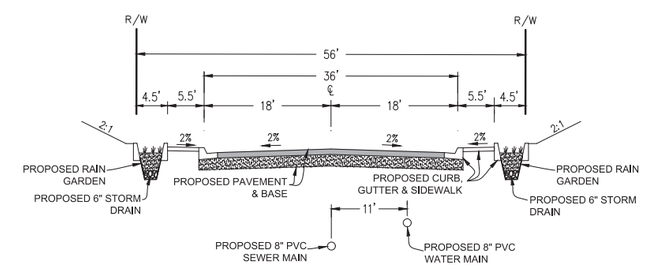
V: 1" = 2'



TYLER STREET
TYPICAL SECTION
NO SCALE

LAWRENCE W. WALSH
DATE 3/2/21
Walsh Engineering & Surveying, Inc.
607 Aldwych Road, El Cajon, CA 92020
(619) 588-6747 (619) 792-1232 Fax

REGISTERED PROFESSIONAL ENGINEER
LAWRENCE W. WALSH
46316
CIVIL
STATE OF CALIFORNIA

APPENDIX H

Santee School District

SCHOOLS:
Cajon Park
Carlton Hills
Carlton Oaks
Chet F. Harritt STEAM
Hill Creek
Pepper Drive
PRIDE Academy at Prospect Avenue
Rio Seco
Sycamore Canyon Alternative
Success Program

September 14, 2022

Danielle Roth, Operations Manager
Walsh Engineering & Surveying, Inc.
607 Aldwych Road
El Cajon, CA 92020

Re: Pending Residential Development – Tentative Map for 14 Single Family Dwellings
Tyler Street, Santee, CA 92071

Dear Ms. Roth:

I am in receipt of your request for a letter indicating availability of schools for the future residents of a planned subdivision residential development project located on Tyler Street in Santee, California. As I understand it, this development project would result in the construction and occupancy of 14 single family detached dwellings.

This project is in the attendance boundaries of Chet F. Harritt School. Based on the information you provided and current school capacity analysis, it is estimated that this development would generate seven (7) students. At this time, Chet. F. Harritt School can accommodate these new students, however, the District reserves the right to assign students to schools throughout the Santee School District based on various factors, including, but not limited to, space availability. Please also be aware that Santee School District serves students from Grades Preschool through 8th. Information on availability of high schools (Grades 9 through 12) should be obtained from Grossmont High School District.

The above notwithstanding, this project will require the payment of Developer Fees at the residential per square footage amount that is in effect at the time building permits are to be issued.

If you have any further questions regarding this matter, please feel free to contact me by email at karl.christensen@santeesd.net or by phone at 619-258-2321.

Sincerely,

Karl Christensen
Assistant Superintendent
Business Services

BOARD OF EDUCATION · Dustin Burns, Dianne El-Hajj, Ken Fox, Elana Levens-Craig, Barbara Ryan
DISTRICT SUPERINTENDENT · Kristin Baranski, Ed.D.

9625 Cuyamaca Street · Santee, California 92071-2674 · (619) 258-2300 · www.santeesd.net

GROSSMONT UNION HIGH SCHOOL DISTRICT
EST 1970

COMMITTED TO EXCELLENCE
SINCE 1920

• GOVERNING BOARD MEMBERS

CHRIS FITE
JIM KELLY
ELVA SALINAS
ROBERT SHIELD
DR. GARY C. WOODS

• SUPERINTENDENT

MARY BETH KASTAN

September 13, 2022

Walsh Engineering & Surveying, Inc.
607 Aldwych Road
El Cajon, CA 92020

Name of Project: Tyler Street Project

APN:	386-290-08	386-290-09
	386-290-10	386-290-13
	386-290-14	386-290-20
	386-290-22	386-290-24
	386-290-26	

Number of Units: 14 Lots

To Whom It May Concern:

The District is in receipt of your letter requesting information for the above project. The Grossmont Union High School District is responsible for providing education for students in grades 9 through 12. The proposed project is within the District, more specifically it lies within the West Hills High School attendance area.

The Grossmont Union High School District has a developer fee assessment policy. The **current** level of assessment is **$1.20** per square foot for residential and **$.19** cents per square foot for commercial projects.

If you have any questions regarding any part of this correspondence, please feel free to call me at 619-644-8177.

Sincerely,

Kimberly Devine
Facilities Control Specialist

POST OFFICE BOX 1043
TELEPHONE (619) 644-8000
LA MESA, CALIFORNIA 91944-1043
www.guhsd.net
FAX (619) 465-1349

APPENDIX I

CITY OF SANTEE

PROJECT FACILITY AVAILABILITY FORM, Sewer

Please type or use pen

Mark Steve, Trustee, Steve Family Trust 619-204-2218
Owner's Name Phone

802 Havenhurst Point
Owner's Mailing Address Street

La Jolla CA 92037
City State Zip

ORG_____ **S**
ACCT_____
ACT_____
TASK_____
DATE_____ 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:_____
☐ Time Extension?Case No._____
☐ Expired Map?Case No._____
☐ Other_____

B. ☒ Residential ..... Total number of dwelling units 14
☐ Commercial..... Gross floor area_____
☐ Industrial ..... Gross floor area_____
☐ Other ..... Gross floor area_____

C. ☒ Total Project acreage 27 Total number of lots 14

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)

386-290-08	386-290-09
386-290-10	386-290-13
386-290-14	386-290-20
386-290-22	386-290-24 & 26

Thomas Bros. Page 1250 Grid J1

Tyler Street (Vacant)
Project address Street

Santee 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: [signature] Date: 9-14-22

Address: 802 Havenhurst Point, La Jolla, CA 92037 Phone: 619-240-2218

(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 9/20/2023

District Name: PADRE DAM MUNICIPAL WATER DISTRICT Service area WEST

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 attached. Number of sheets attached: 1
☐ 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: [signature] Print name TOM MARTIN

Print title ENG. TECH / PROJECT MGR. Phone (619) 258-4638 Date 9/19/2022

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

PADRE DAM
Municipal Water District

9300 Fanita Parkway, Santee
619-258-4635

SEWER AVAILABILITY ATTACHMENT
CONDITIONS OF APPROVAL

PROJECT NAME Tyler Street FOR 14 Lot Subdivision MAP NUMBER _____

A.P.N.(s) 386-290-08, 09, 10, 13, 14, 20, 22, 24, 26

FACILITIES

Project location and lot size may determine if the proposed project will require a public sewer main extension. If a sewer main extension is necessary, the following will be requirements to proceed with the project. The Developer / Property Owner shall:

[X] Prepare plans for a Public Sewer system according to Padre Dam's Requirements.

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

[X] Install a Sewer System per the Padre Dam Rules and Regulations and Standard Specifications.

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

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

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

EASEMENTS

[X] Developer shall dedicate to Padre Dam all necessary easements for that portion of the sewer system which is to be public.

[X] Easements may be required by Padre Dam to allow for future main extensions to serve property beyond the boundaries of the map/project.

FACILITY COMMITMENT

[X] Adequate sewer facility commitment shall be committed prior to final project approval/map recordation and shall be available concurrent with project need.

Approved by: Tom Martin

Date: 09/19/2022

CITY OF SANTEE

PROJECT FACILITY AVAILABILITY FORM, Water

W

Please type or use pen

Mark Steve, Trustee, Steve Family Trust 619-204-2218
Owner's Name Phone

802 Havenhurst Point
Owner's Mailing Address Street

La Jolla CA 92037
City State Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____ 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:_____
☐ Time Extension?Case No._____
☐ Expired Map?Case No._____
☐ Other_____

B. ☒ Residential ..... Total number of dwelling units 14
☐ Commercial..... Gross floor area_____
☐ Industrial ..... Gross floor area_____
☐ Other ..... Gross floor area_____

C. ☒ Total Project acreage 27 Total number of lots 14

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)

386-290-08	386-290-09
386-290-10	386-290-13
386-290-14	386-290-20
386-290-22	386-290-24 & 26

Thomas Bros. Page 1250 Grid J1

Tyler Street (Vacant)
Project address Street

Santee 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: [signature] Date: 9-14-22

Address: 802 Havenhurst Point, La Jolla, CA 92037 Phone: 619-240-2218

(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 9/20/2023

District Name: PADRE DAM MUNICIPAL WATER DISTRICT Service area WEST

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: 1
☐ 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: [signature] Print name TOM MARTIN

Print title ENG. TECH / PROJECT MGR. Phone (619) 258-4638 Date 9/19/2022

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

PADRE DAM
Municipal Water District

9300 Fanita Parkway, Santee
619-258-4635

WATER AVAILABILITY ATTACHMENT
CONDITIONS OF APPROVAL

PROJECT NAME Tyler Street Project FOR 14 Lot Subdivision MAP NUMBER
A.P.N.(s) 386-290-08, 09, 10, 13, 14, 20, 22, 24, 26

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 / City and/or Padre Dam to install the public water system required for the project.

[X] Install a Potable Water System per the Padre Dam Rules and Regulations and Standard Specifications.

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

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

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

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

EASEMENTS

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

[X] Easements may be required by Padre Dam to allow for future main extensions to serve property beyond the boundaries of the map/project.

FACILITY COMMITMENT

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

SPECIAL CONDITIONS

[X] A potable water main extension in Tyler Street will be required to serve this project. The water main will be sized to meet the Fire Department's 2500 GPM fire flow requirement.

[X] There will be District Participation to upsize the water main to 12 inch in Tyler Street.

[X] This is a gravity system with elevations 629' HWL and 605' LWL. The upper lots may have low pressure and would require a private pump and backflow device.

[X] There is an existing 4 inch PVC recycled water main in Tyler Street. A short main extension would be required for recycled water to serve all community irrigation areas including bio-swales.

[X] The proposed gate between lots 5 and 6 will require 24/7 access to Padre Dam MWD.

[X] A 15 foot paved access road between lots 5 and 6 with a 30 foot easement to Padre Dam MWD is required.

[X] The existing 60 foot easement to Padre Dam must be shown on the plans. To quit claim the existing easement Padre Dam will require an easement like for like within Tyler Street prior to the map recording.

Approved by: Tom Martin Date: 09/19/2022